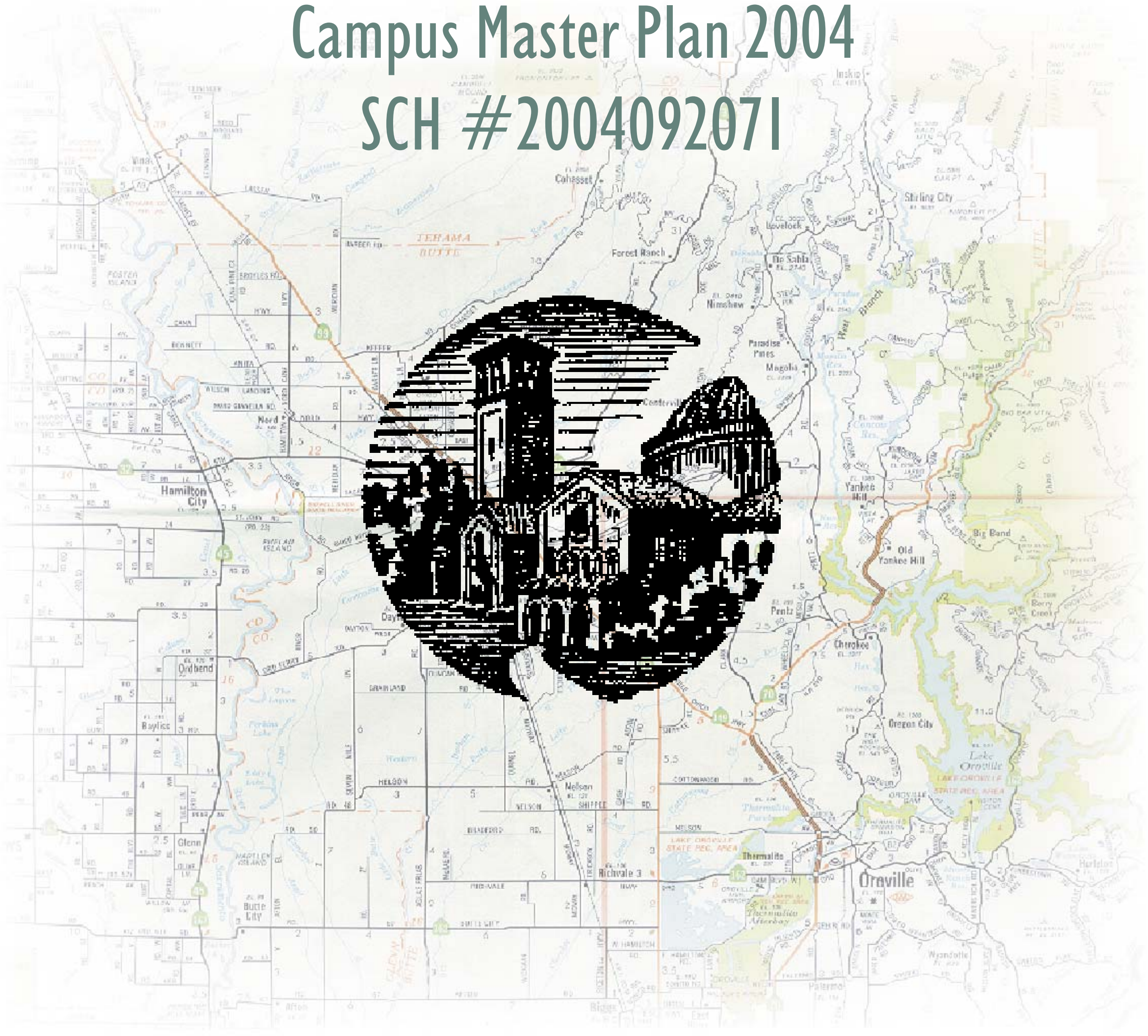
Draft Environmental Impact Report

California State University, Chico

Campus Master Plan 2004
SCH #2004092071



January, 2005

Quad Knopf

Submitted to:
Greg Francis, Director
Office of Facilities Planning
California State University, Chico
Chico, CA 95929-0025

Submitted by:
Quad Knopf, Inc.
One Sierragate Plaza, Suite 270C
Roseville, CA 95678
(916) 784-7823

Draft Environmental Impact Report

for

California State University, Chico
Campus Master Plan 2004
SCH #2004092071

Submitted to:

Greg Francis, Director
Office of Facilities Planning
California State University, Chico
Chico, CA 95929-0025

Submitted by:

Quad Knopf
One Sierragate Plaza, Suite 270C
Roseville, CA 95678
(916) 784-7823

January, 2005

03496

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

The proposed project consists of the adoption and implementation of an updated Campus Master Plan 2004 (see Figures 2-7 and 2-8). The existing Campus Master Plan was developed in 1990 and adopted in 1991. The proposed Campus Master Plan 2004 provides for a campus building plan that includes the construction of five new major academic buildings, two recreational facilities, a natural history museum, a child care center, approximately 1,300 bed-spaces of student housing, two parking structures, and improvements to the Agricultural Teaching and Research Center (ATRC) located approximately 2 miles from the main campus (see Figure 2-9). The Plan also calls for the demolition of several outdated and obsolete buildings. Other large building and infrastructure renovation projects are also identified. Implementation of various projects will require acquisition of additional properties adjacent to the campus. The Campus Master Plan 2004 also identifies improvements to the existing landscape and hardscape to address current visual and functional weaknesses. The Campus Master Plan 2004 also includes Design Guidelines that set forth a context for ensuring that the design of new buildings contributes to a consistent architectural vocabulary for the campus. The Campus Master Plan 2004 is designed to accommodate a student enrollment of 17,900 FTES (academic year full time equivalent students), an increase of 2,900 FTES.

Proposed Campus Master Plan 2004 Projects

Project	Description
Butte Hall – Rehabilitation	48,538 ASF (88,874 GSF)
Taylor II – Demolition/Replacement	76,000 ASF (116,900 GSF)
Student Services Center (In process)	79,960 ASF (122,422 GSF)
Modoc II –Demolition/Replacement	37,980 ASF (58,400 GSF)
Siskiyou II - Demolition/Replacement	38,200 ASF (58,800 GSF)
Rio Chico Physical Education/Aquatic Center - Acquisition	46,200 ASF (71,000 GSF)
Outdoor Physical Education Facilities	5 acres
Whitney Hall - Demolition/Replacement College Park – Acquisition	1,298 new bed spaces
Whitney Hall – Food Service	23,000 GSF (6,500 meals/day, 2,200 meal plans)
Outdoor Recreation	38 acres
Wildcat Activity Center	124,658 – 133,400 square feet
Indoor Child Care Facilities	137,600 ASF (172,000 GSF)
Outdoor Child Care Areas	177,200 square feet
Automobile Parking	1,430 additional parking spaces
Bikeways & Bike Parking	Relocate and add new bike parking facilities
Northern California Natural History Museum	11,000 square feet

Project	**Description**
Utility Infrastructure	Upgrades & Expansion
Agriculture Teaching & Research Center	Renovated swine, beef & sheep units Demonstration & research facility (10,400 GSF) ATRC events center (45,000 GSF) Expanded commodity storage area (75,000 GSF) Expanded, ecologically updated waste ponds New dairy unit ATRC conference center (7,000 GSF) Renovated and new horticulture facilities New student housing New equipment storage facility (15,000 GSF) New pesticide seed fertilizer building (5,875 GSF) Meat laboratory upgrades

New infrastructure will be needed to serve planned new buildings and other facilities. Upgrades will be needed to meet evolving needs, such as telecommunications and classroom technology, and to achieve cost savings related to maintenance and energy savings. Specific modifications and improvements to the utility infrastructure include the following:

- Expand cooling capacity (chilled water generation and storage) by improving building efficiencies

- Expand central plant to accommodate additional chillers, towers, and a chilled water storage tank

- Extend the campus-wide underground distribution system to areas that are not adequately served and to serve planned new facilities

- Extend, upsize and repair the campus-wide underground steam distribution system to serve planned new facilities

- Extend the campus-wide 12 KV power distribution system to load centers not presently served

- Re-allocate buildings to different 12KV circuits to balance the load and make power available for areas master planned for new construction

- Provide emergency power for buildings currently without service

- Increase the capacity of existing emergency systems to support building critical functions

- Correct fuel and air pollution issues for existing generators

- Repair and upgrade the antiquated and undersized natural gas distribution system to provide additional capacity

The CSU Chico Central Plant facility located in the southwest corner of the athletic fields area of campus will be the site of new and upgraded equipment needed to serve campus growth and achieve energy efficiency and savings. An area to the north of the existing Central Plant is indicated as the logical area for Central Plant expansion.

Land Acquisition

CSU Chico is the second smallest campus by acreage in the CSU system. In order to continue to prosper and attract qualified students, the campus must obtain additional land in order to meet a variety of student needs. These would include such things as parking, housing, green space, outdoor physical education and recreation. The Campus Master Plan 2004 revision proposes the acquisition of the College Park and Rio Chico neighborhoods, as specified in the previous Master Plan.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Section 15123(b)(1) of the Guidelines for Implementation of the California Environmental Quality Act (State CEQA Guidelines) provides that the summary shall identify each significant effect with proposed mitigation measures that would reduce or avoid that effect. This information is summarized in Table S-1, Summary of Impacts and Mitigation Measures.

ALTERNATIVES TO THE PROJECT

Section 15126.6 of the State CEQA Guidelines requires the EIR to describe a reasonable range of alternatives to the project or to the location of the project that could feasibly accomplish the basic objectives of the project, and to evaluate the comparative merits of the alternatives. The impacts of the proposed project that have been identified as significant after mitigation include: disturbance of archaeological or historical resources as a result of improvements identified for the main CSU Chico campus and cumulative development in the study area by the Year 2025 will generate traffic on the planned street system

The EIR evaluates the following alternatives in Chapter Four of this EIR:

- No Project Alternative
- Unmet Needs Alternative
- Housing/Parking Alternative

NO PROJECT ALTERNATIVE

In accordance with Section 15126.6(e)(3)(B) of the CEQA Guidelines, the No Project alternative consists of an analysis of the circumstance under which the project does not proceed; that is, the project site will remain guided by the existing Campus Master Plan (1990) ("No Project" alternative).

UNMET NEEDS ALTERNATIVE

This alternative would allow those projects that are required to meet the existing unmet needs of the University. Improvements to the ATRC would be limited to those considered to be essential. These projects would include all of the ATRC Phase 1 and ATRC Phase III projects as well as the renovated swine unit. Eliminated from this alternative would be the new dairy unit, the Conference Center and the Events Center. Infrastructure improvements necessary to support these projects would be included.

HOUSING/PARKING ALTERNATIVE

This alternative would analyze a project that included only those facilities designed to accommodate additional and improved housing and parking facilities. This alternative would eliminate the planned recreational facilities as well as the natural history museum.

Improvements to the ATRC would be the same as for the unmet needs alternative above.

The environmentally superior alternative would be the "no project" alternative, since there would not be an increase in enrollment, resulting in fewer students and a corresponding reduction in impacts to traffic, circulation, and parking; however, the "no project" alternative would not meet the project objectives, particularly with regard to accommodating the predicted increase in enrollment.

Among the remaining alternatives, the housing/parking alternative would be the environmentally superior alternative, since very few changes would take place to the campus buildings resulting in fewer impacts on the physical environment. The housing/parking alternative does not meet several of the stated project objectives of accommodating the increase in enrollment predicted for the campus.

The alternatives and associated impacts are summarized as follows:

- **No Project Alternative.** Under the "no project" alternative, impacts to aesthetic resources would be slightly less than the proposed project for the main campus. Aesthetic impacts related to the ATRC facility would be greater under the "no project alternative" since no improvements would be made to this facility. Impacts to air quality would be slightly reduced under the "no project" alternative. The impacts to biological resources would be similar under this alternative. The "no project" alternative would be likely to have greater impact on cultural resources, since it proposed demolition of houses in the Rio Chico area. Impacts on other cultural resources would be similar to the proposed project. Impacts to geology and soils would be similar under both the 1990 Master Plan and the Campus Master Plan 2004. The Campus Master Plan 2004 would have a greater level of soil disturbance due to the increased number of buildings on the site. The "no project" alternative would have somewhat greater impacts related to hazards and hazardous materials since the proposed improvements to the ATRC would not take place. The “no project” alternative would have similar impacts to hydrology and water quality as compared to the Campus Master Plan 2004. The Campus Master Plan 2004 would be more beneficial due to the improvements specified for the ATRC facility that will improve conditions related to the animal confining facilities. The “no project” alternative would have greater impacts with regard to land use and planning than the Campus Master Plan 2004 since it does not provide the facilities necessary to meet the needs of the campus and the community. There would be less increase in traffic and construction noise under the “no project” alternative, since the campus would remain at current enrollment. Under the “no project” alternative, impacts related to population and housing would be reduced, as compared to the proposed project. The additional bed spaces called for in the project will allow more students to live on campus reducing related impacts to parking and circulation. Impacts to public services under the “no project” alternative would be similar to the impacts under the proposed Campus Master Plan 2004. Under the “no project” alternative, the beneficial impact of the new recreational facilities would not be realized. The “no” project alternative would have slightly less impact on traffic and circulation since it would not accommodate the greater enrollment predicted under the proposed plan and would not include a new conference and events center at the ATRC. With regard to the issue of parking, the “no project” alternative would also have less impact than the proposed Campus Master Plan since there would be no increase in enrollment. The proposed Campus Master Plan 2004 would have a similar impact related to parking as the 1990 Master Plan, since both plans include provisions for additional parking.

- **Unmet Needs Alternative.** Under this scenario, the impacts on aesthetics would be slightly reduced since some of the renovation projects would maintain the same building footprint and would be smaller in height. Impacts on aesthetics for the ATRC would be slightly increased since some of the improvements would not be undertaken. Impacts to air quality would be slightly reduced under the “unmet needs” alternative. There would be less construction activities, resulting in less exhaust emissions and fugitive particulate matter emissions and student enrollment would remain at current levels so there would be no increase in air pollutant emissions. Impacts on cultural resources would be the same under this alternative as under the proposed Campus Master Plan 2004. Impacts on hazards and hazardous materials would be the same (less than significant) under this alternative since the improvements specified for the ATRC facility would still occur. Impacts to hydrology would be reduced in this alternative. The alternative would not vary significantly from the proposed project with regards to water quality or hydrology. Impacts from incompatibilities with existing or planned land uses in the vicinity are less than significant, as they are with the proposed Campus Master Plan 2004. There would be less increase in traffic noise under the “unmet needs” alternative, since the campus would remain at current enrollment. Additionally, there would be less construction noise since fewer projects are anticipated under the proposed Master Plan. Under this alternative there would be less recreational facilities developed, although there would be sufficient recreational facilities to serve the student population. Because the additional student population is likely to occur under either scenario, the impacts to parks and recreation are greater under this alternative. Impacts to the transportation and circulation system would be greater under this scenario. The reduction in improvements would result in fewer provisions for parking and street improvements designed not only to accommodate future enrollment growth, but also to address existing transportation and parking deficiencies. The impacts to transportation and circulation are considered greater under this alternative.

- **Housing/Parking Alternative.** Under this scenario, the impacts on aesthetics would be increased since many of the projects would not be built, and older buildings that are incompatible with the campus style would not be replaced. Impacts on aesthetics for the ATRC would be slightly increased since the some of the improvements that would enhance visual quality would not be undertaken. Impacts to air quality would be similar under the "housing/parking" alternative. There would be construction activities associated with creating additional housing and parking facilities, resulting in similar exhaust emissions and fugitive particulate matter emissions. Carbon monoxide and other air pollutant emissions in the basin would also be similar. Impacts on cultural resources would be reduced under this alternative as under the proposed Campus Master Plan 2004. The reduction in construction would limit the amount of disturbed lands, and reduce the potential for construction activities to impact or destroy historic or cultural resources. Impacts on hazards and hazardous materials would be the same (less than significant) under this alternative since the improvements specified for the ATRC facility would still occur. Impacts to drainage would be reduced under this alternative. Impacts to hydrology and water quality would be expected to remain the same under the alternative. Impacts from incompatibilities with existing or planned land uses in the vicinity would be reduced slightly as compared with the proposed Campus Master Plan 2004. More parking would be provided for the campus that would reduce the parking congestion downtown. More students would be housed on-campus, which would reduce the need for off-campus housing. The impacts related to noise would essentially be the same as the proposed Campus Master Plan 2004 under the "housing/parking" alternative, since new facilities would be constructed on campus and additional parking would be added resulting in increased traffic noise. Under this alternative there would be less recreational facilities developed, although there would be sufficient recreational facilities to serve the student population. Impacts to the transportation and circulation system would be greater under this scenario. The reduction in improvements would result in fewer provisions for parking and street improvements designed not only to accommodate future enrollment growth, but also to address existing transportation and parking deficiencies.

Table S-1
Summary of Impacts and Mitigation Measures

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.1 Aesthetics/Visual Resources					
3.1-1	Have a substantial adverse effect on a scenic vista.	Less than Significant		No mitigation measures are required.	
3.1-2	Substantially degrade the existing visual character or quality of the site and its surroundings?	Potentially Significant	3.1-2a	Future proposals for the rehabilitation, renovation, and/or replacement of structures on the Chico campus shall adhere to the design principles and characteristics set forth in the Campus Master Plan 2004. These standards include: • Common building materials and colors: • red brick walls; • potential limited use of concrete for building columns, surrounds, lintels, planter seat walls; • iron and steel railings, low fencing, trash receptacles/surrounds; • curved red tile roofs, gable and hip types in the historic core area. • Modernistic to modern with classical forms and elements as stylistic constants. • Landscaping, particularly trees, to form a soft contrast and frame to campus buildings contributing to the unification of the overall visual environment.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.1-2b	Future proposals for the rehabilitation, renovation, and/or replacement of structures in the historic core area shall complement the historic core buildings in terms of building forms, materials and colors and shall adhere to the guidelines set forth in the Campus Master Plan 2004 including: • Principal roofs shall be of a gable design with eaves and pitch similar to the nearest neighboring historic core structure. • Roofs shall be constructed of curved tiles of a color similar to the nearest neighboring historic core structure. • Principal gable ridge line heights shall not exceed that of the nearest neighboring historic core structure. • Walls shall be constructed of brick of a type and coursing similar to that of the nearest neighboring historic core structure.	Less than Significant
3.1-3	Introduction of new sources of light and glare as a result of implementation of the CSU Chico Campus Master Plan 2004, and impacts of increased lighting on the	Potentially Significant	3.1-3a	New lighting proposed for future projects as a result of implementation of the Campus Master Plan 2004 shall be directed downward and shall not shine onto adjacent properties. Additionally, all new lighting	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
	night sky.			shall adhere to the guidelines in the Campus Master Plan 2004, including: 1. The offsite visibility and potential glare of the lighting will be restricted by specification of non-glare fixtures, and placement of lights to direct illumination into only those areas where it is needed. 2. Appropriate fixture selection and light placement shall minimize light pollution and enhance natural color rendition. All lighting shall utilize refractive lenses and be shielded to reduce glare into buildings and neighboring areas. 3. Walkway lighting fixtures shall not be mounted higher than twenty feet unless necessary for security reasons.	
		Potentially Significant	3.1-3b	Individual developments associated with the Campus Master Plan 2004 shall minimize lighting to areas required for safety, security, or normal operations on the main campus and at the ATRC and shield lighting from public view to the greatest extent possible. The direction and shielding of lighting shall be regulated to reduce light spillage, light pollution, and glare. Highly directional light fixtures shall be used with non-glare lighting fixtures. All lighting and light shields shall be installed and operated consistent with manufacturer's specifications.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.2 Air Quality					
3.2-1	Construction activities such as demolition, clearing, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would temporarily affect local air quality for adjacent land uses.	Potentially Significant	3.2-1	Consistent with BCAQMD Indirect Source Review Guidelines, the following construction dust and equipment exhaust emissions measures should required in all construction contracts: • Watering should be used to control dust generation during demolition of structures and break-up of pavement. • Cover all trucks hauling demolition debris from the site. • Use dust-proof chutes to load debris into trucks whenever feasible. • Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil and wind exposure. • Use chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days. • On-site vehicles limited to a speed of 15 mph on unpaved areas.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				• Plant vegetative ground cover in disturbed areas as soon as possible. • Cover inactive storage piles. • Paved streets adjacent to the development site should be swept or washed at the end of each day as necessary to remove excessive accumulations of silt and/or mud which may have accumulated as a result of activities on the development site. • Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the BCAQMD shall also be visible to ensure compliance with BCAQMD Rule 201 and 207 (Nuisance and Fugitive Dust Emissions). • Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person). • Require contractors to minimize exhaust emissions by maintaining equipment engines in good condition and in proper	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for long periods.	
3.2-2	The project would change traffic volumes and congestion levels, changing carbon monoxide concentrations at land uses near the roadway.	Less than Significant		No mitigation measures are required.	
3.2-3	Vehicle trips generated by the project and area sources within the project would result in new air pollutant emissions within the air basin.	Potentially Significant	3.2-3	Future development that occurs as a result of the implementation of the Master Plan shall adhere to the following standards: • Orient buildings to the north for natural cooling and the use of appropriate landscaping that maximizes the potential of solar design principles. • Use of solar water heating for at least 25 percent of the building floor area. • Incorporate shade trees, adequate in number and proportional to the project size, throughout the site to reduce building heating and cooling requirements. • Provide preferential parking spaces for carpools and vanpools.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.2-4	The project and cumulative development would change traffic volumes and congestion levels, changing carbon monoxide concentrations at land uses near the roadway.	Less than Significant		No mitigation measures are required.	
3.3 Biological Resources					
3.3-1	Direct or indirect effects on species, identified as a candidate, sensitive, special-status species, or migratory, including their habitat, or movement corridors (Main Campus).	Potentially Significant	3.3-1a	The individual project plans for all projects located along Big Chico Creek shall contain a permanent 100-foot, or greater, avoidance buffer to separate the individual project from Big Chico Creek. If a permanent 100-foot buffer is determined infeasible, the project proponent shall conduct protocol level surveys consistent with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999). If presence of this species is determined, a permanent 25-foot buffer shall be maintained and a qualified biologist shall coordinate with the USFWS for a determination of not likely to adversely affect. If the 25-foot avoidance buffer is determined to be infeasible, the project proponent shall obtain the appropriate take permit from the USFWS prior to any construction (Section 7 or Section 10 of the Endangered Species Act).	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.3-1b	The individual project plans for all projects located along Big Chico Creek shall contain a permanent 100-foot, or greater, avoidance buffer to separate the individual project from Big Chico Creek. If a permanent 100-foot buffer is determined infeasible, the project proponent shall conduct protocol level surveys consistent with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999). If presence of this species is determined, a permanent 25-foot buffer shall be maintained and a qualified biologist shall coordinate with the USFWS for a determination of not likely to adversely affect. If the 25-foot avoidance buffer is determined to be infeasible, the project proponent shall obtain the appropriate take permit from the USFWS prior to any construction (Section 7 or Section 10 of the Endangered Species Act).	Less than Significant
3.3-2	Direct or indirect effects on species, identified as a candidate, sensitive, special-status species, or migratory, including their habitat, or movement corridors (ATRC site).	Potentially Significant		See Mitigation Measure 3.3-1b.	Less than Significant
3.3-3	Adverse effects on federally protected wetlands as defined by Section 404 of the Clean Water Act	Potentially Significant	3.3-3	Individual project plans for all projects located along Big Chico Creek shall be reviewed by a qualified biologist to	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
	(including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.			determine if the plans pose the potential for disturbance to protected wetlands and/or waterways. If it is determined that the project plans do pose a risk of disturbance to wetlands and/or waterways then the project proponent shall coordinate with the US Army Corp of Engineers and the California Department of Fish and Game to obtain the appropriate permits and/or agreements (i.e. Section 401 and 404 permit, and Streambed Alteration Agreement).	
3.4 Cultural Resources					
3.4-1	Disturbance of archaeological or historical resources as a result of improvements identified for the Agriculture Teaching and Research facility.	Potentially Significant	3.4-1a	Prior to any proposed activity that will result in the excavation of sub-surface sediment within the 800 acre ATRC, the Research Archaeology Program, a CSU Chico Foundation supported program, and the Mechoopda Indian Tribe should be consulted prior to the commencement of ground disturbing activities.	Less than Significant
		Potentially Significant	3.4-1b	During any future excavation of sub-surface sediment within the 95-acre ATRC core area, an archeological monitor should be present to observe this activity. Given the strong possibility that such undocumented resources may be related to the occupation and use of the area by the Mechoopda Indian Tribe, a representative tribal monitor should also be present to act as a liaison to the Mechoopda	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				Indian Tribe and also to act as a "most likely descendant" should Native American internments be unearthed during construction activities.	
		Potentially Significant	3.4-1c	Prior to the demolition, or alteration, of any building or structure greater than 45 years in age within the 95-acre ATRC, a qualified architectural historian and historian be retained to evaluate the potential significance of these resources.	Less than Significant
3.4-2	Disturbance of archaeological or historical resources as a result of improvements identified for the main CSU Chico campus.	Significant & Unavoidable	3.4-2a	Prior to any proposed activity that will result in the excavation of sub-surface sediment within the 119 acre CSU Chico campus area, the Research Archaeology Program, a CSU Chico Foundation supported program, and the Mechoopda Indian Tribe should be consulted prior to the commencement of ground disturbing activities.	Significant & Unavoidable
		Significant & Unavoidable	3.4-2b	During any future excavation of sub-surface sediment within the 119 acre CSU Chico campus area, an archeological monitor should be present to observe this activity. Given the strong possibility that such undocumented resources may be related to the occupation and use of the area by the Mechoopda Indian Tribe, a representative tribal monitor should also be present to act as a liaison to the Mechoopda Indian Tribe and also to act as a	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				“most likely descendant” should Native American internments be unearthed during construction activities.	
		Significant & Unavoidable	3.4-2c	Prior to the demolition, or alteration, of any building or structure greater than 45 years in age within the 119 acre CSU Chico campus area or one of the land acquisition areas, a qualified architectural historian and historian should be retained to evaluate the potential significance of these resources.	Significant & Unavoidable
3.4-3	Disturbance of unique paleontological resources as a result of improvements identified for the main CSU Chico campus or the ATRC.	Less than Significant		No mitigation measures are required.	
3.5 Geology and Soils					
3.5-1	Rupture of a known earthquake fault.	Less than Significant		No mitigation measures are required.	
3.5-2	Strong seismic ground shaking resulting in seismic ground failure, including liquefaction.	Less than Significant		No mitigation measures are required.	
3.5-3	Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill.	Potentially Significant	3.5-3	Future development projects that may occur as a result of implementation of the CSU Chico Campus Master Plan 2004 shall comply with Best Management Practices. Examples of Best Management Practices include, but are not limited to the following:	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				• Placing fiber rolls around onsite drain inlets to prevent sediment and construction-related debris from entering inlets. • Placing fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site. • Placing silt fences downgradient of disturbed areas to slow down runoff and retain sediment. • Specifying that all disturbed soil will be seeded, mulched, or otherwise protected by October 15th . • Stabilizing construction entrance to reduce the tracking of mud and dirt onto public roads by construction vehicles. • Applying hydraulic mulch that temporarily protects exposed soil from erosion by raindrop impact or wind.	
3.6 Hazards & Hazardous Materials					
3.6-1	A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation).	Potentially Significant	3.6-1	Improvements to the ATRC facility related to the new pesticide and fertilizer building shall meet all the requirements of the Safe Drinking Water and Toxic Enforcement Act	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				(Proposition 65) standards and shall adhere to best practices as related to on-farm chemical use.	
3.6-2	Possible interference with an emergency response plan or emergency evacuation plan.	Potentially Significant	3.6-2	Prior to closure of any of the three street segments, a plan should be developed that will ensure that there will be no interference with an emergency response plan or emergency evacuation plan.	Less than Significant
3.6-3	Exposure of people to existing sources of potential health hazards.	Less than Significant		No mitigation measures are required.	
3.6-4	Result in a safety hazard related to a private airport available for public use for people residing or working in the project area.	Less than Significant		No mitigation measures are required.	
3.7 Hydrology and Water Quality					
3.7-1	Violation of water quality standards or degradation of water quality: [Criteria (a) and (f)].	Less than Significant		No mitigation measures are required.	
3.7-2	Depletion of groundwater supplies or substantial interference with groundwater recharge: [Criteria (b)].	Less than Significant		No mitigation measures are required.	
3.7-3	Drainage pattern alteration; runoff increase creating flooding or polluted runoff: [Criteria (c), (d), and (e)].	Less than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.7-4	Flood hazard impacts on housing; project impedance of or redirection of 100-year flood hazard flows: [Criteria (g) and (h)].	Less than Significant		No mitigation measures are required.	
3.7-5	Dam failure impacts: [Criteria (i)].	No impact		No mitigation measures are required.	
3.7-6	Seiche, tsunami or mudflow impacts: [Criteria (j)].	No impact		No mitigation measures are required.	
3.8 Land Use					
3.8-1	Physically divide an established community.	Less than Significant		No mitigation measures are required.	
3.8-2	Land use conflicts between the proposed project and existing and planned land uses in the vicinity of the project site.	Less than Significant		No mitigation measures are required.	
3.8-3	Conflict with any applicable habitat conservation plan or natural community conservation plan.	Less than Significant		No mitigation measures are required.	
3.9 Noise					
3.9-1	Potential for increased traffic noise as a result of the proposed Campus Master Plan 2004 - Main Campus under existing plus project conditions.	Less than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.9-2	Potential for increased traffic noise as a result of the proposed Campus Master Plan 2004 - Main Campus under future plus project conditions.	Less than Significant		No mitigation measures are required.	
3.9-3	Potential impact of construction noise as a result of planned improvements for the Main Campus.	Potentially Significant	3.9-3a	All heavy construction equipment and all stationary noise sources (such as diesel generators) shall be in good working order and have manufacturer installed mufflers.	Less than Significant
		Potentially Significant	3.9-3b	Equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from existing residences as is feasible.	Less than Significant
		Potentially Significant	3.9-3c	All construction shall be between the hours of 7:00 a.m. and 9:00 p.m. daily except Sundays and holidays. Construction activities between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays shall meet at least one of the following noise limitations: 1. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of twenty-five feet from the source. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				2. The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.	
3.9-4	Potential for earthborn construction vibration as a result of activities associated with the Main Campus.	Less than Significant		No mitigation measures are required.	
3.9-5	Potential for increased traffic noise at as a result of the proposed Campus Master Plan 2004 - ATRC under existing plus project conditions.	Less than Significant		No mitigation measures are required.	
3.9-6	Potential for increased traffic noise at as a result of the proposed Campus Master Plan 2004 - ATRC under future plus project conditions.	Less than Significant		No mitigation measures are required.	
3.9-7	Potential for construction noise as a result of planned improvements for the ATRC.	Potentially Significant	3.9-7a	All heavy construction equipment and all stationary noise sources (such as diesel generators) shall be in good working order and have manufacturer installed mufflers.	Less than Significant
		Potentially Significant	3.9-7b	Equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from existing residences as is feasible.	Less than Significant
		Potentially Significant	3.9-7c	All construction shall be between the hours of 7:00 a.m. and 9:00 p.m. daily except Sundays and holidays.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				Construction activities between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays shall meet at least one of the following noise limitations: 1. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of twenty-five feet from the source. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible. 2. The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.	
3.9-8	Potential for earthborn construction vibration as a result of planned improvements at the ATRC.	Less than Significant		No mitigation measures are required.	
3.9-9	Potential for increased agricultural operations noise as a result of planned improvements for the ATRC.	Potentially Significant	3.9-9a	A disclosure statement should be provided to all prospective buyers of properties within the Plan Area notifying of the presence of existing and future noise-producing agricultural-related activities in the immediate Plan Area.	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.9-9b	A buffer of at least 100 feet should be provided between agricultural lands and future residential developments within the ATRC Master Plan Area.	Less than Significant
3.10 Population and Housing					
3.10-1	Development of the proposed project would increase the population in the vicinity (growth-inducing impact).	Less than Significant		No mitigation measures are required.	
3.10-2	The potential of the project to displace residents currently living in College Park and Rio Chico.	Less than Significant		No mitigation measures are required.	
3.10-3	The potential impact on the City of Chico's vacancy rate as a result of the increased enrollment enabled by the proposed Campus Master Plan 2004.	Less than Significant		No mitigation measures are required.	
3.11 Public Services and Facilities, Utilities					
3.11-1	Provision of adequate public protection to serve the proposed project.		3.11-1a	Currently there are several "Blue Light" emergency telephones located throughout the campus which ring directly into the Communications Center of the University Police Department. These auto-dialing phones may be used to summon emergency police, fire or medical assistance. Before construction is completed on new facilities on the main campus, new "Blue Light"	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				phones can be added to ensure safety at these locations. Community Service Officers (CSO) of the CSU Chico Police Department are student positions. The CSO provides support to the staff of sworn and non-sworn police personnel. Duties include parking enforcement, special event security, escort detail, bicycle licensing, property engraving, room unlocks, clerical dispatch support, and campus lot patrol. More of these positions can be created if needed to ensure proper enforcement of laws and safety concerns.	
			3.11-1b	Before any new facilities are constructed, the ATRC will provide a detailed fire safety plan that will uphold all Federal and State fire codes for all facilities within the ATRC.	
3.11-2	Maintenance of public facilities, including roads.	Less than Significant		No mitigation measures are required.	
3.11-3	Need for new systems for power or natural gas.	Less than Significant		No mitigation measures are required.	
3.11-4	Need for additional solid waste disposal.	Less than Significant		No mitigation measures are required.	
3.11-5	Need for additional sewage treatment.	Less than Significant		No mitigation measures are required.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.12 Parks and Recreation					
3.12-1	Construction of the new recreational facilities could result in impacts to the physical environment.	Potentially Significant	3.12-1	All buildings and activity areas shall be located at least 100 feet from the top of the stream banks. BMP's selected shall be in accordance with the California Stormwater Quality Association "Stormwater Best Management Practice Handbook," or other appropriate criteria as determined by the University in consultation with the City of Chico. The erosion control plan shall indicate that proper control of erosion, sedimentation, siltation and other pollutants will be implemented per NPDES permit requirements and University standards. The plan shall address storm drainage during construction and propose BMPs to reduce erosion and water quality degradation. The plan shall indicate whether grading will occur in the winter months. If grading is proposed for the winter months, mechanisms to avoid sedimentation of creeks and damage to riparian habitat shall be identified. The plan shall also specify restoration measures for graded areas including but not limited to landscaping, revegetation, the use of rice straw or other weed free vegetative material for erosion control measures. Drainage facilities shall be protected as necessary to prevent erosion of the onsite	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				soils immediately following grading activities. In addition, cut slopes and drainage ways within native material shall be protected from direct exposure to water runoff immediately following grading activities.	
3.13 Transportation and Circulation					
3.13-1	Generation of vehicle trips due to increased enrollment and the development of parking structures will increase traffic on the adjacent street system.	Less than Significant		No mitigation measures are required.	
3.13-2	Implementation of the Master Plan will result increased demand for on-campus parking.	Less than Significant		No mitigation measures are required.	
3.13-3	Pedestrian/Bicycle Activity near the Campus could create conflicts with automobiles.	Potentially Significant	3.13-3	Pedestrian/bicycle activity shall be addressed in the design of new parking facilities. Traffic controls devices needed to ensure crossing safety shall be provided as new facilities are developed.	Less than Significant
3.13-4	Special Events at the ATRC will generate vehicle trips and parked cars.	Potentially Significant	3.13-4a	When the Events Center is constructed, the on-site parking supply shall be calculated. If the proposed supply fails to satisfy projected demands on-site, then a parking management plan shall be created. The plan shall delineate the location of and access to the on-site and off-site parking supply that	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				will be made available when events are held at the Center. If appropriate, the plan shall link maximum ticket sales or the number of seats constructed to the number of parking spaces available near the Center. If necessary, the parking management plan shall incorporate other features to help reduce the demand for on site parking, including shuttle busses from satellite parking locations, and other measures necessary to ensure adequate parking for special events at the facility.	
		Potentially Significant	3.13-4b	An operational plan shall be developed for the Events Center which schedules travel to and from large events outside of peak commute hours. The plan shall identify the size and schedule of events that necessitate manual traffic controls at affected intersections, as well as maximum attendance for events ending during the p.m. peak hour.	Less than Significant
		Potentially Significant	3.13-4c	When the Events Center is constructed, improvements shall be made to the ATRC's Hegan Lane access intersections to provide left turn lanes on Hegan lane and to provide adequate throat depth on exiting lanes.	Less than Significant
3.13-5	Implementation of the Master Plan will increase the demand for CATS in the area of the Campus.	Potentially Significant	3.13-5	CSU shall continue to work with CATS to subsidize student transit ridership. Should the need for expanded service on the	Less than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				"Student Shuttle" routes be identified, CSU shall work with CATS to develop an equitable funding mechanism that will ensure that adequate transit services are available to serve the anticipated student population	
3.13-6	Cumulative development in the study area by the Year 2025 will generate traffic on the planned street system.	Significant & Unavoidable	3.13-6a	When plans for the 2nd Street parking structure proceed, CSU shall prepare a supplemental traffic study addressing site access and local circulation impacts. The study will address the need for signalization of adjoining intersections, including 2nd Street/Normal Street, and if traffic signals are found to be needed, CSU shall participate in the cost in proportion to the project's impact. The study shall also consider the issue of bicycle access along this portion of 2nd Street, and applicable traffic control measures shall be included in the design of the project.	Significant & Unavoidable
		Significant & Unavoidable	3.13-6b	Future traffic conditions at the 2nd Street / Cherry Street intersection shall be monitored by CSU and the City of Chico. When a traffic signal is found to be warranted, CSU shall contribute its fair share to the cost of this improvement.	Significant & Unavoidable
		Significant & Unavoidable	3.13-6c	CSU shall work with Caltrans and the City of Chico to identify feasible improvements to the Nord Avenue (SR 32)/West Sacramento	Significant & Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				Avenue intersection. If it is determined that a feasible improvement project is available, then CSU shall contribute its fair share to the cost of this project based on its traffic impact. However, as no feasible project has yet been identified, this impact is considered to be significant and unavoidable.	
		Significant & Unavoidable	3.13-6d	CSU shall contribute its fair share to the cost of widening the Midway/Park Avenue intersection to provide dual southbound left turn lanes and a separate northbound through lane. The CSU contribution shall be in proportion to the impacts of the Campus Master Plan 2004.	Significant & Unavoidable
		Significant & Unavoidable	3.13-6e	CSU shall contribute its fair share to the cost of widening the Midway / Hegan Lane intersection to accommodate dual eastbound left turn lanes. The CSU contribution shall be in proportion to the impacts of the Campus Master Plan 2004.	Significant & Unavoidable

CHAPTER ONE

INTRODUCTION

CHAPTER ONE
INTRODUCTION

1.1 PROPOSED ACTION

The proposed action consists of the adoption of the Chico Campus Master Plan 2004 by California State University, Chico. The project includes the main campus as well as recommended upgrades and improvements to the Agriculture Teaching and Research Center (ATRC) located approximately 2 miles from the main campus. Developments proposed in the Campus Master Plan 2004 are listed in Chapter Two (Table 2-2).

1.2 PROCEDURES

The University, in its role as Lead Agency, determined that a Program Environmental Impact Report (EIR) must be prepared for the proposed project in accordance with the California Environmental Quality Act (CEQA). A Notice of Preparation (NOP) was circulated from September 15, 2004 through October 15, 2004 for review and comment by responsible, trustee and local agencies. A scoping meeting was held on Wednesday, September 29, 2004 at Kendall Hall on the California State University Campus, Chico. The NOP and responses to the NOP are included as Appendix A of this EIR.

As defined by Section 15378 of the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines), a "project" is any action that "…has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment…" Section 15093 of the Guidelines requires the decision-makers to balance the benefits of a proposed project against any unavoidable environmental effects of the project. If the benefits of the project outweigh the unavoidable adverse environmental effects, the decision-makers may adopt a statement of overriding considerations, finding that the environmental effects are acceptable in light of the project's benefits to the public.

Under CEQA, the Lead Agency is usually the public agency with authority to approve or deny the project. In this case, the Trustees of California State University, Chico will act as Lead Agency with authority to certify the EIR. Under Section 15381 of the Guidelines, a "responsible agency" is a public agency other than the lead agency that has discretionary approval authority over the project, and will utilize the EIR prepared for the University. The lead agency is a State agency, which has the discretionary authority to amend its land use documents and regulations.

The CEQA process requires that the lead agency seriously consider input from other interested agencies, citizen groups, and individuals. CEQA provides for a public process requiring full public disclosure of the expected environmental consequences of the proposed action. The public must be given a meaningful opportunity to comment. CEQA also requires monitoring to ensure that mitigation measures are carried out.

CEQA requires a public review period, normally 45 days, for commenting on the Draft EIR. During the review period, any agency, group or individual may comment in writing on the Draft EIR, and the lead agency must respond to each comment on environmental issues in the Final EIR. According to Section 15202 of the CEQA Guidelines, CEQA does not require formal hearings at any stage of the environmental review process. However, it is typical to consider the EIR and its findings during public hearings required for the associated project.

1.3 METHODOLOGY

Pursuant to Section 15168 of the CEQA Guidelines, a Program Environmental Impact Report (EIR) is prepared for a series of related actions that can be characterized as one large project, such as a general plan or specific plan. In contrast, a project EIR, the most common type of EIR, examines the impacts that would result from a specific development proposal or other project.

Through the preparation of an Initial Study, the University has determined that a Program EIR should be prepared for the proposed project in accordance with CEQA and the CEQA Guidelines (Section 15063). This EIR analyzes and evaluates the potential effects of adopting a revised Campus Master Plan. Included in this environmental analysis are the direct impacts of the proposed projects in the Campus Master Plan 2004 and cumulative and growth-inducing effects on the local and regional environment. This EIR is intended to be a program EIR, as described in Section 1.2 above. Section 15168 of the CEQA Guidelines provides the following description of when a program EIR is appropriate:

> (a) General. A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:
>
> (1) Geographically,
>
> (2) As logical parts in the chain of contemplated actions,
>
> (3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or
>
> (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

Section 15168 also describes the use of a program EIR with later activities.

> (c) Use with Later Activities. Subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.

(1) If a later activity would have effects that were not examined in the program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration.

(2) If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.

(3) An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into subsequent actions in the program.

(4) Where the subsequent activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR.

(5) A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

(d) Use with Subsequent EIRs and Negative Declarations. A program EIR can be used to simplify the task of preparing environmental documents on later parts of the program. The program EIR can:

(1) Provide the basis in an initial study for determining whether the later activity may have any significant effects.

(2) Be incorporated by reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.

(3) Focus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before.

Based on the NOP process, the Board of Trustees has determined that this Program EIR should focus on the following specific aspects of the environment:

- **Aesthetics.** Aesthetic impacts of proposed new facilities are addressed, with an emphasis on the existing visual character and quality of the site and its surroundings. Impacts from light generated from the proposed facilities are also addressed.

- **Air Quality.** The development of the Campus Master Plan 2004 is anticipated to generate additional vehicle trips; therefore, the increase in regional emissions and construction impacts are evaluated in this EIR. Additionally, the potential for the improvements specified in the Campus Master Plan 2004 related to the Agriculture Teaching and Research Center to create objectionable odors are evaluated.

- **Biological Resources.** The biological impacts of the proposed Campus Master Plan 2004 are evaluated in this EIR, particularly any potential impacts related to Big Chico Creek.

- **Cultural Resources.** This section addresses the potential impacts on cultural resources. Since the California State University, Chico Campus is situated in an area that has witnessed thousands of years of human occupation, there are many potential cultural resources in the area. The Mechoopda Tribe is known to have lived on John Bidwell's Ranchero, now within the confines of the present day campus. For those areas of the campus that have not previously been investigated by archeologists, including the ATRC facility, a field reconnaissance of the proposed project area was conducted.

- **Geology and Soils.** This section evaluates effects associated with erosion, deposition, displacement, soil compaction, over-coverage of soils, alteration of topography, and geologic hazards as well as impacts to the existing septic system at the ATRC facility.

- **Hazards.** This section discusses potential hazards related to the improvements at the ATRC facility including a new pesticide seed and fertilizer building.

- **Hydrology/Water Quality/Drainage.** This section address issues associated with hydrology and water quality, including any changes to water quality of urban stormwater runoff that could potentially impact Big Chico Creek. Additionally, the expansion and improvements to the ATRC are evaluated for their potential for water quality impacts.

- **Land Use.** The Campus Master Plan 2004 is designed to accommodate an increase in student enrollment from the current physical capacity of 14,000 full time equivalent students (FTES) to 15,800 FTES which equals an academic year capacity of 17,900 FTES, an increase of 2,900 over the current capacity. This equals a head count of 20,000 individual students. Also to be included are 1,500 to 2,000 faculty and staff. This increase could result in land use impacts. In addition, the Campus Master Plan 2004 proposes a number of improvements and new facilities at the ATRC facility including a conference center and an events center. These impacts are evaluated in this DEIR.

- **Noise.** The EIR includes a noise analysis of existing noise levels, existing traffic noise levels, future traffic noise levels due to and upon the project, and an analysis of on-site noise sources. Potential on-site activity noise analyzed in this DEIR includes construction noise, parking lot noise, the Wildcat Activity Center, two new parking structures and the ATRC Events Center.

- **Population and Housing.** This section of the EIR discusses potential impacts on population growth and composition, growth within the campus community, and the need for on-campus housing.

- **Public Services and Utilities.** This section of the EIR evaluates potential impacts related to the availability and capacity of public services and facilities to support the growth envisioned in the Campus Master Plan 2004. This section includes discussion of police and fire protection, solid waste disposal, sewer and water service, and energy/utilities.

- **Parks and Recreation.** The Campus Master Plan 2004 proposes to construct new recreational facilities at some point in the future. This section of the EIR addresses the potential adverse environmental impacts on parks and recreational facilities resulting from the adoption of the Campus Master Plan 2004.

- **Transportation and Circulation.** This section of the EIR addresses the general circulation and transportation impacts of the proposed project. In addition to addressing the impacts of the proposed Plan at key intersections in the vicinity of the campus, this analysis evaluates issues relating to bicycle, pedestrian, and transit activity. The EIR includes an analysis of the impact of the closure of three street segments as well as the impacts of the proposed upgrades and modifications to the ATRC.

1.4 ORGANIZATION OF THE EIR

Chapter One (current chapter) provides an introduction to the EIR, including a basic description of the CEQA process and general information about the project under consideration. Chapter Two of the EIR describes the project in greater detail and summarizes the general characteristics of the project location. Chapter Three describes specific characteristics of the project's environmental setting, identifies and discusses potentially significant project-related impacts for the topics addressed in the EIR, and sets forth mitigation measures for those impacts, as appropriate. The evaluation of impacts has been organized in the following manner:

SETTING

The Setting provides a description of the environment that may be affected by the project. This topic also includes a discussion of the regulatory environment that is applicable to the project.

IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

The standard or threshold by which impacts are measured is identified, with the objective of determining if an impact will be significant.

Impact #: Each impact is described and listed by number for future reference. This is followed by a discussion of the impact; a statement whether the impact is significant or less than significant; if found to be significant, a determination whether or not the impact can be avoided or reduced to an acceptable level through implementation of mitigation measures, or if the impact is unmitigable, unavoidable and/or irreversible.

Mitigation Measure #: Each mitigation measure is described and listed by number for future reference. The numbering of the mitigation measure is the same as the impact to which it applies. The discussion includes a statement whether or not the recommended measure will reduce the impact below the level of significance, based on the impact evaluation criteria.

Chapter Four describes and evaluates alternatives to the proposed project. The proposed project is compared to each alternative, and the environmental ramifications of each are analyzed. Chapter Five addresses mandatory CEQA sections, including effects not found to be significant, unavoidable significant impacts and irreversible impacts. Following the text of this EIR, appendices have been included to facilitate full environmental review of the proposed project.

1.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

CEQA Guidelines require that each EIR provide a list of issues which are likely to raise controversy and are of particular interest to the public. The following issues are most likely to produce controversy in reviewing and considering the proposed project:

- Traffic associated with the proposed project and impacts on area roadways.
- The adequacy of parking to accommodate the additional enrollment.
- The potential to disturb cultural resources.
- The construction of an events center at the ATRC.
- The impact of light from the proposed parking facilities as well as the visual quality of the views of the proposed parking structure from surrounding areas.
- Campus and community housing needs.
- Increased surface runoff to Big Chico Creek.

1.6 USES OF THE EIR

If the Board of Trustees approve the proposed project, subsequent actions, permits, and approvals are necessary. Section 15124(a)(1) of the State CEQA Guidelines requires that an EIR include, to the extent that the information is known to the lead agency, a list of the agencies that are expected to use the EIR in their decision-making, and a list of permits and other approvals required to implement the project. It also requires that the EIR include a list of related environmental review and consultation requirements required by federal, State, or local laws, regulations, or policies. Since the lead agency for this project is the Board of Trustees for the California State University, Chico, the subsequent permitting requirements are different than that for a private development project. Permits and approvals necessary to implement the Campus Master Plan 2004 are listed in Table 1-1 below.

Table I-I
Subsequent Permits and Approvals

Agency	Approvals
Board of Trustees	• Use Permit(s) • Environmental Documents Associated with these approvals
City of Chico	• Road abandonment, Sewer & Water hookups, any actions encroaching on Bidwell Park property along Big Chico Creek.
Regional Water Quality Control Board	• Waste Discharge Requirements • NPDES General Construction Stormwater Permit(s) • Stormwater Pollution Prevention Plan • Federal Clean Water Act, Section 401 Clean Water Certification
California Department of Fish and Game	• Section 1603 Streambed Alteration Agreement(s)
U.S. Army Corps of Engineers	• Section 404 Permit
California Department of Transportation	• Encroachment Permit
Butte County Air Pollution Control Board	• Air Quality Permit

Note: Not all permits/approvals listed above may ultimately be required for the proposed project.

CHAPTER TWO

PROJECT DESCRIPTION

CHAPTER TWO
PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND EXISTING SITE CONDITIONS

2.1.1 LOCATION

California State University, Chico (CSU Chico) is located in the City of Chico, California, in Butte County in the northern Sacramento Valley (see Figure 2-1). The main campus presently encompasses 119 acres, in an area roughly bounded by the Union Pacific Railroad right-of-way on the west; by West Sacramento, Legion, and Mansion Avenues on the north; by the Esplanade, Children's Park, Salem, and Normal Streets on the east; and by West Second and West Third Streets on the south (see Figure 2-2). The Campus Master Plan 2004 also proposes upgrades and expansion of the Agricultural Teaching and Research Center, an 800-acre site located approximately 2 miles from the main campus (see Figure 2-3). Approximately 95 acres are considered the core area of the ATRC and contain several working animal and plant crop farm units, administrative and teaching areas, public gathering, maintenance, storage, and agricultural by-product facilities. The campus is situated in Township 22 North, Range 1 East, Mount Diablo Base and Meridian.

2.1.2 SITE CHARACTERISTICS AND EXISTING CONDITIONS

Main Campus

The CSU Chico campus lies within the City of Chico, located in the northern portion of California's Central Valley, six miles east of the Sacramento River. The main campus is located north and west of the City of Chico's downtown. Surrounding land uses include several residential neighborhoods and Chico High School to the north, mixed residential and railroad industrial area to the south and southwest, downtown Chico to the southeast and the Historic District of Chico to the south (see Figure 2-4). The general topography of the area including and surrounding the campus is relatively flat on both sides of Big Chico Creek, which bisects the campus, with a predominantly southwesterly slope. Big Chico Creek also serves as the backbone of Bidwell Park, a large natural and recreational area that stretches for eleven miles along the creek immediately east of the campus. The elevation of the City of Chico is approximately 195 feet above mean sea level. Figure 2-5 depicts an aerial view of the main campus.

One of the principal forces behind the Campus Master Plan 2004 is the need to accommodate current and anticipated growth. By Fall 2000, CSU Chico had reached its growth capacity of 14,000 FTES, which represented an academic year count of 14,908 FTE students, and physical enrollment (Lecture and Lab space only) was expected to increase based upon the predicted statewide rise in the number of college-age students seeking to enter the California State University system. After considerable University discussion, and in conjunction with the California State University Chancellor's office, campus leadership proposed that CSU Chico accommodate a small portion of the state-wide enrollment demand by increasing its growth capacity to 15,800 FTES physical capacity (approximately 17,900 academic year (AY) FTES, or 20,000 individual students). The 20,000 individual students includes the actual number of students attending classes including part time, interns, and distance education.

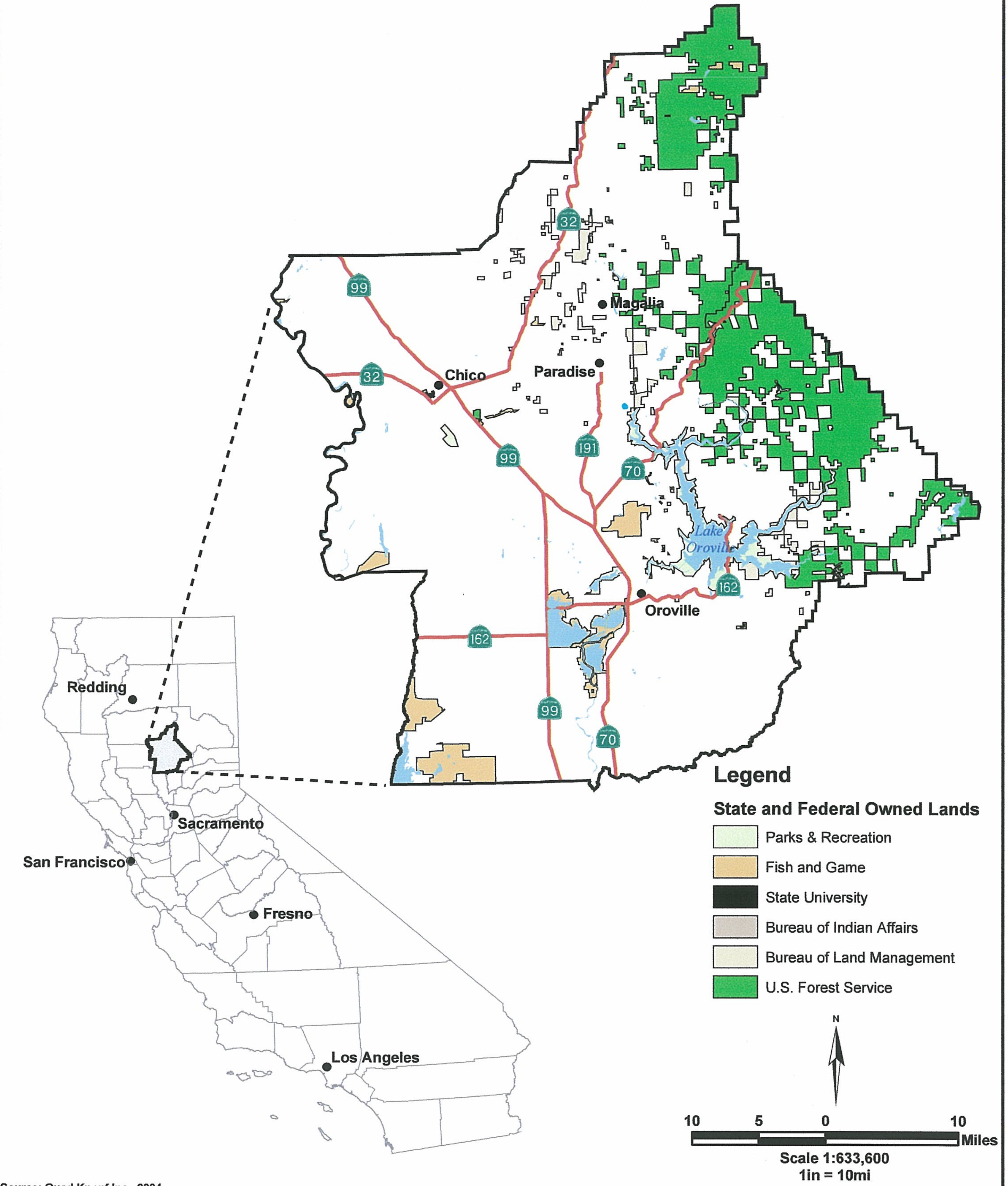
In addition to the growth pressures placed upon the University that will necessitate the construction of new classrooms and laboratories, there is a need to replace several aging campus buildings, a need to update other facilities, and a need to accommodate several expanded academic programs. The Campus Master Plan 2004 addresses these basic needs as well as various specific facility needs including: the need to expand CSU Chico-sponsored student housing and the need for additional parking and outdoor recreation space. These new academic facilities, expanded student housing, outdoor recreation fields, recreation center, and additional parking will, in some form, require intensification of uses on-site and/or acquisition of additional property.

The Campus Master Plan 2004 also addresses a number of other issues related to the campus functional and visual environment. The campus is noted for its elegant architecture, mature landscaping, human scale and pedestrian orientation, thus a major goal of the Plan is to maintain and enhance those qualities of the campus. The Campus Master Plan 2004 addresses campus architecture, landscaping, open space, signage, lighting, bicycle storage and campus benches and trash receptacles. Further, just as the Plan identifies the location and describes the essential characteristics of the new and updated buildings for the campus, it also discusses updates and expansions to essential campus infrastructure that supports those buildings.

Agricultural Teaching and Research Center

The ATRC is an 800-acre farm facility located two miles south of the main campus and is surrounded by agricultural land (see Figure 2-6). The ATRC serves as the primary location for practical teaching and research activities of the CSU Chico College of Agriculture. Its facilities also serve a range of additional functions, including hosting agricultural events of interest to the larger Northern California agricultural community, serving as an educational site to K-12 schools desiring to expose students to the fields of agriculture and serving as a site for various third party research, testing, and staging activities. Established in 1960, the ATRC consists of extensive acreage devoted to field, tree crops and pasture and a core working “farm” area with a comprehensive array of plant and animal facilities, including those dedicated to support, farm equipment maintenance, storage, processing, propagation, teaching, training and research activities.

The 95-acre core area of the 800-acre ATRC site is composed of several working animal and plant crop farm units, administrative and teaching areas, public gathering, maintenance, storage, and agricultural by-product facilities. The principle animal units include those for swine, beef, dairy, and sheep. Plant science facilities include a horticultural area, a crop laboratory, various silage processing facilities and grain processing and grain storage facilities. Several parking areas serve specific functional areas and the largest parking area is centrally located adjacent to the pavilion facility that hosts agricultural events. Many of the primary facilities are inadequate for housing and performing the teaching related functions needed to effectively operate the CSU



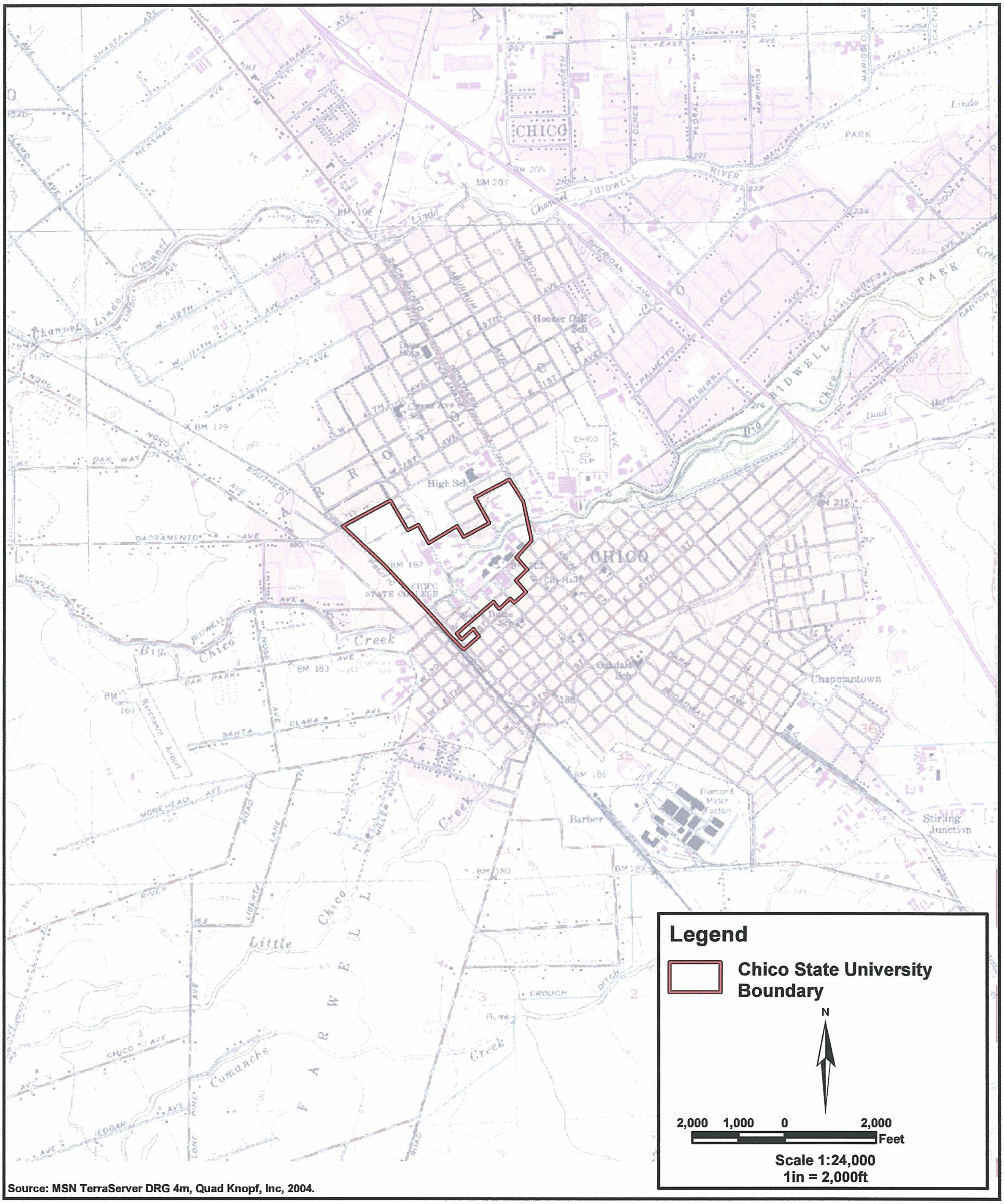
Source: Quad Knopf Inc., 2004.

Quad Knopf

VICINITY MAP

Figure 2-1

Job No.: 03496



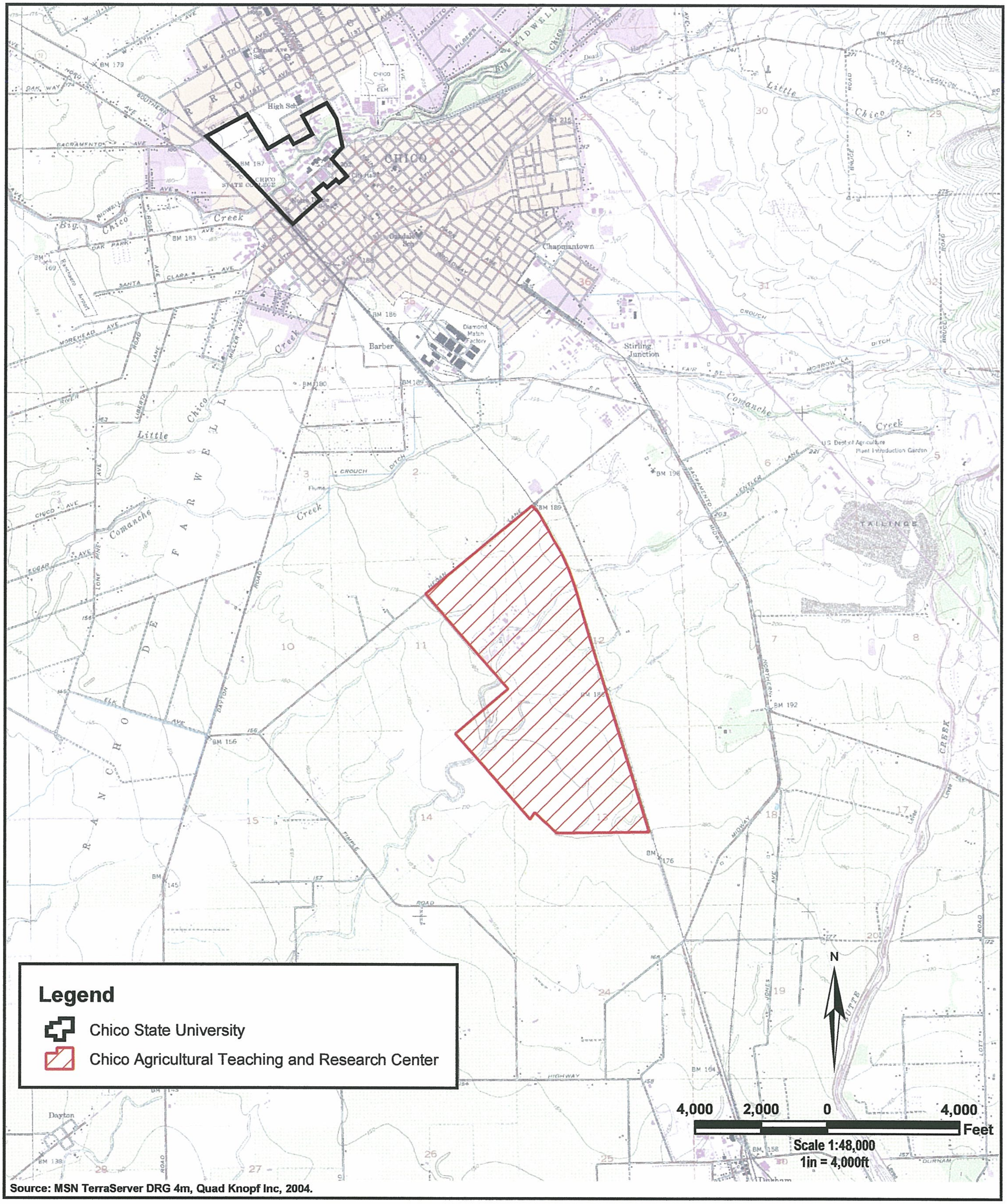
Source: MSN TerraServer DRG 4m, Quad Knopf, Inc, 2004.

Quad Knopf

LOCATION MAP

Figure 2-2

Job No.: 03496



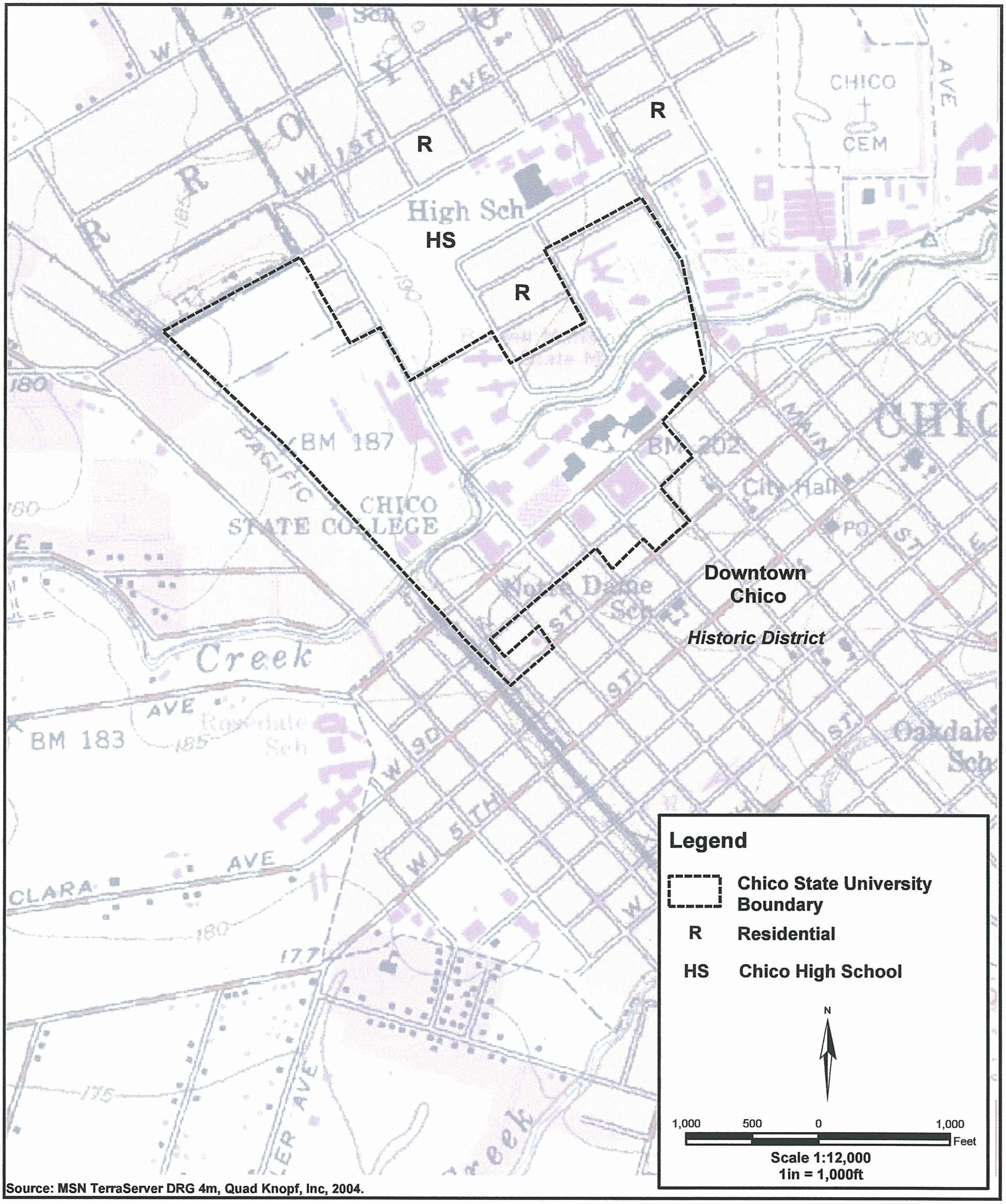
Source: MSN TerraServer DRG 4m, Quad Knopf Inc, 2004.

Quad Knopf

ATRC LOCATION

Figure 2-3

Job No.: 03496



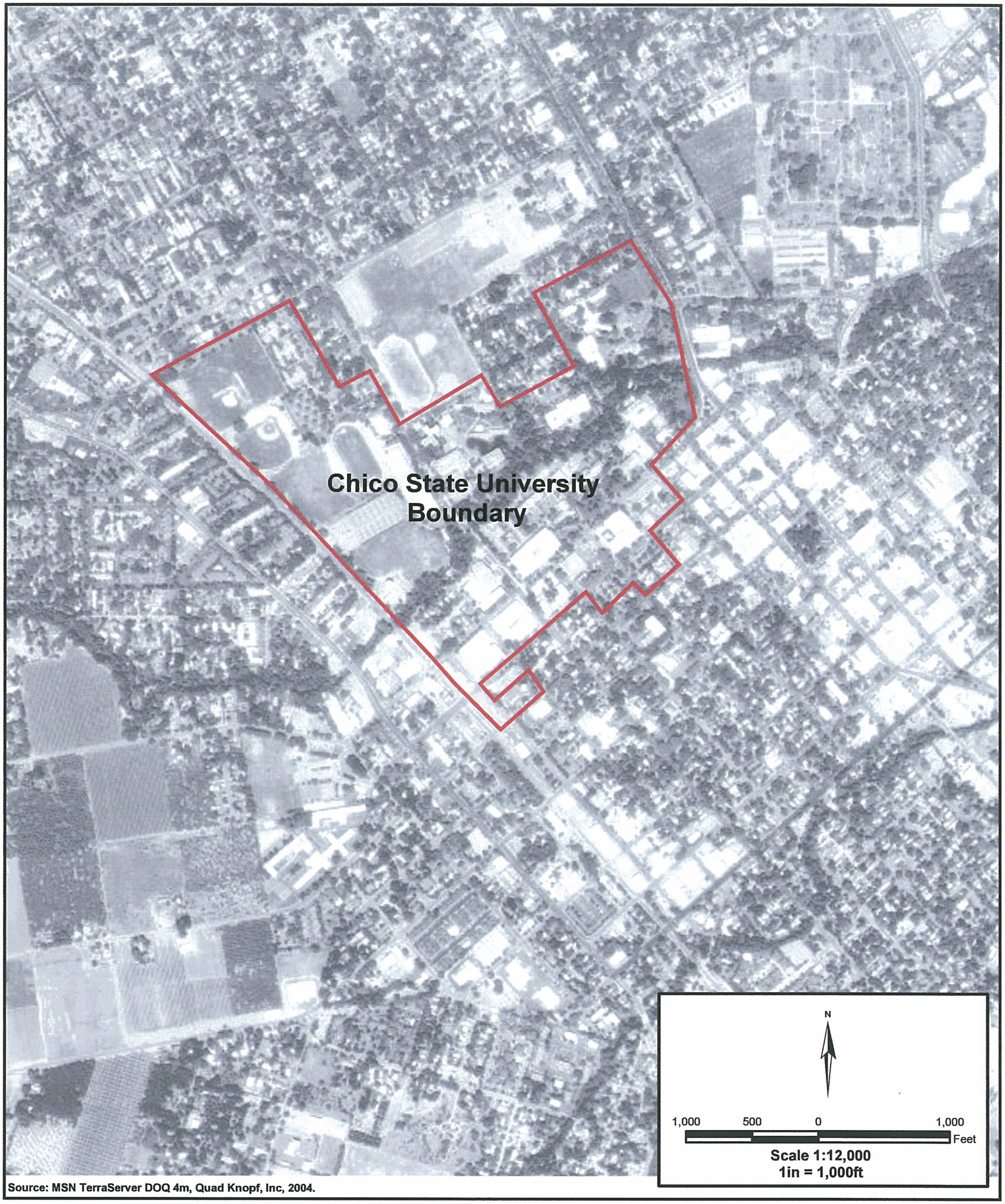
Source: MSN TerraServer DRG 4m, Quad Knopf, Inc, 2004.

Quad Knopf

SURROUNDING LAND USE

Figure 2-4

Job No.: 03496



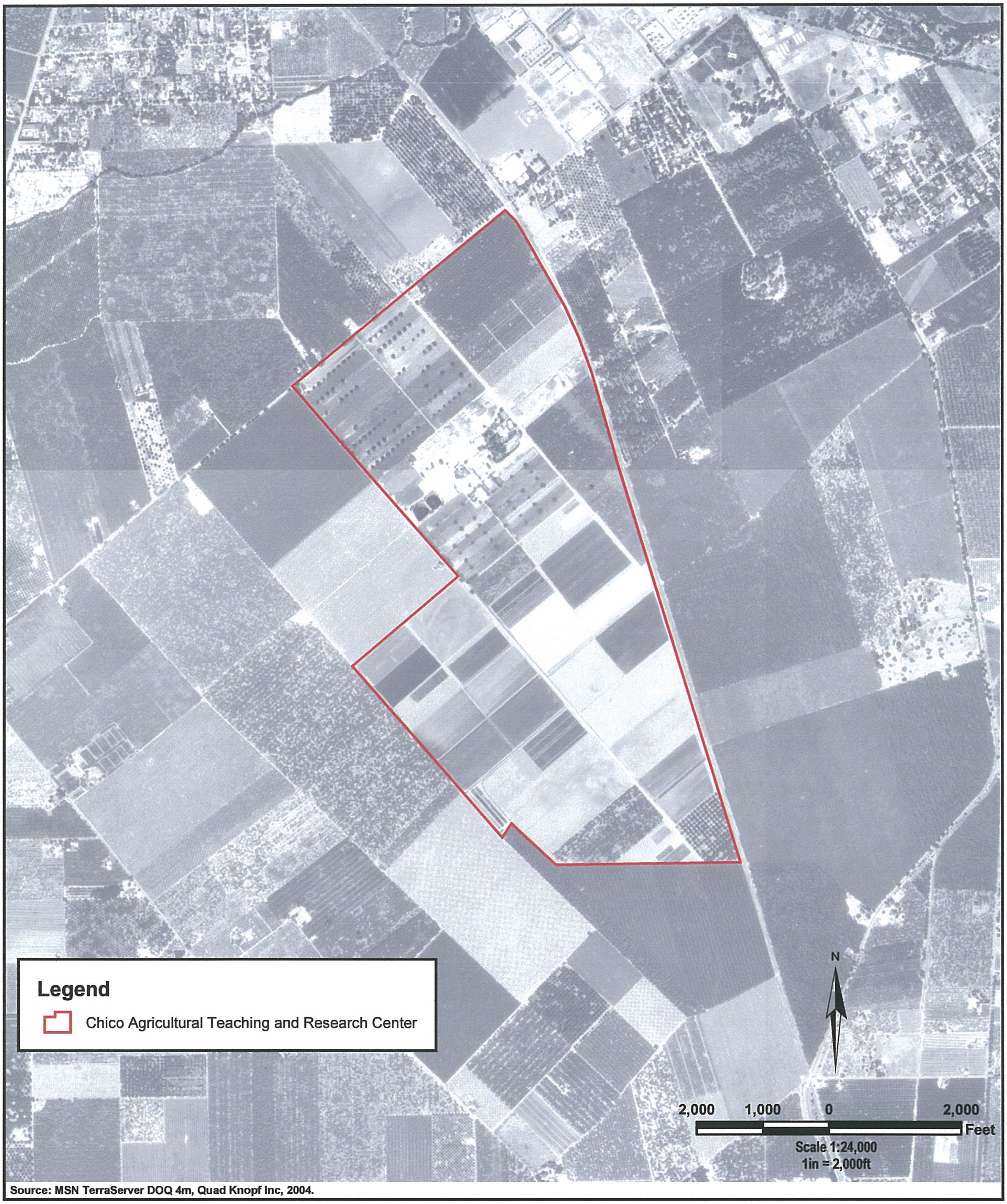
Source: MSN TerraServer DOQ 4m, Quad Knopf, Inc, 2004.

Quad Knopf

AERIAL PHOTO

Figure 2-5

Job No.: 03496



Source: MSN TerraServer DOQ 4m, Quad Knopf Inc, 2004.

Quad Knopf

AERIAL PHOTO OF ATRC

Figure 2-6

Job No.: 03496

Chico College of Agriculture's core academic program. In some cases, the existing facility is in need of major repair and renovation to restore its functionality and/or safety. In other cases, there is a lack of the type of modern instructional facility needed to integrate into the curriculum the training in contemporary and emerging agricultural technologies, particularly in the areas of animal and plant genetics, agricultural commodity and feed storage, pesticide, and waste management.

2.2 PROJECT DESCRIPTION

The proposed project is the adoption and implementation of an updated Campus Master Plan 2004 (see Figures 2-7 and 2-8). The existing Campus Master Plan was developed in 1990 and adopted in 1991. The proposed Campus Master Plan 2004 provides for a campus building plan that includes the construction of five new major academic buildings, two recreational facilities, a natural history museum, a child care center, approximately 1,300 bed-spaces of student housing, two parking structures, and improvements to the Agricultural Teaching and Research Center (ATRC) located approximately 2 miles from the main campus (see Figure 2-9). The Plan also calls for the demolition of several outdated and obsolete buildings. Other large building and infrastructure renovation projects are also identified. Implementation of various projects will require acquisition of additional properties adjacent to the campus. The Campus Master Plan 2004 also identifies improvements to the existing landscape and hardscape to address current visual and functional weaknesses. The Campus Master Plan 2004 also includes Design Guidelines that set forth a context for ensuring that the design of new buildings contributes to a consistent architectural vocabulary for the campus. The Campus Master Plan 2004 is designed to accommodate a student enrollment of 17,900 FTES (academic year full time equivalent students), an increase of 2,900 FTES.

The proposed project will meet several University strategic plan goals through accommodating the array of educational, support and cultural facilities maintained by and for the University, and supports the primary educational mission of California State University, Chico. In particular, the Campus Master Plan 2004 supports the five major goals of the CSU Chico Strategic Plan for the future:

1. Develop high-quality learning environments in and outside the classroom;

2. Invest in faculty and staff development;

3. Wise use of new technologies in learning and teaching environments;

4. Serve the educational, cultural and economic needs of Northern California;

5. Accountable to the people of the State of California, diversify revenue resources and manage the resources entrusted to the University.

One of the principal forces behind the Campus Master Plan 2004 is the need to accommodate current and anticipated growth. By Fall 2000, CSU Chico had reached its growth capacity of

14,000 FTES (full time equivalent students) physical capacity, which represented an academic year count of 15,000, and enrollment was expected to increase based upon the predicted state-wide rise in the number of college-age students seeking to enter the California State University system. After considerable University discussion, and in conjunction with the California State University Chancellor's office, campus leadership proposed that CSU Chico accommodate a small portion of the state-wide enrollment demand by increasing its growth capacity to 15,800 FTES physical capacity or approximately a total of 17,900 academic year (AY) FTES and 20,000 individual students (see Table 2-1).

Table 2-1
Enrollment Change Associated with Campus Master Plan 2004

	PC FTES	AY FTES	Individual Students
Current Master Plan	14,000	15,000	N/A
Proposed Master	15,800	17,900	20,000

Notes:
1. PC FTES is the physical capacity of the campus as defined by system and state formula guidelines. It is expressed in FTES (Full Time Equivalent Students).
2. AY FTES is the average of fall and spring enrollment and is expressed in FTES (Full Time Equivalent Students).
3. Individual Students represents the actual number of individual students attending classes including part-time, interns, and distance education.

In addition to the growth pressures placed upon the University that will necessitate the construction of new classrooms and laboratories, there is a need to replace several aging campus buildings, a need to update other facilities, and a need to accommodate several expanded academic programs. The Campus Master Plan 2004 addresses these basic needs as well as various specific facility needs including: the need to expand CSU Chico-sponsored student housing and the need for additional parking and outdoor recreation space. These new academic facilities, expanded student housing, outdoor recreation fields, recreation center, and additional parking will, in some form, require intensification of uses on-site and/or acquisition of additional property.

The Campus Master Plan 2004 also addresses a number of other issues related to the campus functional and visual environment. The campus is noted for its elegant architecture, mature landscaping, human scale and pedestrian orientation, thus a major goal of the Plan is to maintain and enhance those qualities of the campus. The Campus Master Plan 2004 addresses campus architecture, landscaping, open space, signage, lighting, bicycle storage and campus benches and trash receptacles. Further, just as the Plan identifies the location and describes the essential characteristics of the new and updated buildings for the campus, it also discusses updates and expansions to essential campus infrastructure that supports those buildings.

Accommodating campus growth in the context of achieving a balance between any enrollment increases and the quality of life at CSU Chico is an important cornerstone goal of the Campus Master Plan 2004. Specific goals for the Campus Master Plan 2004 include:

- Use open space as an organizational element;

New State Supported Academic Facilities
1. Student Services Center
2. Taylor II Academic
3. Modoc II Academic
4. Siskiyou II Academic
5. Rio Chico Academic
6. Physical Education Pool

State Supported Renovations/ Modifications
7. Butte Hall
8. Colusa Hall

New Non-State Supported Facilities
9. Wildcat Activity Center
10. Aquatic Center
11. Student Housing Project
12. AS Child Care Center
13. Northern California Natural History Museum
14. Stadium Area Parking Structure
15. Second Street Parking Structure

Source: AC Martin and Partners/ Quad Knopf Inc., 2004.

Quad Knopf

PRIMARY MASTER PLAN
2004 PROJECTS

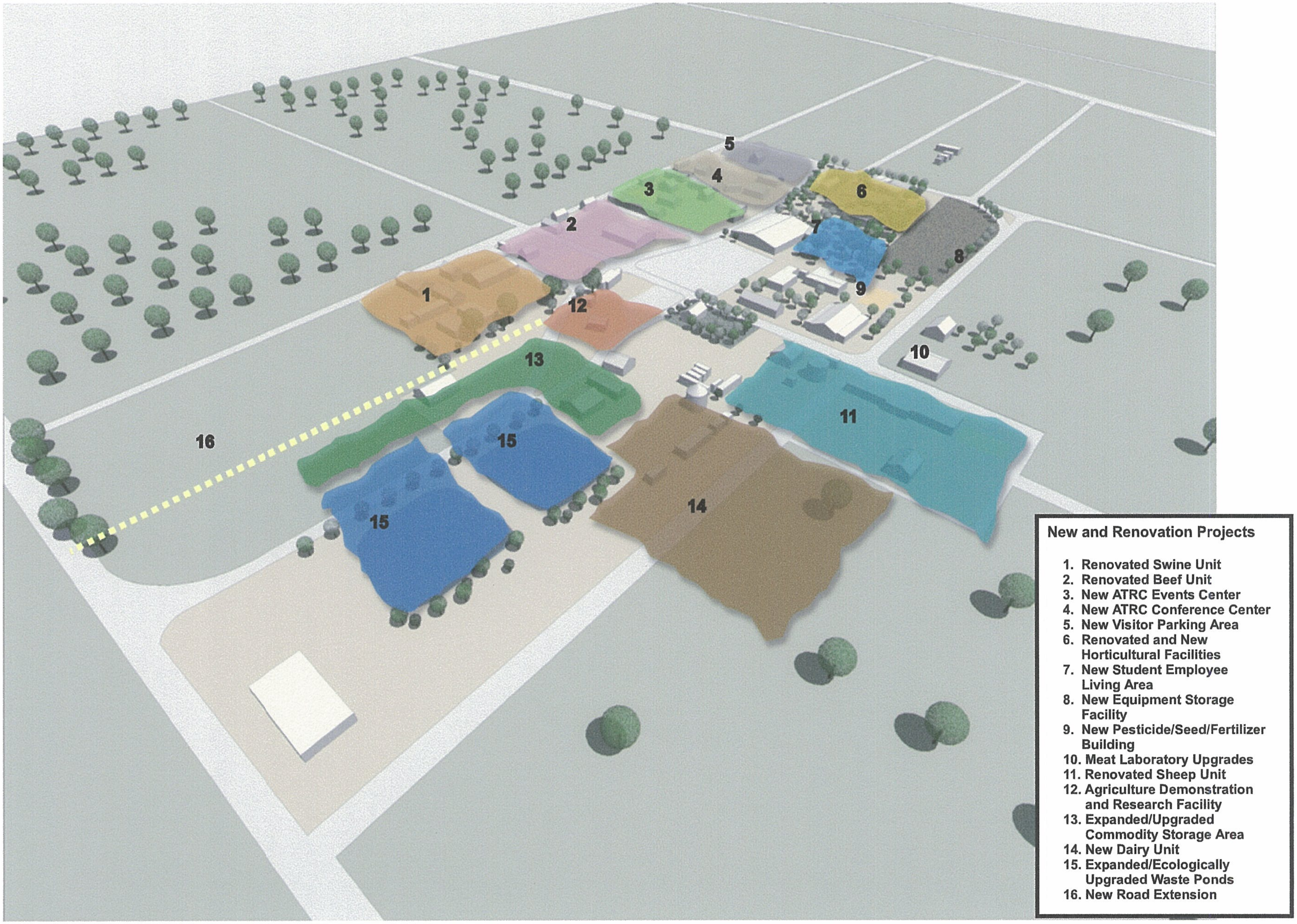
Figure 2-7

Source: AC Martin and Partners/ Quad Knopf Inc., 2004.

Quad Knopf

CHICO STATE UNIVERSITY
MASTER PLAN 2004

Figure 2-8



Source: AC Martin and Partners/ Quad Knopf, Inc. 2004.

ATRC MASTER PLAN
OF FACILITIES

Figure 2-9

- Promote a strong expression of landscape including a range of sizes and appropriate species of trees;

- Promote a walkable campus that provides a logical progression of spaces linking destinations;

- Preserve the natural characteristics of Big Chico Creek while permitting visual enjoyment of them as viewed from the campus;

- Emphasize a scale of facilities that is compatible with human activities and perceptions;

- Promote facilities that are part of a recognizable "family" of related structures, hardscape and other environmental elements identified with CSU Chico;

- Discourage the presence of the automobile and other motorized vehicles while encouraging pedestrian and bicycle modes of movement; and

- Promote built systems that respect, maintain and work with the natural environment.

With the anticipated increase in campus physical capacity growing from approximately 15,000 (AY) FTES to 17,900 (AY) FTES, an additional 134,850 ASF (Assignable Square Feet) of instructional space (2,900 x 46.5 ASF/FTES) will be needed to serve its students. The total additional facility need for the campus would be an average of 115 GSF per FTES or a need of 333,500 gross square feet. Most of this new net instructional space would be needed for classrooms (lecture), laboratories and offices. This will be accomplished through removal of substandard facilities and minor reassignments of existing space categories. The Campus Master Plan 2004 proposes the development of four new State-supported facilities, one major renovation project and two future land acquisition projects. The acquisition projects are identified as future "reserve sites" for a future academic facility (Rio Chico area) and for additional campus student housing and parking (College Park area). Table 2-2 lists the proposed Campus Master Plan 2004 projects.

Table 2-2
Proposed Campus Master Plan 2004 Projects

Project	Description
Butte Hall - Rehabilitation	48,538 ASF (88,874 GSF)
Taylor II – Demolition/Replacement	76,000 ASF (116,900 GSF)
Student Services Center (In process)	79,960 ASF (122,422 GSF)
Modoc II –Demolition/Replacement	37,980 ASF (58,400 GSF)
Siskiyou II - Demolition/Replacement	38,200 ASF (58,800 GSF)
Rio Chico Physical Education/Aquatic Center - Acquisition	46,200 ASF (71,000 GSF)
Outdoor Physical Education Facilities	5 acres

Project	**Description**
Whitney Hall - Demolition/Replacement College Park – Acquisition	1,298 new bed spaces
Whitney Hall – Food Service	23,000 GSF (6,500 meals/day, 2,200 meal plans)
Outdoor Recreation	38 acres
Wildcat Activity Center	124,658 – 133,400 square feet
Indoor Child Care Facilities	137,600 ASF (172,000 GSF)
Outdoor Child Care Areas	177,200 square feet
Automobile Parking	1,430 additional parking spaces
Bikeways & Bike Parking	Relocate and add new bike parking facilities
Northern California Natural History Museum	11,000 square feet
Utility Infrastructure	Upgrades & Expansion
Agriculture Teaching & Research Center	Renovated swine, beef & sheep units Demonstration & research facility (10,400 GSF) ATRC events center (45,000 GSF) Expanded commodity storage area (75,000 GSF) Expanded, ecologically updated waste ponds New dairy unit ATRC conference center (7,000 GSF) Renovated and new horticulture facilities New student housing New equipment storage facility (15,000 GSF) New pesticide seed fertilizer building (5,875 GSF) Meat laboratory upgrades

Butte Hall. Butte Hall, built in 1972, is in need of extensive modifications related to asbestos removal and mitigation, HVAC renovation, and electrical systems. Since the extensive nature of this rehabilitation project will affect all seven floors and multiple building systems, temporary academic space will be needed during the construction period to house the displaced academic programs. The proposed rehabilitation project will affect 48,538 assignable square feet (ASF) (88,874 GSF).

Taylor Hall Replacement (Taylor II). This project was originally planned as a renovation; however, the current Taylor Hall (constructed in 1965) exhibits numerous building system deficiencies, including those related to electrical, mechanical, ADA accessibility and fire life safety. Taylor Hall is occupied by the College of Humanities and Fine Arts that, as the largest program on campus, is programmed for continued growth and has many special needs that its current program space does not provide. Many offices and classrooms related to these programs are currently situated in temporary modular buildings. To address these inadequacies it is proposed to replace the obsolete Taylor Hall with a new three- and four-floor 76,000 ASF (116,900 GSF) building forming a courtyard, fore court and entry court spaces around the perimeter. The new Taylor Hall will provide additional faculty office, lecture/instructional laboratory and instructional activity space that will include dance and music practice, recording studio, and recital hall space. Taylor Hall may also include an art gallery for University use.

Student Services Center. A new four-floor Student Services Center (79,960 ASF/122,422 GSF) is currently in design that would consolidate the student services functions on the one block site immediately south of the Meriam Library and west of the Bell Memorial Union. A Mitigated Negative Declaration (State Clearinghouse #2003102041) was adopted for the Student Services Center in November 2003. The building layout will feature a courtyard oriented towards the Meriam Library/First Street Mall, as well as an entry court where the structure forms a natural south entry to the University along Ivy Street.

Modoc II. This facility will replace the existing Aymer Jay Hamilton facility (AJH) that was originally completed in 1950 as a public school structure. The AJH facility is located in the northeastern end of the campus, and is a relatively small, inefficiently configured one-story building in poor condition. The building was planned for demolition in the 1990 Master Plan. The Campus Master Plan 2004 calls for removal of the structure to create a site for a two- to three-floor modern classroom laboratory facility (37,980 ASF/58,400 GSF). The site created by the removal of the AJH facility would also create additional space for the first phase of a childcare center (118 children capacity) potentially constructed in association with the adjacent existing Modoc Hall. The site, when coupled with adjacent open space and parking lot facilities, would also provide space for a proposed Natural History Museum.

Siskiyou II. The existing Siskiyou Hall was built in 1957 as an industrial arts instruction facility. The 1990 Master Plan showed this building as a temporary facility to be removed. The building is nondescript and does not efficiently utilize the site, and is also more expensive to maintain per square foot than a modern, efficient multi-story building. The Siskiyou II replacement facility is a four-floor classroom/laboratory building with a ground floor campus police facility (38,200 ASF/58,800 GSF). A minimum of 12 parking places screened from public view would also be placed at the north end of the building tied into the service road.

Rio Chico Physical Education and Aquatic Center Facility. This site is currently occupied by a small residential neighborhood known as Rio Chico and is surrounded by land owned by the University. It has been considered a prime site for acquisition to provide needed land for University programs. The Rio Chico neighborhood contains several single-family residences of historic value. Historic structures are proposed to be relocated to nearby residential neighborhoods as part of any acquisition and development concept for the site. The site lies adjacent to the planned Wildcat Activity Center and is connected by pedestrian bridge directly to the campus physical educational fields and facilities. There has been considerable interest from the Chico Unified School District and the greater Chico community in a swimming pool that could serve both the instructional and recreational needs of these groups. In addition to the pool itself, the pool facility would need to have bathrooms, showers, locker rooms and other related facilities. The CSU Chico owned surface parking lot to the west of the site would also be part of this development that would consist of 46,200 ASF/71,100 GSF, in the following configuration:

- A physical education facility that would accommodate additional basketball, multipurpose and specialized indoor courts, aerobics, dance and fitness rooms as well as showers, small classroom and office spaces.

- A recreationally oriented aquatic center with pool and outdoor areas suitable for gatherings. The aquatic center would include a 25-50 meter pool (5-7 lanes) and associated facilities totaling approximately 15,000 square feet.

- Open space plaza at the southeast corner of First Street and Cherry Street.

Outdoor Physical Educational Facilities. The recently constructed Yolo Hall Physical Education II project used a portion of the existing outdoor instructional physical education space. The outdoor physical education space needed for playfields and other facilities has fallen below the State standard allotment of 34 acres for a CSU campus of an enrollment of 15,000. Additional outdoor field space will be lost with the future expansion of the Central Plant facility that lies at the south end of the field area. The Campus Master Plan 2004 proposes acquisition of approximately five acres in proximity to the existing physical education facility. The most appropriate sites lie west of the railroad tracks along Highway 32, but no specific site has been selected at this time. A CSU Chico administration and faculty task force has projected that facilities totaling 38 acres consisting of additional athletic and recreational-related open space are needed beyond the standard State allotment discussed above. The Campus Master Plan 2004 does not specify where these facilities would be located; however, some of the land may be purchased in the Highway 32 corridor or other nearby locations.

Non-State Supported Facilities

The California State University system does not provide direct funding support for various University facilities that are primarily for non-academic or community use. Important University facilities in this category include University-sponsored student housing, student recreational facilities, childcare, and parking facilities. These are of growing importance to CSU Chico since the University is both a residential campus and one that seeks to provide the types of facilities that attract students from outside its core service area.

Housing. The Campus Master Plan 2004 proposes a significant expansion of University-sponsored housing, due to the existing levels of unmet demands coupled with the inadequacy of the Whitney Hall dormitory that has a capacity of 496 students and the only kitchen and dining facilities for all on-campus students. Currently, approximately 1,731 students are accommodated in University-sponsored residence halls and apartments. A suite-cluster design is proposed in order to create small-scale residential communities on the sites identified for expanded University-sponsored student housing. The housing would include common space (lounge, kitchen, toilet facilities) shared by groups of 20 students in single and double sleeping rooms.

The Campus Master Plan 2004 has identified the re-use of the Whitney Hall site either by renovation of Whitney Hall, or replacement of it with a new housing facility, and further development of the College Park site, adjacent to Esken, Meechoopda and Konkow Halls as the most appropriate way to accommodate additional housing. The University proposes to remove the residence hall recreation center and use the site to replace the Whitney Hall kitchen facility and construct additional housing as part of the new dining hall structure.

The College Park development will require the University to acquire additional existing residential properties in the neighborhood totaling approximately 8 acres. Parking capacity for residential needs is included in the development vision for the College Park site. The Campus Master Plan 2004 recommendations provide for up to 1,298 new bed-spaces on the two sites, which would bring the campus total to 3,029 rentable bed-spaces. The Plan would be developed in four phases, and each phase incorporates both housing and adjacent open space for informal recreation activities.

Housing buildings are four stories high to maximize the capacity of the sites and to make the best use of existing and newly acquired properties on a campus where land is scarce. Buildings are limited to four stories to provide housing built to a human scale and for effective program management.

Food Service. The Campus Master Plan 2004 recommends a new 23,000 GSF food service facility on the ground floor of the first new 4-story residential building recommended for the Residence Hall site, to be constructed in Phase 1 of the Housing Master Plan. The facility is sized and equipped to prepare and serve up to 6,500 meals per day to a maximum of 2,200 meal plan participants and cash customers.

Outdoor Recreation. Chico's outdoor athletic/physical education facilities are essentially dedicated to instructional purposes and are not generally available to students and faculty for recreational use. This lack of dedicated recreation-oriented facility space at CSU Chico represents a weak link in the provision of quality of life at the campus. The needed facilities include various outdoor intramural (now referred to as "recreational sports") fields, indoor intramural courts and indoor recreational courts, fitness facilities and a recreational pool. Table 2-3 lists the facilities, totaling over 38 acres, needed to address CSU Chico's recreational needs.

Table 2-3
Outdoor Recreational Needs/Preliminary Program

Facility	Acres
Intramural Fields (15 fields) and Jogging Path	20.3 acres
Pavilion/Locker Rooms/Administrative Offices/Restrooms	0.4 acres
Sports Fields (6 fields) and Outdoor Skating	8.7 acres
Open Recreation (new and expanded needs)	9.3 acres
TOTAL	**38.7 acres**

Source: Campus Master Plan 2004.

Wildcat Activity Center. The current student recreation center concept is envisioned as a two-level 124,568 to 133,400 square foot indoor recreation center to be placed on a University-owned site, bordered by First Street, Cherry Street, Second Street and the railroad right-of-way on the north, east, south and west, respectively. This location is close to the existing CSU Chico parking structure and to the Rio Chico site, programmed for future acquisition for development of physical education facilities and a recreational Aquatic Center. The funding for this building will come from student fee assessments. It will displace the current warehouse buildings that house the shipping and receiving operation, the mailroom, and storage. New facilities will need to be provided to house these functions when the current buildings are removed.

Child Care. The current childcare facility (Associated Students Children's Center) is located in the Aymer Jay Hamilton building (AJH) at the outer northeast edge of the campus. As discussed previously, the AJH building is slated for demolition. The center has a licensed capacity of 55 children. This facility only meets a fraction of the current and projected demand for childcare. In a 1997 study prepared by Lionakis-Beaumont Design Group, it was estimated that a new 118 child capacity facility would serve approximately 25 percent of the total campus demand that equates to a demand for facilities able to accommodate 472 children. The 118 child capacity facility proposed in 1997 would require approximately 43,000 square feet of building and a slightly larger amount of outdoor space including outdoor parking. A first phase requiring 21,500 square of building and an equal amount of outdoor open space was proposed and has been included as a component of the proposed Modoc II building project. Table 2-4 lists the total estimated childcare center space needed.

Table 2-4
Child Care Center Space Needs

Areas	Square Feet
Estimated Total Campus Need (472 children), Building Indoor Area	172,000 SF/137,600 ASF
Estimated Total Campus Need (472 children), Outdoor Areas	177,200 SF
Estimated Minimum Project Need for Child Care, Building (AS, Modoc II site)	21,500 SF/17,210 ASF
Estimated Minimum Project Need for Child Care, Outdoor Area (AS, Modoc II site)	22,150 SF

Source: Campus Master Plan 2004

Circulation and Parking. Currently there are approximately 2,195 non-motorcycle parking spaces primarily distributed at the periphery of the CSU Chico campus. The largest two concentrations are located north of the campus in the vicinity of the College Park neighborhood, with over 700 spaces, and in the southwest margin of the campus, with over 900 spaces. Many of the northern spaces are associated with students who stay in CSU Chico sponsored campus housing who do not drive to school but use their auto occasionally. In the fall of 2003, Kaku Associates developed a parking needs assessment that found that in addition to the total number of 2,210 on-campus parking spaces, there were at least 305 curbside and off-campus spaces that CSU Chico users utilize. To accommodate the future campus enrollment target of 17,900 (AY) FTES, a total of 3,220 spaces would be needed. Approximately 420 spaces will be lost as a result of the Campus Master Plan 2004 projects and relinquishing the leased parking facility at West

Sacramento Avenue and Warner Street. An increase of 1,430 parking spaces will be needed to serve the future demand for the campus. Addressing the need for parking will involve the following strategies:

- Acquisition/leasing of additional land for parking facilities
- Intensification of parking through the development of parking structures
- Alternative transportation strategies that reduce the need for campus parking

The Campus Master Plan 2004 promotes the acquisition of industrial land to the southwest of the campus along the rail line for use as surface parking or other campus use. The Campus Master Plan 2004 includes the development of two parking structures in separate peripheral areas of the campus, each separated from the existing parking structure. These proposed structures could serve future users in the southeast and north campus areas. The locations explored and incorporated into the Campus Master Plan 2004 include a four-level structure in the southern portion of the future College Park area of campus, and a three-level structure along Second Street built on campus land only or in part on land owned by the City of Chico adjacent to the campus.

The Campus Master Plan 2004 identifies the closure of three street segments in the southern part of the campus that would enhance the pedestrian nature of the campus. These include the full or partial closure of First Street between Ivy Street and Orange or Cedar Streets, creating a westward extension of the First Street pedestrian mall. The second proposed street segment closure would occur on Chestnut Street between Second and Third Streets from the north side of the alley to Second Street to allow for the development of a new parking structure. Third, Rio Chico Way would most likely be eliminated as part of the proposed Rio Chico Academic and Aquatic Center projects identified below in the Campus Master Plan 2004.

Bikeways and Bike Parking Areas. Approximately 30 percent of CSU Chico students use bicycles as their primary form of travel to the campus, only slightly fewer than use the automobile (35 percent). The *Spring 2000 CSU Chico Bicycle Survey* recorded 4,934 bicycle parking spaces on the CSU Chico campus. The parking spaces are distributed throughout the campus and are generally associated with classroom facilities and other major student destinations like the Library and the Student Union. With implementation of the Campus Master Plan 2004 projects, there will be opportunities to relocate and reconfigure bicycle parking as part of the site development of almost every proposed project. For example, the First Street "mall" improvements and the Siskiyou II building project will involve the reconfiguration of large numbers of bicycle parking areas. The Wildcat Activity Center, Rio Chico Academic/Aquatic Center projects and the Whitney Hall site student housing projects also represent significant opportunities to create new bike parking facilities and areas.

Northern California Natural History Museum. CSU Chico has identified the benefit of creating an 11,000 square foot facility to be used by CSU Chico students, public schools, and the larger community. The Museum would serve as display space for existing University collections and for traveling exhibits of interest to the University scientific program and the general public. The facility would provide tours for local primary and secondary schools, as well as visits by the general public and tourists. A site for the facility has been identified on University-owned land adjacent to the Bidwell Mansion Historic Park, accessible from the Esplanade. The museum would be built in two phases.

Infrastructure Plan

New infrastructure will be needed to serve planned new buildings and other facilities. Upgrades will be needed to meet evolving needs, such as telecommunications and classroom technology, and to achieve cost savings related to maintenance and energy savings. Specific modifications and improvements to the utility infrastructure include the following:

- Expand cooling capacity (chilled water generation and storage) by improving building efficiencies
- Expand central plant to accommodate additional chillers, towers, and a chilled water storage tank
- Extend the campus-wide underground distribution system to areas that are not adequately served and to serve planned new facilities
- Extend, upsize and repair the campus-wide underground steam distribution system to serve planned new facilities
- Extend the campus-wide 12 KV power distribution system to load centers not presently served
- Re-allocate buildings to different 12KV circuits to balance the load and make power available for areas master planned for new construction
- Provide emergency power for buildings currently without service
- Increase the capacity of existing emergency systems to support building critical functions
- Correct fuel and air pollution issues for existing generators
- Repair and upgrade the antiquated and undersized natural gas distribution system to provide additional capacity

The CSU Chico Central Plant facility located in the southwest corner of the athletic fields area of campus will be the site of new and upgraded equipment needed to serve campus growth and achieve energy efficiency and savings. An area to the north of the existing Central Plant is indicated as the logical area for Central Plant expansion.

Land Acquisition

CSU Chico is the second smallest campus by acreage in the CSU system. In order to continue to prosper and attract qualified students, the campus must obtain additional land in order to meet a variety of student needs. These would include such things as parking, housing, green space, outdoor physical education and recreation. The Campus Master Plan 2004 revision proposes the acquisition of the College Park and Rio Chico neighborhoods, as specified in the previous Master Plan.

Agricultural Teaching and Research Center (ATRC)

The ATRC is a specialized and separate activity area of the CSU Chico campus operating as a teaching laboratory of the CSU Chico College of Agriculture. The ATRC represents a unique working farm facility demonstrating agricultural practices for use in the Northern California region. The majority of the projects identified in the Campus Master Plan 2004 for the ATRC are eligible for state funding as part of the standard College of Agriculture academic requirements. There are some projects that will be augmented by or provided by non-state funding.

Agricultural Demonstration and Research Facility. The ATRC will accommodate research and demonstration activities that support instruction in Agricultural classes. Existing facilities are old temporary buildings that are becoming increasingly difficult to maintain and cannot accommodate the need to effectively demonstrate new technological advances. The new demonstration facility is estimated to be 10,400 GSF. Major program components in the Campus Master Plan 2004 include:

- 24-station computer laboratory
- Small conference room
- Open laboratory for classroom related student research
- Two instructional activity areas
- Restrooms and shower facilities

New Dairy. This project is designed to upgrade and relocate the dairy facility next to the new lagoon waste water system, a better location for the unit with the highest waste management needs. Major program components include:

- Free-stall system, traditional milk production facility
- Demonstration 50-acre grass-fed organic dairy
- Self-locking stanchions to facilitate artificial insemination and embryo transfer
- Two separate milking systems comprising 12 state-of-the-art, computerized, automated milking machines
- Bulk tank milk storage units
- New well, pump, fencing, and a set-sprinkler system integrated with the ATRC Supervisory Control and Data Acquisition (SCADA) system to support organic milk production

Commodity, Grain and Hay Storage. The ATRC does not have adequate feed storage facilities, and efficient use of the current facilities is not possible. The Campus Master Plan 2004 recommends construction of a larger, more efficient and integrated, covered concrete drive-through commodity storage building (75,000 GSF) with eight storage bays. The specific program components include:

- Eight 25-foot wide and 30-foot deep storage bays
- Dump pit where grain can be unloaded and moved by auger
- Eight 75-ton grain bins with dryer devices
- Open-span, covered concrete slab for hay storage
- Uncovered concrete slab for silage bag storage

Pesticide, Seed and Fertilizer Building. This project would replace the existing chemical storage building with a combined pesticide and fertilizer storage complex. Increased regulations concerning storage, handling, and use reporting of agri-chemicals dictates the need for this facility. The project would consist of:

- 500 gallon capacity dry sump for collecting and re-circulating spilled spray material
- 12-inch stem wall to insure containment in case of a spill
- Covered slab for parking spray equipment
- Lockers, safety showers and eye washes
- Structure with cement flooring for fertilizer and seed storage

Equipment Storage Facility. This facility will consist of a 30 ft x 500 ft pole barn structure with mounded gravel floor designed to protect valuable research and farm equipment.

Swine Facility. The Campus Master Plan 2004 calls for a comprehensive swine facility renovation project with significant new facility expansions to include the following:

- 40-sow (group pen) gestation/breeding barn with attached small lab for artificial insemination and breeding facilities (renovate existing buildings and expand by 1,040 square feet)
- 12-crate farrowing barn with attached office and associated two-bedroom student apartment with one kitchen and bath unit, laundry room with shower (renovate Building 21 and expand by 1,215 square feet)
- Develop environmentally-controlled nursery barn (renovate Building 22 and expand by 180 square feet).
- Automated gutter flush for waste management
- Automatic feeding system
- Automatic watering and waste removal system
- Tenderfoot flooring and stainless steel construction

The proposed facility will be constructed to current industry standards with regard to space requirements, animal comfort, and bio-security.

ATRC Conference Center. The conference center will facilitate professional meetings ranging from 30 to 300 persons. The major program components include:

- Multi-use, divisible meeting room
- Full kitchen
- Offices
- Farm marketing facility for ATRC agricultural products
- Reception area
- Full restroom facilities

ATRC Events Center. The ATRC Events Center is proposed to have a capacity of 2,000 persons and a size of approximately 45,000 GSF.

- Portable bleachers with an announcer's booth centrally located above the bleachers
- Concession stands and restrooms
- Large foyer for ticket sales or registration
- Appropriate lighting and a sprinkler systems
- Sound system, staging and portable pens

Meats Laboratory Upgrade. The corral/pen structure behind the existing meats laboratory will be replaced with an updated product-safe facility that will provide a site for quarantine of all off-site livestock needed for the Future Farmers of America (FFA) and 4H field days. The improvements include:

- A wall between the front entrance and the stairwell to the conference room
- Replacement of the existing air conditioning unit (including ducting and vents)
- Modern refrigeration unit in processing room

Waste Management System. The existing agricultural by-product ponds will be enlarged and sealed to facilitate greater water handling capacity and to prevent ground water contamination, to meet EPA regulations, and to more efficiently recycle farm produced nutrients. The major components of the project are:

- Agitator and pump, to feed the irrigation system for each lagoon
- Suitable waste-water capturing system for each unit
- Anaerobic digester for each unit
- A covered storage facility and additional pad space for composting

Beef Unit Additions and Upgrade. The existing preparation area in the Beef Show Barn will be expanded to hold 24 students. The existing limited artificial insemination barn will be upgraded with new artificial insemination/embryo transfer building. Pastures will be enhanced with new well pump, sprinkler and fencing improvements. This will be accomplished with the following project components:

- Renovate Building 23 by remodeling the existing student apartment to accommodate two large bedrooms
- Upgrade preview barn with upgraded meeting rooms, office facility, electrical system and lighting
- Demonstration site for assisted animal reproduction
- Upgrade feeding facility for recipient/donor cows
- Research area with bull collection unit, artificial insemination breeding boxes, donor flushing facility and a dustproof, environmentally controlled embryo handling room
- Holding pens with a cement, nonskid floor
- New water well and pump to support irrigation of 100 acres of pasture
- New sprinkler set systems connected to the ATRC SCADA irrigation control systems for 14 pasture acres
- New fencing for irrigated pasture

Sheep Unit Additions and Upgrade. The Campus Master Plan 2004 calls for a complete renovation and upgrade of corrals, gates, and fencing to accommodate 300 head as well as rebuilding and expanding the maternity barn. The major components of this project include:

- Renovate student apartment
- Convert utility room into artificial insemination/embryo transfer room
- Renovate corrals, gates, and fencing
- New electrical wiring throughout
- Computer and networking infrastructure
- Rebuild and expand maternity barn (approximately 925 square feet)
- Mechanical feeding system with feed mixer
- Improvements to Sheep Management Center

Ornamental Horticulture Unit Additions and Upgrade. The Horticulture Headhouse (Building #7) will be renovated and the horticultural area will be reorganized. Two new greenhouses will replace existing deteriorated facilities. These improvements include:

- New conservatory-type glasshouses
- New walk-in cold boxes
- Two new offices
- State-of-the-art environmental controls for greenhouses

2.3 PROJECT OBJECTIVES

The primary objective of the project is to accommodate the anticipated growth in student enrollment and provide additional student support type facilities such as student housing, recreation, child care and parking to address existing unmet demand. Replacement of aging and inefficient academic facilities is also needed to insure an efficiently functioning campus and academic program. Specific objectives of the Campus Master Plan 2004 include the following:

Campus Environment

- Use open space as an organizational element
- Promote a strong expression of landscape including a range of sizes and appropriate species of trees
- Promote a walkable campus that provides a logical progression of spaces linking destinations
- Preserve the natural characteristics of Big Chico Creek while permitting visual enjoyment of them as viewed from the campus
- Emphasize a scale of facilities that is compatible with human activities and perceptions
- Promote facilities that are part of a recognizable "family" of related structures, hardscape and other environmental elements identified with CSU Chico
- Discourage the presence of the automobile and other motorized vehicles while encouraging pedestrian and bicycle modes of movement
- Promote built systems that respect, maintain and work with the natural environment

Relationship with the Community

- Promote facilities that minimize aesthetic and functional conflicts with neighboring uses and facilities
- Permit a free flow of pedestrian activity between the University and downtown Chico

Student Life

- Provide facilities that enrich the total student experience at CSU Chico at levels commensurate with other universities competing with CSU Chico
- Promote facilities that retain students on campus-that reduce their need to leave the campus for various daily activities
- Provide a sufficient number and variety of spaces on campus that promote human interaction

College of Agriculture

- Dynamic leadership in advancing agriculture, natural resource management and environmental sciences, and related areas
- A positive work environment for all employees and students
- A team approach to program development and delivery
- A balance between basic and applied research, teaching, and service, as well as between disciplinary programs
- A standard of excellence in teaching, research, and service
- A commitment to diversity in personnel, services provided, and clientele served

2.4 DESCRIPTION OF PROJECT ALTERNATIVES

The following alternatives are identified and evaluated in Chapter Four of this EIR.

No Project Alternative

In accordance with Section 15126.6(e)(3)(B) of the CEQA Guidelines, the No Project alternative consists of an analysis of the circumstance under which the project does not proceed; that is, the project site will remain guided by the existing Campus Master Plan (1990) ("No Project" alternative).

Unmet Needs Alternative

This alternative would allow those projects that are required to meet the existing unmet needs of the University. Improvements to the ATRC would be limited to those considered to be essential. These projects would include all of the ATRC Phase 1 and ATRC Phase III projects as well as the renovated swine unit. Eliminated from this alternative would be the new dairy unit, the Conference Center and the Events Center. Infrastructure improvements necessary to support these projects would be included.

Housing/Parking Alternative

This alternative would analyze a project that included only those facilities designed to accommodate additional and improved housing and parking facilities. This alternative would eliminate the planned recreational facilities as well as the natural history museum.

Improvements to the ATRC would be the same as for the unmet needs alternative above.

CHAPTER THREE

ENVIRONMENTAL SETTING, IMPACTS & MITIGATION MEASURES

CHAPTER THREE
ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.1 AESTHETICS/LIGHT AND GLARE

INTRODUCTION

This section addresses the potential for the California State University, Chico campus (CSU Chico) and the Agricultural Teaching and Research Center (ATRC) improvement project to cause significant impacts to aesthetics or visual resources in the project vicinity and the region. Visual resources are the natural and cultural features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which the project's presence will change the perceived visual character and quality of the environment in which it will be located.

3.1.1 SETTING

Regional Setting

The CSU Chico campus lies within the City of Chico, located in the northern portion of California's Central Valley, six miles east of the Sacramento River. The main campus presently encompasses 119 acres, which is located north and west of the City of Chico's downtown. Surrounding areas include several residential neighborhoods, Chico High School to the north, mixed residential and railroad industrial area to the south and southwest, downtown Chico to the southeast and the Historic District of Chico to the south. The general topography of the area including and surrounding the campus is relatively flat on both sides of Big Chico Creek, which bisects the campus, with a predominantly southwesterly slope. Big Chico Creek also serves as the backbone of Bidwell Park, a large natural and recreational area that stretches for eleven miles along the creek immediately east of the campus. The Campus Master Plan 2004 proposes the development of four new State-supported facilities, one major renovation project, and two future land acquisition projects. The acquisition projects are identified as future "reserve sites" for a future academic facility (Rio Chico area) and for additional campus student housing and parking (College Park area), see Figure 3.1-1.

The Campus Master Plan 2004 also proposes upgrades and expansion of the ATRC, an 800-acre site located approximately five miles south from the CSU Chico campus. Approximately ninety-five acres are considered the core area of the ATRC and contain several working animal and plant crop farm units, administrative and teaching areas, public gathering, maintenance, storage and agricultural by-product facilities. The ATRC is surrounded by agricultural land (see Figure 2-3, ATRC Location).

Project Site Setting

The CSU Chico campus is considered one of the most beautiful and pleasant campuses in the CSU system. The most outstanding qualities of the CSU Chico campus include the collection of historic and architecturally significant buildings; a heavily landscaped environment, including a large number of elegant specimen trees; a generally logical arrangement of buildings around a system of open spaces and pathways; a compact, walkable, relatively automobile-free campus and proximity to a vibrant pedestrian-oriented downtown. Much of the architectural character is defined through the use of concrete and brick building materials that contribute to an impression of overall campus unity. Along 1st Street, and within the historical core around Taylor Hall, a traditional fluted post and acorn fixture is utilized. Throughout much of the core several types of contemporary orb fixtures are used. These are post-mounted on a raised concrete foundation. More recent additions especially along the campus perimeter utilize unobtrusive “shoebox” type fixtures. Along the campus/City of Chico edges, streets and intersections are lit primarily with utilitarian cobra style street fixtures.

Site lighting for the CSU Chico campus is currently provided by several types of fixtures placed throughout the campus. Generally, though not optimally, these fixtures are perceived to provide sufficient illumination for pedestrian circulation along the critical paths. A notable exception is lighting within the creek area where lighting levels are deemed insufficient due to denser vegetative screening, and inherently, creating an environment of perceived vulnerability.

The ATRC is a working, 800-acre farm facility located two miles south of the CSU Chico campus and is surrounded by agricultural land. The ATRC serves as the primary location for practical teaching and research activities of the CSU Chico College of Agriculture. Established in 1960, the ATRC consists of extensive acreage devoted to field, tree crops and pasture and a core working “farm” area with a comprehensive array of plant and animal facilities, including those dedicated to support, farm equipment maintenance, storage, processing, propagation, teaching, training and research activities.

Site lighting for the ATRC is very limited. Most of the lighting at the ATRC is used for security reasons. Most of the existing facilities at the ATRC are enclosed, so light pollution is minimized inside these buildings.

Potential Project Site Visibility

Identification of the project’s viewshed was based on review of the project engineering drawings, study of topographic maps and air photos, and extensive field observations. The viewshed has two categories of view areas: (1) those in which the proposed new facilities and ancillary facilities are likely to be generally visible; and (2) those in which views toward the project site and its ancillary facilities are likely to be blocked for the most part, but may be visible from certain specific locations.

There are locations throughout the CSU Chico campus where the new and improved facilities will be visible over short distances. Views of the new facilities and improvements to the ATRC

Current View of the Taylor Building

New Parking Structure Lot, Current Parking Area

Source: Quad Knopf, Inc. 2004

Quad Knopf

PHOTOPLATE A

Figure 3.1-1

will only be visible from the ATRC site. As a practical matter, the boundaries of the viewsheds were set at 500 feet for the CSU Chico campus and one mile for the ATRC in directions where views were not otherwise blocked by buildings, trees or other obstructions. These distances were selected because elements of a view that are 500 feet from the viewpoint on the main campus and one mile or more on the ATRC site, are considered part of the background – the landscape zone in which little color or texture is apparent, colors blur into values of blue or gray and individual visual impacts become least apparent.

Regulatory Setting

This section briefly describes federal, State, and local regulations, permits, and policies pertaining to visual resources, as they apply to the proposed project.

Federal and State

There are no specific federal or State regulations that relate to aesthetics/visual resources for this project.

Local Regulations

Chico State Campus Master Plan 2004. The Campus Master Plan 2004 addresses a number of issues related to the campus's functional and visual environment. As the campus is noted for its elegant architecture, mature landscaping, human scale and pedestrian orientation, a major goal of the Plan is to maintain and enhance those qualities of the campus. The Campus Master Plan 2004 addresses campus architecture, landscaping, open space, signage, lighting, bicycle storage and campus benches and trash receptacles. Further, just as the Plan identifies the location and describes the essential characteristics of the new and updated buildings for the campus, it also discusses updates and expansions to essential campus infrastructure that support those buildings.

The Campus Master Plan 2004 also includes a Landscape Improvement Plan. Landscape design and planning principles are specified and several landscape improvement areas are described in this plan.

3.1.2 IMPACTS AND MITIGATION MEASURES

Analysis Procedure

Analysis of the project's impacts was based on evaluation of the changes to the existing visual resources that would result from the improvements of the CSU Chico campus and the ATRC. In making a determination of the extent and implications of the visual changes, consideration was given to:

- The specific changes in the affected visual environment's composition, character and any specially valued qualities.

- The affected visual environment's context.

- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration.

- The numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the likely changes.

Impact Evaluation Criteria

To make the determination of whether the project's visual effects would be "significant" under the provisions of CEQA, reference was made to Appendix G of the CEQA Guidelines. The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including...objects of historic or aesthetic significance" (14 CCR, § 15382). Consistent with the criteria set forth in Appendix G of the CEQA Guidelines, the project is considered to have a significant adverse impact on the environment if it does any of the following:

- Would have a substantial adverse effect on a scenic vista

- Would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

- Would substantially degrade the existing visual character or quality of the site and its surroundings

- Would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

Impact #3.1-1: Have a substantial adverse effect on a scenic vista.

Discussion/Conclusion: The CSU Chico campus is located on land that is flat and has been developed with a variety of multi-story buildings, parking areas, roadways, and walkways. The campus is surrounded by developed areas. There are areas of the campus which exhibit weak visual and/or functional characteristics that detract from the overall impression the campus presents. The existing structures have been designed and built over a seventy year time period. Most of these buildings will be enhanced or upgraded to improve the overall visual characteristics of the campus. The ATRC is located within an agricultural area, is used for agricultural research, and is a farming facility. There are no designated scenic vistas in the vicinity of the CSU Chico campus or the ATRC. This impact is ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.1-2: Substantially degrade the existing visual character or quality of the site and its surroundings?

Discussion/Conclusion: The following sections present the anticipated visual impacts resulting from the proposed improvements to the CSU Chico campus and to the ATRC. The discussion is primarily concerned with long-term impacts of the project. In general, short-term impacts are not expected to lead to significant impacts due to their temporary nature. Short-term impacts would likely result from the activity of construction equipment (e.g., cranes, scaffolding, temporary lighting, etc.) and dust.

The adoption of the CSU Chico Campus Master Plan 2004 will not directly result in any impact to the visual quality of the campus. Implementation of projects identified in the Master Plan could result in impacts to the visual character of the campus. A number of buildings are proposed for demolition and replacement. Some of the one-story buildings proposed for demolition are being replaced with multi-story structures. Two parking structures are also proposed as part of the Campus Master Plan 2004. All of these changes will alter the visual character of the campus.

Although such judgments are necessarily subjective, the construction of multi-story structures has the potential to degrade vistas on the CSU Chico campus, nearby neighborhoods and the surrounding areas. Viewers would be limited to students on the campus, motorists, and bicyclists on perimeter roadways and residents of surrounding areas. The majority of residents in the surrounding area are made up of students that are part of fraternities and live in fraternity housing or apartments. Most of the views from these residents and other residential homes of the campus are obscured by large mature trees and established landscape. The proposed new structures will appear similar to adjoining structures and facilities in architectural design. While views of the improved or new structures may not be objectionable or negative, they will represent a strong change from existing views on the campus. Local residents and even students may consider the visibility after the completion of the new structures/improvements to the campus to be intrusive; however, these changes will not substantially degrade the visual quality of the campus since the buildings that are being replaced are not representative of the campus theme and are outdated, and in some cases unsightly (see Figures 3.1-2 through 3.1-5 for current views of the CSU Chico campus facilities). This impact to the CSU Chico campus is ***potentially significant***.

The CSU Chico campus has been developed over the years of its existence with a variety of non-native landscaping. There are a large number of elegant specimen trees. Although much of the campus landscape presents a visually strong image and provides for a functional network of pedestrian pathways, some components of campus landscape system can be improved upon. The Campus Master Plan 2004 includes a Landscape Improvement Plan. Landscape design and planning principles are specified and several landscape improvement areas are described. The Campus Master Plan 2004 contains a discussion of the campus visual environment as well as design guidelines for new facilities. This impact to the CSU Chico campus is ***less than significant***.

The changes to the ATRC facility are anticipated to improve the visual quality of the site by replacing older buildings with new structures and landscaping. The improvement concepts call for selected landscaping improvements to visually strengthen the entry drive experience, to screen unattractive areas, to shade parking facilities and to otherwise enhance the appearance of the facility. The beautification concept plan also calls for the standardization of corral fencing to help visually unify the ATRC facility. The details of the beautification plan are not yet specified in the Campus Master Plan 2004. These details will be developed as the Campus Master Plan 2004 is implemented and individual developments will adhere to the provisions set forth in the Campus Master Plan 2004. This impact is ***less than significant***.

Mitigation Measures

Implementation of the following mitigation measures will reduce impacts to visual resources to a ***less-than-significant*** level.

Mitigation Measure #3.1-2a:

Future proposals for the rehabilitation, renovation, and/or replacement of structures on the Chico campus shall adhere to the design principles and characteristics set forth in the Campus Master Plan 2004. These standards include:

- *Common building materials and colors:*
  - *red brick walls;*
  - *potential limited use of concrete for building columns, surrounds, lintels, planter seat walls;*
  - *iron and steel railings, low fencing, trash receptacles/surrounds;*
  - *curved red tile roofs, gable and hip types in the historic core area.*

- *Modernistic to modern with classical forms and elements as stylistic constants.*

- *Landscaping, particularly trees, to form a soft contrast and frame to campus buildings contributing to the unification of the overall visual environment.*

Mitigation Measure #3.1-2b:

Future proposals for the rehabilitation, renovation, and/or replacement of structures in the historic core area shall complement the historic core buildings in terms of building forms, materials and colors and shall adhere to the guidelines set forth in the Campus Master Plan 2004 including:

- *Principal roofs shall be of a gable design with eaves and pitch similar to the nearest neighboring historic core structure.*

- *Roofs shall be constructed of curved tiles of a color similar to the nearest neighboring historic core structure.*

New Park Structure Lot - Current Parking Area

New Student Services Lot - In Process

Source: Quad Knopf, Inc. 2004

Quad Knopf

PHOTOPLATE B

Figure 3.1-2

Whitney Hall - Existing Bike Lot

Butte Hall

Source: Quad Knopf, Inc. 2004

Quad Knopf

PHOTOPLATE C

Figure 3.1-3

Current Regional / Continuing Education Facility

Current Selvester's Café

Source: Quad Knopf, Inc. 2004

Quad Knopf

PHOTOPLATE D

Figure 3.1-4

Current Aymer Jay Hamilton Building - Backside

Location of New Natural History Museum

Source: Quad Knopf, Inc. 2004

Quad Knopf

PHOTOPLATE E

Figure 3.1-5

- *Principal gable ridge line heights shall not exceed that of the nearest neighboring historic core structure.*

- *Walls shall be constructed of brick of a type and coursing similar to that of the nearest neighboring historic core structure.*

Impact #3.1-3: Introduction of new sources of light and glare as a result of implementation of the CSU Chico Campus Master Plan 2004, and impacts of increased lighting on the night sky.

Discussion/Conclusion: The CSU Chico Campus Master Plan 2004 plan contains a section describing the lighting concept for the campus. The plan identifies different lighting level zones on the campus. The plan calls for illuminating all primary and critical pedestrian routes between buildings, parking, campus edges, and outdoor activity areas. Lighting levels are intended to correspond to minimum standards and be designed for higher levels to illuminate active areas within the campus core and building entries. Since many of the existing lighting fixtures are older and were not all required to adhere to standards to minimize light pollution, implementation of the Master Plan could eventually result in less light pollution than currently exists. Impacts from light and glare are considered ***potentially significant***.

<u>Mitigation Measures</u>

Implementation of the following mitigation measures will reduce impacts related to light and glare to a ***less-than-significant*** level.

Mitigation Measure #3.1-3a:

New lighting proposed for future projects as a result of implementation of the Campus Master Plan 2004 shall be directed downward and shall not shine onto adjacent properties. Additionally, all new lighting shall adhere to the guidelines in the Campus Master Plan 2004, including:

1. *The offsite visibility and potential glare of the lighting will be restricted by specification of non-glare fixtures, and placement of lights to direct illumination into only those areas where it is needed.*

2. *Appropriate fixture selection and light placement shall minimize light pollution and enhance natural color rendition. All lighting shall utilize refractive lenses and be shielded to reduce glare into buildings and neighboring areas.*

3. *Walkway lighting fixtures shall not be mounted higher than twenty feet unless necessary for security reasons.*

Mitigation Measure #3.I-3b:

Individual developments associated with the Campus Master Plan 2004 shall minimize lighting to areas required for safety, security, or normal operations on the main campus and at the ATRC and shield lighting from public view to the greatest extent possible. The direction and shielding of lighting shall be regulated to reduce light spillage, light pollution, and glare. Highly directional light fixtures shall be used with non-glare lighting fixtures. All lighting and light shields shall be installed and operated consistent with manufacturer's specifications.

3.2 AIR QUALITY

INTRODUCTION

This section describes the impacts of the proposed project on air quality. The section was prepared using thresholds of significance recommended by the Butte County Air Quality Management District. This chapter describes existing air quality; local and regional air quality impacts of the project and mitigation measures warranted to reduce or eliminate any identified significant impacts.

3.2.1 SETTING

Air Basin Climatology

Chico is located in the northern Sacramento Valley, a broad, flat valley bounded by the coastal ranges to the west and the Sierra Nevada to the east. The entire air basin is about 200 miles long in a north-south direction, and has a maximum width of about 150 miles, although the valley floor averages only about 50 miles in width.

The climate of the project area is characterized by hot, dry summers and cool, wet winters. During the summer months from mid-April to mid-October, significant precipitation is unlikely and temperatures range from daily maximums approaching 100 degrees F to evening lows in high 50s and low 60s. During the winter highs are typically in the 60s with lows in the 30s.

Wind direction is primarily up- and down-valley due to the channeling effect of the mountains to either side of the valley. During the summer months surface air movement is from the south, particularly during the afternoon hours. During the winter months wind direction is more variable.

Regulatory Context

Chico is located within the Northern Sacramento Valley Air Basin and the Butte County Air Quality Management District (BCAQMD). The BCAQMD has adopted Indirect Source Review Guidelines, and these measures are contained in the City of Chico's *Best Practices Manual*.

Both the U. S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants that represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents.

The federal and California state ambient air quality standards are summarized in Table 3.2-1 for important pollutants. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter ($PM_{2.5}$ and PM_{10}).

Table 3.2-1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour	0.12 ppm	0.09 ppm
	8-Hour	0.08 ppm	--
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.05 ppm	--
	1-Hour	--	0.25 ppm
Sulfur Dioxide	Annual	0.03 ppm	--
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	--	0.25 ppm
PM_{10}	Annual	50 ug/m^3	20 ug/m^3
	24-Hour	150 ug/m^3	50 ug/m^3
$PM_{2.5}$	Annual	15 ug/m^3	12 ug/m^3
	24-Hour	65 ug/m^3	--
Lead	30-Day Average	--	1.5 ug/m^3
	3-Month Average	1.5 ug/m^3	--

Notes: ppm = parts per million; ug/m^3 = Micrograms per Cubic Meter.
Source: CARB 2003

The State of California regularly reviews scientific literature regarding the health effects and exposure to particulate matter and other pollutants. On May 3, 2002, the California Air Resources Board (CARB) staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$ (particulate matter 2.5 microns in diameter or less). The new standards became effective on July 5, 2003.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. Toxic Air Contaminants (TACs), are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing Air Quality

The California Air Resources Board operates air quality monitoring sites within Butte County in Chico and Paradise. Both the federal and state governments have enacted laws mandating the identification of areas not meeting the ambient air quality standards and development of regional air quality plans to eventually attain the standards. Under the Federal Clean Air Act Butte County has been designated attainment or unclassified for all national ambient air quality standards except the 1-hour/8-hour ozone standards and $PM_{2.5}$. Under the state system, Butte

County is designated nonattainment for the California standards for ozone, $PM_{2.5}$ and PM_{10}. The air districts of the Northern Sacramento Air Basin have jointly prepared and adopted a uniform air quality attainment plan addressing ozone and PM_{10}. (NSVAB 2003)

Methodology

Local Carbon Monoxide Concentrations. A screening procedure for estimating carbon monoxide concentrations was applied to signalized intersections under existing, project and cumulative traffic conditions. The screening procedure contained in *Transportation Project-Level Carbon Monoxide Protocol* was utilized (Garza et. al. 1997). The methodology uses estimates of the contributions to carbon monoxide concentrations for a "base case" characterized by a specific intersection configuration, meteorology, traffic volume and indicators of intersection performance.

The following assumptions were made as input to the screening procedure as appropriate for a project in Butte County and based on project surroundings:

Geographical Location: Central Valley
Average Cruise Speed: 35 MPH (away from intersections)
Analysis Year: 2004 for existing and existing plus project scenarios; 2012 for cumulative plus project scenario.
Percentage of Vehicle Operating in Cold Start Mode: 20 percent
Distance to Closet Receptor: 7 meters

The screening procedure can produce forecasts of concentrations for future years up to the year 2012. For the project plus cumulative traffic scenario the procedure was applied to year 2025 traffic volumes. This is a worst-case scenario, since year 2025 emission rates for vehicles would be lower than those in the year 2012.

The screening procedure provides a worst-case estimate of 1-hour and 8-hour concentrations of carbon monoxide generated by vehicles impacting an intersection. The other contribution to the total concentration is the background level attributed to more distant traffic. The 8-hour background level was assumed to be 4.1 parts per million, which was the highest measured concentration of carbon monoxide measured at the Chico-Manzanita Avenue monitoring site during the period 2001-2003 (CARB 2005).

The resulting predicted worst-case carbon monoxide concentration for existing conditions and future conditions with project and cumulative traffic increases are shown in Table 3.2-2. Intersections were selected on the basis of Level of Service, which is related to average delay. Level of service would be C or worse at each intersection under existing or existing plus project traffic. The analysis was based on PM traffic volumes.

The concentrations in Table 3.2-2 are for worst-case locations under theoretical worst-case meteorological conditions. Concentrations at greater distances from the roadway and at locations not near signalized intersections would be substantially lower.

Regional Air Pollutant Emissions. Estimates of regional emissions generated by project traffic were made using a program called URBEMIS-2002. URBEMIS-2002 is a program that estimates the emissions that result from various land use development projects. Land use project can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS-2002 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Inputs to the URBEMIS-2002 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Average trip lengths, average speeds and vehicle mixes for Mountain Counties and Rural Counties were used. Analysis year was 2025 for project buildout. The URBEMIS-2002 output is included in Appendix B. The results are shown in Table 3.2-3.

Table 3.2-2
Projected Worst-Case Carbon Monoxide Concentrations, in Parts Per Million

Intersection	Existing		Existing Plus Master Plan		Cumulative Plus Master Plan (2025)	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
W. Sacramento/Nord	11.1	6.7	11.7	7.0	10.3	6.2
Sacramento/Warner	9.5	5.7	10.1	6.1	9.1	5.4
Esplanade/First	11.6	7.0	12.3	7.4	12.8	7.7
Second/Main	10.9	6.6	11.1	6.6	9.9	6.0
Midway/Park	11.0	6.6	11.4	6.9	10.2	6.1
Midway/Hegan	10.0	6.0	10.0	6.0	9.4	5.7
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0

Table 3.2-3
Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}
Area Sources	0.34	3.56	0.01
Project Traffic	22.38	30.79	107.25
Total	22.72	33.89	107.26
BCAQMD Threshold of Significance	137.0	137.0	137.0

3.2.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Based upon Appendix G of the State CEQA Guidelines, the proposed project would normally be considered to have a significant impact on air quality if project-generated emissions would:

- Conflict with adopted environmental plans, policies, or regulations for air pollutants or cause a violation of an ambient air quality standard or worsen an existing violation

- Expose sensitive receptors to substantial pollutant concentrations

- Have the potential to increase localized carbon monoxide levels at nearby intersections in exceedance of adopted standards

- Create objectionable odors affecting a substantial number of people

Impact #3.2-1: Construction activities such as demolition, clearing, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would temporarily affect local air quality for adjacent land uses.

Discussion/Conclusion: The project would result in demolition and construction activities at various sites within and near the main campus and at the CSU Chico Agricultural Center located south of the main campus. Demolition of existing structures and construction would result in numerous activities that would generate dust. Grading, earthmoving and excavation are the activities that generate the most PM_{10} emissions. Impacts would be localized and variable, occurring at several locations for a period of several months at any one location. Construction dust impacts are considered to be ***potentially significant*** on a localized basis.

Mitigation Measures

Implementation of the following mitigation measures will reduce potential impacts to a ***less than significant level.***

Mitigation Measure #3.2-1:

Consistent with BCAQMD Indirect Source Review Guidelines, the following construction dust and equipment exhaust emissions measures should required in all construction contracts:

- *Watering should be used to control dust generation during demolition of structures and break-up of pavement.*

- *Cover all trucks hauling demolition debris from the site.*

- *Use dust-proof chutes to load debris into trucks whenever feasible.*

- *Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil and wind exposure.*

- *Use chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).*

- *On-site vehicles limited to a speed of 15 mph on unpaved areas.*

- *Plant vegetative ground cover in disturbed areas as soon as possible.*

- *Cover inactive storage piles.*

- *Paved streets adjacent to the development site should be swept or washed at the end of each day as necessary to remove excessive accumulations of silt and/or mud which may have accumulated as a result of activities on the development site.*

- *Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the BCAQMD shall also be visible to ensure compliance with BCAQMD Rule 201 and 207 (Nuisance and Fugitive Dust Emissions).*

- *Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person).*

- *Require contractors to minimize exhaust emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for long periods.*

Impact #3.2-2: The project would change traffic volumes and congestion levels, changing carbon monoxide concentrations at land uses near the roadway.

Discussion/Conclusion: On the local scale the pollutant of greatest interest is carbon monoxide. Concentrations of this pollutant are related to the levels of traffic and congestion along streets and at intersections.

As shown in Table 3-2, existing concentrations meet the state/federal ambient air quality standards. The addition of project traffic would increase concentrations by up to 0.7 PPM, but concentrations remain below state/federal standards. Since project traffic would not cause a violation of either ambient air quality standard, nor contribute substantially to an existing violation, the impact of the project on local carbon monoxide concentrations is ***less-than-significant.***

Mitigation Measures

No mitigation measures are required.

Impact #3.2-3: Vehicle trips generated by the project and area sources within the project would result in new air pollutant emissions within the air basin.

Discussion/Conclusion: The daily increase in regional emissions from area sources and auto travel is shown in Table 3-3 for reactive organic gases (hydrocarbons) and oxides of nitrogen (the two precursors of ozone) as well as particulate matter (PM_{10}). Project emissions exceed the BCAQMD Level B Action-Level Criteria for ozone precursors and PM_{10} (25 pounds per day for ozone precursors and 80 pounds per day for PM_{10}). The BCAQMD identifies standard mitigation measures applicable to all development. Those applicable to this project would be:

- Use of energy-efficient lighting (includes controls) and process systems such as water heaters, furnaces and boiler units.

- Use of energy efficient and automated controls for air conditioning.

Without implementation of these standard mitigation measures the adoption of the Master Plan has the potential to result in new air pollutant emissions within the air basin. This is a ***potentially significant impact.***

Mitigation Measures

Implementation of the following mitigation measures will reduce potential impacts to a ***less than significant level.***

Mitigation Measure #3.2-3:

Future development that occurs as a result of the implementation of the Master Plan shall adhere to the following standards:

- *Orient buildings to the north for natural cooling and the use of appropriate landscaping that maximizes the potential of solar design principles.*

- *Use of solar water heating for at least 25 percent of the building floor area.*

- *Incorporate shade trees, adequate in number and proportional to the project size, throughout the site to reduce building heating and cooling requirements.*

- *Provide preferential parking spaces for carpools and vanpools.*

Impact #3.2-4: The project and cumulative development would change traffic volumes and congestion levels, changing carbon monoxide concentrations at land uses near the roadway.

Discussion/Conclusion: Carbon monoxide concentrations with project and cumulative traffic increases are shown in Table 2 for six worst-case intersections. Concentrations remain below state/federal standards, so project and cumulative traffic would not cause a violation of either ambient air quality standard, nor contribute substantially to an existing violation. The impact of the project and cumulative development on local carbon monoxide concentrations is ***less-than-significant***.

Mitigation Measures

No mitigation measures are required.

3.3 BIOLOGICAL RESOURCES

This section describes the regulatory setting, regional biological resources, and impacts that are likely to result from project implementation. NOP comments regarding biological resources were received from the City of Chico (Oct. 15, 2004) during the public review period. No other comments regarding biological resources were received. Information in this section is derived primarily from the following:

- *Campus Master Plan* (California State University, Chico 1991);
- *Campus Master Plan Environmental Impact Report* (California State University, Chico 1991);
- *City of Chico General Plan* (Chico 1999)
- *Terrestrial Vegetation of California* (Barbour and Major 1990)
- *The Jepson Manual, Higher Plants of California* (Hickman 1996)
- *Inventory of Rare and Endangered Vascular Plants of California* (Skinner, Pavlik, and Vorobik 2001)
- *CNDDB* (California Department of Fish and Game 2004)

3.3.1 SETTING

Regional Setting

Eco-region

The project area is located within the eco-region known as the Central Valley. The Central Valley includes the San Joaquin and Sacramento River Valleys, and is characterized by flat plains. The natural vegetation within this region was once a diverse mosaic of perennial bunchgrass ecosystems including prairies, oak-grass savannas, desert grasslands, as well as riparian woodlands, freshwater marshes, and vernal pools. This region was originally one of the most diverse, productive, and distinctive grasslands in temperate North America, although most of this vegetation has been replaced by irrigated agriculture, other cropland, grazing land, or urban development. The soils in the region are recent alluvial soils, light-colored soils of the wet and dry sub-humid regions.

Main Campus

The 119-acre Main Campus site is located in the southern portion of the Big Chico Creek Watershed and is bisected by Big Chico Creek, which is one of many tributaries to the Sacramento River. The Main Campus is almost entirely built-out, containing academic and administration buildings, parking facilities, recreational facilities, etc.

Natural habitat is limited to the riparian corridor located along the Big Chico Creek. The Big Chico Creek contains abundant blue elderberry (*Sambucus mexicana*), which is the host plant for the federally listed valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). A protocol-level survey for the listed species was not conducted as part of this assessment.

Marginal wildlife habitat exists within landscaping areas, as well as athletic fields. Figure 3.3-1 depicts the habitat types located on the Main Campus.

Agricultural Teaching and Research Center (ATRC)

The 800-acre ATRC site is located in the northern portion of the Butte Creek Watershed to the south of Comanche Creek and to the north of Butte Creek. The ATRC is predominately agricultural land containing irrigated row crops and orchards. The ATRC site also contains several structures, including human residences, a dairy, and several livestock structures. Much of the agricultural activities occur as research experiments for the University. Figure 3.3-2 depicts the habitat types located on the ATRC site.

Habitat Types

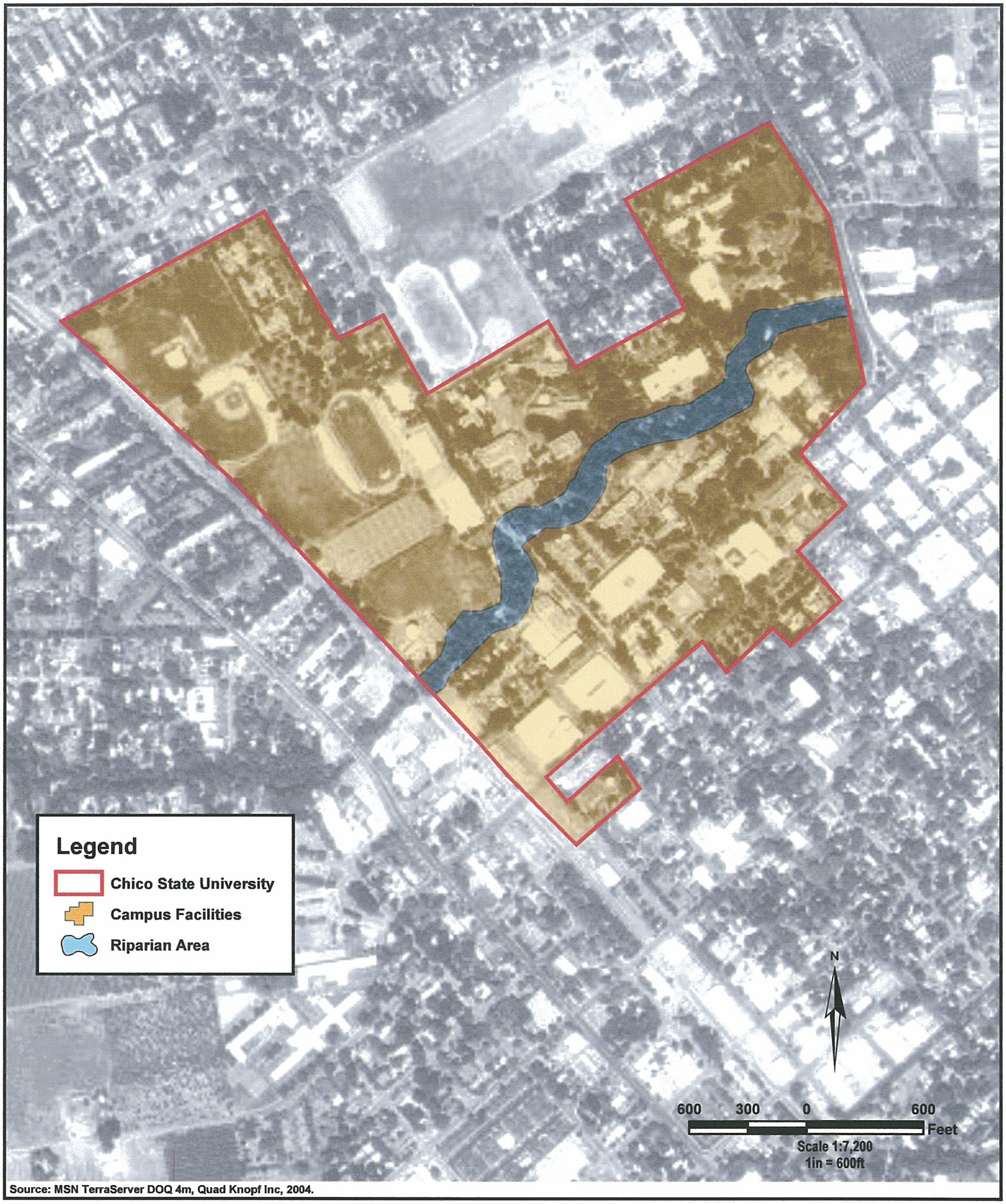
The portion of Butte County that contains the project area is located along the valley floor. The valley floor is composed of a limited number of plant communities due to the long history of agricultural and urban disturbance. The project area has five habitat types. These include riparian forest, aquatic, non-native grassland, agricultural land, and built land. Each of these habitats is described below.

Riparian Forest. Riparian areas occur along the banks or edges of rivers or creeks, and typically include tree species such as willows, maple, cottonwood, and alder, with an understory of shrubs and vines. Riparian areas provide cover and nesting habitat for a variety of birds. Riparian areas generally act as a movement corridor where many wildlife species migrate or disperse into other habitats to forage for food or to carry out a distinct part of their life cycle.

Riparian forests were once very common along smaller drainages, but are now limited to the major rivers. Due to higher fertility along many of the major rivers in the county, over time riparian forests have been reduced to a narrow corridor. It has been estimated that between 2 and 11 percent of the original riparian forest in the Central Valley is still in existence and approximately 50 percent of that is disturbed from past and/or existing land uses. The riparian forests that remain today support the majority of the natural biological resources, including the known special-status plants and animals that are located in the county.

Non-native Grassland. Non-native grassland occurs in a variety of areas in the Sacramento Valley. These areas are typically characterized by past disturbance, such as fire, grazing, tilling, etc. Plants that can commonly be found in non-native grasslands include mustards (Brassicaceae), filarees (*Erodium* spp.), clovers (*Trifolium* spp.), wild oats (*Avena* spp.), bromes (*Bromus* spp.), foxtail barley (*Hordeum murinum* spp.), ryegrass (*Lolium* spp.), common tarweed (*Hemizonia* spp., *Holocarpha* spp.), and fiddle-neck (*Amsinckia menziesii*) among others. This habitat is predominately located along the margins of fields and trails.

Agricultural Land. Agricultural land occurs in a large portion of the Sacramento Valley. These areas are typically characterized by continued ground disturbance, from tilling, harvesting, etc. Agricultural land varies from orchards, vineyards, and grain fields, which typically received



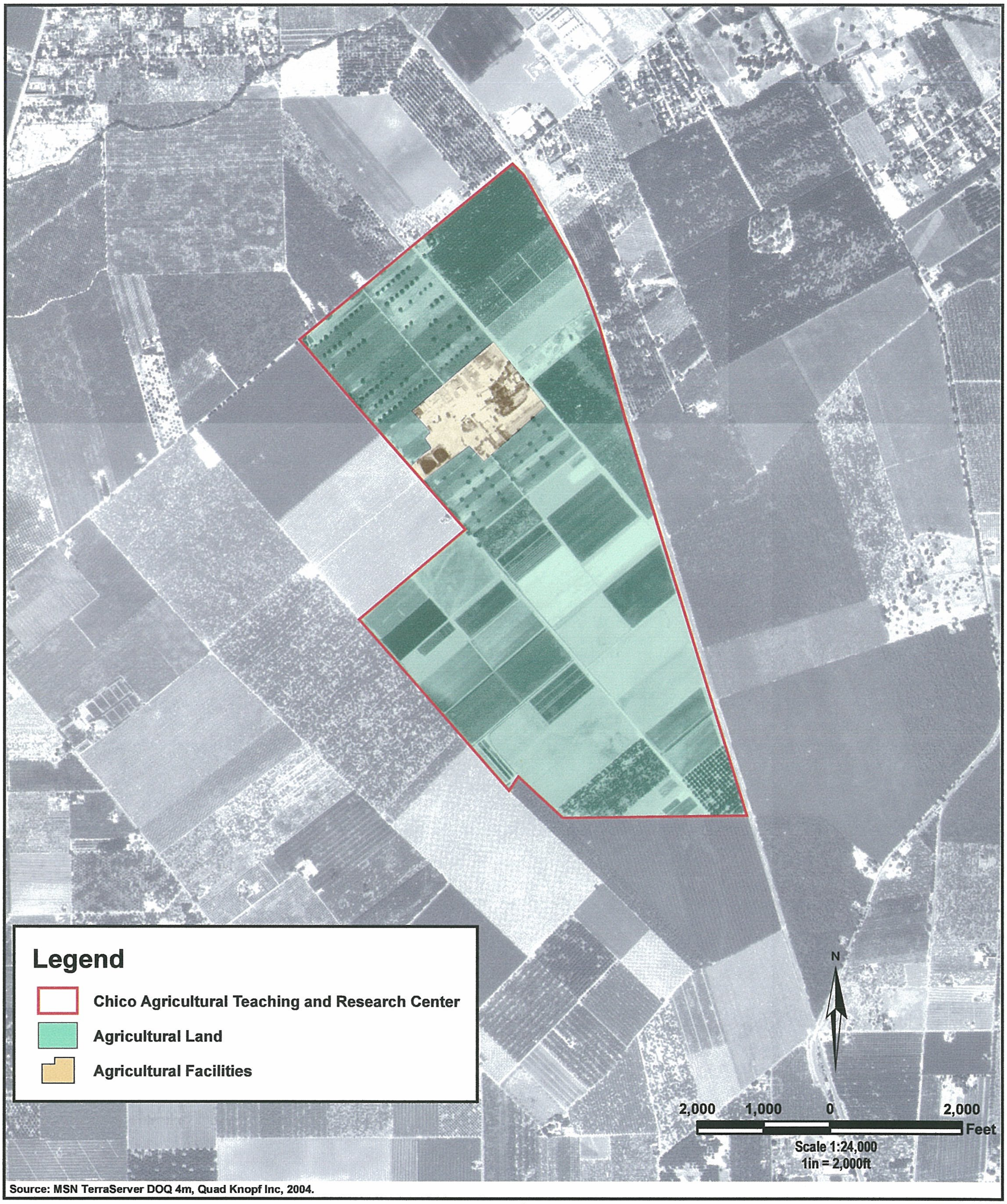
Source: MSN TerraServer DOQ 4m, Quad Knopf Inc, 2004.

Quad Knopf

MAIN CAMPUS HABITAT MAP

Figure 3.3-1

Job No.: 03496



Source: MSN TerraServer DOQ 4m, Quad Knopf Inc, 2004.

Quad Knopf

ATRC SITE
HABITAT MAP

Figure 3.3-2

Job No.: 03496

infrequent disturbance, to row crop, which is regularly disturbed. Crops are generally limited to the managed fields and non-native grasses typically occur along the margins of the fields.

Built. Built areas consist of structures, roads, and parking areas. Built areas may occur in urban areas as well as agricultural areas. The plant diversity in this type of habitat is low and is composed primarily of non-native grasses and other ruderal plants, as well as ornamental landscaping plants. Wildlife in the area is very limited as food sources are scarce. Wildlife that is commonly found in these areas is generally passing through rather than occupying the area.

Special-Status Species

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database. The background search was regional in scope and focused on the documented occurrences within the Chico, Ord Ferry, Richardson Springs, and Nord USGS 7.5 minute quad maps. The database search revealed 121 documented occurrences of 29 special-status species and seven natural communities within the regional vicinity of the project area. Of these documented occurrences, one is located within the ATRC site and none are located within the Main Campus. Table 3.3-1 provides a list of species that were documented in the region as well as the habitat that they occur in, the protective status and their potential to occur in the project area. Following the table is a brief description of each species. Figure 3.3-3 shows the location of each documented occurrence of these special status species.

Table 3.3-1
Documented Special Status Species

Species	Habitat	Status	Potential for Occurrence
Invertebrates			
Conservancy fairy shrimp (*Branchinecta conservation*)	Occurs in vernal pools.	FE	Not Present: Vernal pool habitat does not exist on the Main Campus or the ATRC site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	Occurs in vernal pools.	FT	Not Present: Vernal pool habitat does not exist on the Main Campus or the ATRC site.
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	Occurs in riparian areas that contain blue elderberry (*Sambucus mexicana*).	FT	Habitat for this species is present along Big Chico Creek on the Main Campus site. This species may occur on/in one or more of the host plant species *Sambucus mexicana*. Protocol level surveys are required if a 100-foot avoidance buffer can not be maintained.
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	Occurs in vernal pools.	FE	Not Present: Vernal pool habitat does not exist on the Main Campus or the ATRC site.

Species	**Habitat**	**Status**	**Potential for Occurrence**
California linderiella (*Linderiella occidentalis*)	Occurs in vernal pools.	FSC	Not Present: Vernal pool habitat does not exist on the Main Campus or the ATRC site.
Reptiles			
Western spadefoot (*Spea (=Scaphiopus) hammondii*)	Occurs primarily in grasslands, but can be found in valley foothill hardwood woodlands. Vernal pools are essential for breeding and egg laying.	CSC	Not Present: Vernal pool habitat does not exist on the Main Campus or the ATRC site.
Birds			
Tricolored Blackbird (*Agelaius tricolor*)	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	MBTA, CSC	Foraging habitat is located at the ATRC site. None were observed during the reconnaissance level survey.
Great egret (Ardea alba)	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	MBTA	Nesting and foraging habitat is located along the Big Chico Creek on the Main Campus site. None were observed during the reconnaissance level survey.
Great Blue Heron (*Ardea herdias*)	Rookery sites is close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	MBTA	Nesting and foraging habitat is located along the Big Chico Creek on the Main Campus site. None were observed during the reconnaissance level survey.
Burrowing Owl (*Athene cunicularia*)	Occurs in open, dry grasslands, deserts, and ruderal areas. Requires suitable burrows.	MBTA, CSC	The Main Campus does not contain the appropriate habitat. The ATRC site may contain habitat in fallow fields if ground squirrels colonize. During the reconnaissance level survey the fields appeared to be actively managed and ground squirrels were not observed.
Swainson's Hawk (*Buteo swainsoni*)	Forages in grasslands and certain agricultural fields; usually breeds in large trees along riparian areas.	MBTA, CT	Two nesting adults were observed in an English walnut orchard near the south end of the ATRC site in 1998. The reconnaissance survey for this study (2004) revealed that the walnut orchard has been converted into row crop. Much of the ATRC site and the surrounding lands offer appropriate foraging habitat for this species.
Western yellow-billed cuckoo (*Coccyzus americanus*	Nests along riparian forests of larger river systems. Nests are typically located in riparian	MBTA, FC, CE	Nesting and foraging habitat is located along the Big Chico Creek on the Main

Species	Habitat	Status	Potential for Occurrence
occidentalis)	jungles of willow often mixed with cottonwoods, with lower story blackberry, nettles, or wild grape.		Campus site. None were observed during the reconnaissance level survey.
Osprey (*Pandion haliaetus*)	Occurs on the ocean shore, bays, fresh-water lakes, and larger streams. Nests are built in tree tops within 15 miles of good fish-producing bodies of water.	MBTA, CSC	Marginal nesting and foraging habitat is located along the Big Chico Creek on the Main Campus site. None were observed during the reconnaissance level survey.
Bank swallow (*Riparia riparia*)	Nests in colonies primarily along riparian areas and other lowlands. Requires vertical banks/cliffs with fine/textured sandy soils near streams, rivers, lakes, or ocean to dig-nesting hole.	MBTA, FSC, CT	Marginal nesting and foraging habitat is located along the Big Chico Creek on the Main Campus site. None were observed during the reconnaissance level survey.
Fish			
Spring-run chinook salmon (*Oncorhynchus tshawytscha spring-run*)	Occurs in the Sacramento River and it's tributaries. Water temperature must be less than 27 degrees Celsius.	CT	Appropriate habitat present. This species is known to migrate up the Big Chico Creek to its spawning grounds.
Plants			
Ferris's milk-vetch (*Astragalus tener var. ferrisiae*)	Occurs in meadows and in valley and foothill grasslands. Oftentimes located on subalkaline flats on overflow land, usually in dry adobe soil.	1B	Appropriate habitat not present.
Fox sedge (*Carex vulpinoidea*)	Marshes and swamps, riparian woodlands.	2	Appropriate habitat present along the Big Chico Creek. Plant surveys for this species have not been conducted and are not warranted unless the individual project plans involve disturbance to the habitat along Big Chico Creek, which currently they do not.
Pink creamsacs (*Castilleja rubicundula ssp. rubicundula*)	Occurs in chaparral, meadows, and seeps, and valley and foothill grasslands, oftentimes on serpentine.	1B	Appropriate habitat not present.
Hoover's spurge (*Chamaesyce hooveri*)	Vernal pools.	FT, 1B	Appropriate habitat not present.

Species	Habitat	Status	Potential for Occurrence
White-stemmed clarkia (*Clarkia gracilis ssp. albicaulis*)	Occurs in chaparral and cismontane woodland, sometimes on serpentine. Endemic to Butte County.	1B	Appropriate habitat not present.
Butte County fritillary (*Fritillaria eastwoodiae*)	Occurs in chaparral, cismontane woodland, and lower montane coniferous forest, usually on dry slopes, but occasionally in wet areas. Soils vary from serpentine, red clay, or sandy loam.	3	Appropriate habitat not present.
Adobe-lily (*Fritillaria pluriflora*)	Occurs in chaparral, cismontane woodland, and foothill grassland, usually on clay soils, but sometimes on serpentine.	1B	Appropriate habitat not present.
Rose-mallow (*Hibiscus lasiocarpus*)	Occurs in marshes and freshwater swamps, often on soaked river banks and low peat islands, in sloughs.	2	Appropriate habitat present along the Big Chico Creek. Plant surveys for this species have not been conducted and are not warranted unless the individual project plans involve disturbance to the habitat along Big Chico Creek, which currently they do not.
Red Bluff dwarf rush (*Juncus leiospermus var. leiospermus*)	Occurs in chaparral, valley and foothill grassland, cismontane woodland, and vernal pools, usually on vernally mesic sites.	1B	Marginal habitat present along the Big Chico Creek. Plant surveys for this species have not been conducted and are not warranted unless the individual project plans involve disturbance to the habitat along Big Chico Creek, which currently they do not.
Butte County meadowfoam (*Limnanthes floccosa ssp. californica*)	Occurs near vernal pools, and valley and foothill grasslands, usually in wet or flowing drainages and depressions. Soils are usually Redding clay with rocks. Endemic to Butte County.	FE, CE, 1B	Appropriate habitat not present.
Ahart's paronychia (*Paronychia ahartii*)	Occurs in valley and foothill grassland, vernal pools, and cismontane woodlands, usually on stony, nearly barren clay swales and higher ground around vernal pools.	1B	Marginal habitat present along the Big Chico Creek. Plant surveys for this species have not been conducted and are not warranted unless the individual project plans involve disturbance to the habitat along Big Chico Creek, which currently they do not.

Species	Habitat	Status	Potential for Occurrence
California beaked-rush (*Rhynchospora californica*)	Occurs in bogs, fens, marshes, swamps, meadows, seeps, and lower montane coniferous forest.	1B	Marginal habitat present along the Big Chico Creek. Plant surveys for this species have not been conducted and are not warranted unless the individual project plans involve disturbance to the habitat along Big Chico Creek, which currently they do not.
Butte County checkerbloom (*Sidalcea robusta*)	Occurs in chaparral and cismontane woodlands, usually in small draws and rock crevices. Endemic to Butte County.	1B	Appropriate habitat not present.
Columbian watermeal (*Wolffia brasiliensis*)	Occurs in shallow freshwater marshes.	2	Marginal habitat present along the Big Chico Creek. Plant surveys for this species have not been conducted and are not warranted unless the individual project plans involve disturbance to the habitat along Big Chico Creek, which currently they do not.

Abbreviations:

FE	Federal Endangered Species
FT	Federal Threatened Species
FSC	Federal Species of Concern
MBTA	Species Protected under the Auspices of the Migratory Bird Treaty Act
CE	California Endangered Species
CT	California Threatened Species
CR	California Rare Species Afforded Protection under the Native Plant Protection Act
CSC	California Department of Fish and Game Species of Special Concern
1B	California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere.

Special Status Invertebrates

Conservancy fairy shrimp (*Branchinecta conservatio*) is federally listed as endangered. It is a small crustacean in the Branchinectidae family, ranging in size from ½ inch to one inch in length. This family is characterized by elongate bodies, no carapace, large stalked compound eyes, and eleven pairs of swimming legs, and the species inhabits rather large, cool-water vernal pools with moderately turbid water (Eriksen and Belk 1999). Although the historical distribution of this species is unknown, it is likely that this species once occupied suitable vernal pool habitats throughout the Central Valley and southern coastal regions of California.

Vernal pool fairy shrimp (*Branchinecta lynchi*) is federally listed as threatened. It is a small crustacean in the Branchinectidae family, also ranging in size from ½ inch to one inch in length. Elongate bodies, large stalked compound eyes, no carapace, and eleven pairs of swimming legs characterize the species. The vernal pool fairy shrimp occurs in a variety of vernal pool habitats, from small, clear sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It is most frequently found in pools in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands, measuring less than 0.05 acre. The vernal pool fairy shrimp is widespread but not abundant, with known populations extending from Stillwater Plain in Shasta County through most of the Central Valley to Pixley in Tulare County, and four additional distinct populations exist in San Luis Obispo, Santa Barbara, and Riverside Counties. Threats to this species include the continued loss of vernal pool habitat through conversion to agricultural and urban uses.

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is federally listed as threatened. Coloration of the beetle is variable; the first pair of wings may vary from dark metallic green, with a bright red-orange border to a pattern of four oblong metallic green spots. Females are larger than males, while males possess longer, more robust antennae than females. The antennae are nearly as long as the body, extending forward from the head, thus the "longhorn" designation. The life of the beetle is restricted to elderberry (*Sambucus* spp.). Eggs are deposited in cracks and crevasses of the bark of living elderberry trees. Presumably, the eggs hatch shortly after they are laid. The larvae bore into the pith of larger stems and roots. When the larvae are ready to pupate, they work their way up from the roots, through the pith of the elderberry, and open an emergence hole through the bark. The larvae then return to the pith to pupate. Adults emerge at about the same time the elderberry flowers. The entire life cycle encompasses two years. The loss of up to 90 percent of riparian habitat in California has severely decreased this species' range.

Vernal pool tadpole shrimp (*Lepidurus packardi*) is federally listed as endangered. It is a small crustacean in the Triopsidae family, which has compound eyes, a large shield-like carapace, and a pair of cercopods (appendages) at the end of the last abdominal segment. Adults reach a length of 2 inches and have 35 pairs of legs and two long cercopods. This species climbs or scrambles over objects, in addition to plowing along bottom sediments in search of organic debris and invertebrates, including fairy shrimp. Vernal pool tadpole shrimp occur in vernal pools with clear to highly turbid water and their life history is linked to the seasonal cycle of the vernal pool. This species is known from 18 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis Wildlife Refuge in Merced County, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in The City of Fremont, Alameda County.

California linderiella (*Linderiella occidentalis*) is a federal species of special concern. It is the only arthropod member of the fairy shrimp family Linderiellidae in North America. The California linderiella has horn-like, conical shaped antennal appendages with short median spines. This species inhabits ephemeral pools containing clear to tea-colored water. These pools are most commonly located in grass bottomed swales of unplowed grasslands in old alluvial soils underlain by hardpan, or in clear-water pools formed in sandstone depressions. All pools known to be inhabited by this species are filled by winter and spring rains and may last until June. The pools vary in size from 1 square meter (10.8 square feet) to the 40-hectare (99-acre) Boggs Lake in Lake County.

Special Status Reptiles

Western spadefoot toad (*Spea hammondii*) is a federal and state species of special concern. It is an amphibian in the family Pelobatidae. Spadefoot toads are distinguished from true toads (genus *Bufo*) by their cat-like eyes, single black sharp-edged "spades" on their hind feet, teeth in their upper jaws and rather smooth skin. Adults range in length from 1.5 to 2.5 inches. They are dusky green or gray above and often have four irregular light-colored stripes on their back, with the central pair of stripes sometimes distinguished by a dark, hourglass-shaped area. Skin tubercles are sometimes tipped with orange or are reddish in color, particularly among young individuals. The irises of western spadefoot toads' eyes are usually pale gold. Their abdomens are whitish without any markings.

Western spadefoot toads forage on insects, worms, grasshoppers, true bugs, moths, ground beetles, predaceous diving beetles, ladybird beetles, click beetles, flies, ants and earthworms. The call of western spadefoot toads is hoarse and snore-like, and lasts about one-half to one second.

Western spadefoot toads breed from January to May in temporary pools. Water temperature in these pools must be between 48° F and 86° F. Breeding calls are audible at great distances which serves to bring individuals together at suitable breeding sites.

Special Status Birds

Tricolored blackbird (*Agelaius tricolor*) is a state species of special concern. It is common locally throughout the Central Valley and in coastal districts from Sonoma County southward. The tricolored blackbird roosts in large flocks and breeds near fresh water, preferably in emergent wetland, with tall, dense cattails or tules, thickets of willow, blackberry, wild rose, and tall herbs. They forage on the ground in croplands, grassy fields, flooded land, and along edges of ponds looking for insects. Little is known about what threatens this species.

Great Egret (*Ardea alba*) is a federal species of concern. They have white plumage, a long thick yellow bill, and black legs and feet. They stand 32 inches tall and have a wingspan of 55 inches. Their main foods are fish, crabs, amphibians, and insects. Great egrets breed once a year and females lay three to four greenish blue eggs that hatch in three to four weeks. Their flimsy platform-like nests are built primarily of twigs and are located in trees (about seven feet, more or less, above the ground) or even on the ground. They are found throughout the United States.

Great blue heron (*Ardea herodias*) is a federal species of concern. They stand four feet tall and have a wingspan of six feet. The great blue heron is the largest of North American herons and egrets. They live along streams, ponds lakes, and road ditches throughout the state. Their nest is a crude platform of sticks in a bush or tree, usually in a colony with other herons. They lay three to five large blue eggs, which hatch in 28 days. Their young typically fledge the nest in two months. The great blue heron uses their sharp beak to spear fish before swallowing them whole. They also eat turtles, frogs, snakes, crawfish, lizards, and rodents.

Burrowing owl (*Athene cunicularia*) is a federal species of concern and state species of special concern. Their habitat consists of open, dry grassland, desert habitats, and in open shrub stages of pinyon juniper and ponderosa pine habitats. The burrowing owl uses rodent or other burrows for roosting and nesting. Breeding occurs from March through August with the peak in April and May. The burrowing owl feeds mostly on insects, small mammals, reptiles, birds, and carrion. Conversion of grassland to agriculture, development, and poisoning of ground squirrels has contributed to the reduction in numbers. Predators include prairie falcons, red-tailed hawks, northern harriers, golden eagles, foxes, coyotes, and domestic dogs and cats.

Swainson's hawk (*Buteo swainsoni*) is state listed as threatened. This species is distinguished from most other hawks by its long, narrow-pointed wings. The plumage is extremely variable and this raptor can be mistaken for other species. There are three main color variations: light, rufous, and dark, all of which have been observed in California. The adult female is typically slightly larger than the male weighing an average of 28 to 34 ounces, while males average about 25 to 31 ounces. Swainson's hawks forage for several small mammals and reptiles, but a large portion of its diet consists of insects, especially in the late summer and fall when they are migrating southward. This species requires large, open grasslands with abundant prey in association with suitable nest trees such as oaks, cottonwoods, walnuts, and willows in the Central Valley, and juniper in the Great Basin. Suitable hunting grounds include native grasslands or lightly grazed pastures, alfalfa and other hay crops and certain grain and row croplands. Croplands in which prey is scarce or difficult to acquire because of the density of vegetative cover, are unsuitable as hunting grounds. Examples include mature vineyards, orchards, rice, corn (prior to harvesting), and cotton crops. Swainson's hawk prey includes small mammals such as mice, gophers, ground squirrels, rabbits, and most commonly, voles. The Swainson's hawk will also feed on small birds, bats, and insects that it captures while in flight.

Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)* is state listed as endangered and is a federal species of concern. It is a long, slender bird distinguished by a long, curved bill with a yellow lower mandible. Wings are olive-brown above, white on the underside with bright rufous primary feathers and the outer tail feathers have large white spots. The preferred habitat is lowland riparian associations and scrub lands. Destruction of riparian habitat resulting from urban and agricultural development, and flood control and stream stabilization projects have been major factors leading to the decline of the species (Anderson and England 1987). Most of the habitat for this species has been extirpated and the lack of extensive stands of riparian vegetation is a severely limiting factor.

Osprey *(Pandion haliaetus)* is a federal and state species of special concern. It is a large bird of prey (22-24 inches), with a wingspan ranging from 58-72 inches. Their long wings have a characteristic bend at the carpel joints. They are bright white underneath, with dark brown patches at the carpal joints and a mottled dark brown necklace. They have a dark stripe through each eye, and a dark brown back. The feet of this species are pale blue-gray, and the beak is black. Juvenile ospreys resemble adults, but have a somewhat speckled appearance due to buff-colored tips on their dark brown upper-wing and back coverts and a less well-defined necklace. Juveniles also have an orange-red iris, rather than the yellow iris that is typical of adults. Juvenile plumage is replaced by adult plumage by 18 months of age. They live near lakes, rivers, and coastal areas, and tall trees or snags for nesting. Their diet is almost exclusively fish, including flounder, bullhead, and perch; occasionally, frogs, snakes, birds, and small mammals.

Bank swallow *(Riparia riparia)* is state listed as threatened. It is a small, brown-backed bird with a distinctive dark breastband. This species is found primarily in riparian and other lowland habitats in California west of the deserts. Bank swallows require vertical banks and cliffs with fine textured or sandy soils near streams, rivers, ponds, lakes, and the ocean for nesting. They forage by hawking insects during long gliding flights and feed predominantly over open riparian areas, but also over brushland, grassland, and cropland (Zeiner et al. 1990). Bank swallows are usually colonial breeders and breed from early May through July, with peak activity from mid-May to mid-June. Eggs and adults are preyed upon by rats, skunks, house cats, snakes, and some raptors. Channelization and stabilization of banks of nesting rivers, and other destruction and disturbance of nesting areas, are major factors causing decline in the species (Zeiner et al. 1990).

Nesting raptors/raptor nests are protected under the California Fish and Game Code. Raptors include all predatory birds, nests, and eggs. Compared to most other animal groups, raptors naturally exist at relatively low population levels and are widely dispersed within their habitats.

Waterfowl. Numerous water birds migrate through Butte County, which is part of the Pacific flyway, each year. The majority of these birds are not documented in the CNDDB, although these birds are known to occur at times in the regional vicinity of the Main Campus and the ATRC site, but mostly within or along the major waterways.

Special Status Fish

Spring-run Chinook salmon *(Oncorhynchus tshawytscha*) is federal and state listed as threatened. It is most widely referred to as king salmon in California, but Chinook salmon has been adopted as its official common name by the American Fisheries Society (Moyle 1976). Chinook salmon is by far the largest salmon weighing 30 or more pounds, it is identified by the conspicuous large black spots on its back, both caudal fin lobes, dorsal, and adipose fins and by its black gums on the lower jaw. Spawning adults are olive brown to dark maroon or purple in color. Spawning males usually develop a hooked jaw and a raised hump, and appear darker than the females. Spawning runs once occurred as far south as the Ventura River, but at present the southernmost run occurs in the Sacramento-San Joaquin River system. Spawning age varies from one to seven years. Spawning usually occurs in large streams with coarse gravelly riffles but may also occur in small tributaries to the larger streams (Moyle 1976). Most California Chinook salmon are fall spawners, and begin to initiate their spawning migration in late September, with the majority occurring in October and November, and an occasional run as late as December and January. Before the damming of many California rivers there were also winter and spring runs, but today these exist only in special habitat situations. Chinook that make the spring-run move upriver from December through February, and then they wait until May or June to spawn, producing eggs that hatch in late summer (McGinnis 1984). The Central Valley Evolutionarily Significant Unit (ESU) includes populations spawning in the Sacramento River and its tributaries. Fish and Wildlife Service has designated critical habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California effective on March 17, 2000, which included the ESU in Central Valley (FR 50 7764). However, the critical habitat designation has been rescinded for this ESU effective April 30, 2002.

Special Status Plants

Ferris's milk vetch (*Astragalus tener var. ferrisiae*) is a CNPS list 1B plant. It is an annual herb of the Fabaceae family that grows in meadows and valley and foothill grasslands on subalkaline flats. This species typically blooms between April and May.

Fox sedge (*Carex vulpinoidea*) is a CNPS list 2 plant. It is a perennial herb in the Cyperaceae family that grows in marshes and swamps and riparian woodlands. This species typically blooms in June.

Pink creamsacs *(Castilleja rubicundula ssp. rubicundula)* is a CNPS list 1B plants. It is an annual herb of the Scrophulariaceae family that grows in chaparral, meadows and seeps, and valley and foothill grasslands oftentimes on serpentine soil. This species typically blooms between April and June.

Hoover's spurge (*Chamaesyce hooveri*) is federally listed as threatened and a CNPS list 1B plant. It is an annual herb of the Euphorbiaceae family that grows in vernal pools. This species typically blooms in July.

White-stemmed clarkia (*Clarkia gracilis ssp. albicaulis*) is a CNPS list 1B plant. It is an annual herb of the Onagaraceae family that grows in chaparral and cismontane woodland, sometimes on serpentine soil. This species typically blooms between May and July.

Butte County fritillary (*Fritillaria eastwoodiae*) is a CNPS list 3 plant. It is a perennial herb (bulbiferous) of the Liliaceae family that grows in chaparral, cismontane woodland, and lower montane conifer forests. This species typically blooms between March and May.

Adobe-lily (*Fritillaria pluriflora*) is a CNPS list 1B plant. It is a perennial herb (bulbiferous) of the Liliaceae family that grows in chaparral, cismontane woodland, and valley and foothill grasslands. This species typically blooms between February and April.

Rose-mallow (*Hibiscus lasiocarpus*) is a CNPS list 2 plant. It is a perennial herb (rhizomatous, emergent) of the Malvaceae family that grows in freshwater marshes and swamps. This species typically blooms between August and September.

Red Bluff dwarf rush (*Juncus leiospermus var. leiospermus*) is a CNPS list 1B plant. It is an annual herb of the Juncaceae family that grows in chaparral, cismontane woodland, and valley and foothill grasslands that are vernally mesic. This species typically blooms between March and May.

Butte County meadowfoam (*Limnanthes floccosa ssp. californica*) is a federal and state listed endangered species and is a CNPS list 1B plant. It is an annual herb of the Limnanthaceae family that grows in valley and foothill grasslands and vernal pools. This species typically blooms between March and May.

Ahart's paronychia (*Paronychia ahartii*) is a CNPS list 1B plant. It is an annual herb of the Caryophyllaceae family that grows in cismontane woodlands, valley and foothill grasslands, and vernal pools. This species typically blooms between April and June.

California beaked-rush (*Rhynchospora californica*) is a CNPS list 1B plant. It is a perennial herb (rhizomatous) of the Cyperaceae family that grows in lower conifer forests, meadows, and freshwater marshes and swamps. This species typically blooms between May and July.

Columbian watermeal (*Wolffia brasiliensis*) is a CNPS list 2 plant. It is of the Lemnaceae family that grows in shallow freshwater marshes. This species typically blooms between May and July.

Vegetation

Butte County contains several major vegetation associations, which support a diverse array of plant and animal species. Figure 3.3-3 shows the major vegetation associations within the Chico, Ord Ferry, Richardson Springs, and Nord USGS 7.5 minute quad maps. Below are descriptions of the vegetation associations and predominant species within each association.

Coastal and Valley Freshwater Marsh. This plant community is dominated by perennial, emergent monocots up to five meters tall that often times form a completely closed canopy. Two dominant plants are bulrushes and cattails.

Great Valley Cottonwood Riparian Forest. This plant community is composed of a dense, broadleafed, winter-deciduous riparian forest dominated by Fremont’s cottonwood and black willow. The understory is dense, with abundant vegetative reproduction of canopy dominants. Scattered seedlings and saplings of shade-tolerant species such as box elder and Oregon ash may be found, but frequent flooding prevents their reaching into the canopy.

Great Valley Mixed Riparian Forest. This is a tall, dense, winter-deciduous, broadleafed riparian forest. The tree canopy is usually fairly well closed and moderately to densely stocked with several species including box elder, black walnut, western sycamore, Fremont’s cottonwood, black willow, red willow, and pacific willow. The understory consists of these same taxa plus shade-tolerant shrubs like button bush and Oregon ash.

Great Valley Oak Riparian Forest. The highest elevational element of the riparian complex, this community intergrades with typically upland communities at the margins of the floodplain. This community is composed of medium-to-tall broadleafed, winter deciduous species and is dominated by the valley oak. Associated understory vegetation includes sycamore, Oregon ash, Hind's walnut, California rose, wild grape, poison oak, blackberry, and greenbriar.

Great Valley Willow Scrub. An open to dense, broadleafed, winter deciduous streamside thicket community. Dense stands have little understory and are dominated by Pacific willow, arroyo willow, sandbar willow, black willow, wild grape, and shrub-sized Fremont cottonwood. In open thickets, grass understories can develop. This community is generally situated in the lowest flood plain elevations and is subjected to considerable scour during flood stages that impairs the succession to woodland.

Northern Hardpan Vernal Pool. These vernal pools are found on old, acidic, iron-silica cemented soils. Typical vegetation includes brook spike-primrose, annual hairgrass, double-horn downingia, cuspidate downingia, flat-face downingia, inch-high rush, Fremont's goldfield, white meadowfoam, northern mudwort, white-head navarretia, paintbrush owl's-clover, Sacramento mesamint, dwarf wholly-heads, corn speedwell, slender popcorn flower, and coast popcorn flower.

Northern Volcanic Mud Flow Vernal Pool. This community is a very low, open mixture of amphibious annual herbs and grasses. Growth begins following fall rains and continues even while plants are submerged until the standing water is evaporated in spring. Plant growth is abruptly terminated by warm spring weather. Pools typically are small, covering under 50 square meters.

Regulatory Setting

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a "take" unless a take permit is issued by the U.S. Fish and Wildlife Service (USFWS). A take is defined as the killing, capturing, or harassing of a species. Proposed endangered or threatened species are those species for which a proposed regulation, but not final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, posses, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., § 703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Clean Water Act – Section 404

Section 404 of the Clean Water Act (CWA) regulates all discharges of dredged or fill material into water of the United States. The United States Army Corps of Engineers is the agency responsible for administering the permit process for activities that affect waters of the United States. Executive Order 11990 is a federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the Clean Water Act (CWA) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Regional Water Quality Control Board. To obtain the water quality certification the Regional Water Quality Control Board must indicate that the proposed fill would be consistent with the standards set forth by the state.

California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

The CESA expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency (i.e. USFWS or CDFG).

Fish and Game Code § 3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Game Code, all predatory birds in California, generally called “raptors,” are protected. The law indicates that it is unlawful to take, posses, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Game Code § 1601-1603 – Streambed Alteration

Under the California Fish and Game Code, the Department of Fish and Game (CDFG) has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project developers must obtain a “Streambed Alteration Agreement” from the CDFG prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFG may impose conditions to limit and fully mitigate impacts on fish and wildlife resources.

Jurisdictional Waters

Areas meeting the regulatory definition of "Waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The USACE under provisions of Section 404 of the Clean Water Act (1972), has jurisdiction over "Waters of the U.S.” These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U. S.", tributaries of waters otherwise defined as "Waters of the U.S.", the territorial seas, and wetlands adjacent to "Waters of the U.S.” (33 CFR, Part 328, Section 328.3).

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

3.3.2 IMPACT AND MITIGATION MEASURES

Impact Evaluation Criteria

Based on the significance criteria contained in Appendix G of the CEQA Guidelines, a project may have a significant adverse impact on the environment if it will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Initial Study determined that the proposed Campus Master Plan 2004 would not conflict with local policies or ordinances protecting biological resources or conflict with the provisions of an adopted conservation plan. These impacts are not further discussed in this EIR.

Impact #3.3-1: Direct or indirect effects on species, identified as a candidate, sensitive, special-status species, or migratory, including their habitat, or movement corridors (Main Campus).

Discussion/Conclusion: There are numerous special status species and sensitive habitat for these special status species that are documented within the regional vicinity of the Main Campus; however, none are documented on the Main Campus. The Main Campus is predominately built and lacks habitat for special status species, with the exception of Big Chico Creek and the riparian corridor along the creek. The riparian habitat along the creek contains numerous blue elderberry plants, which are the host plant for the federally threatened valley elderberry longhorn beetle. Protocol level surveys in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999) were not conducted to determine the presence of the species along Big Chico Creek because the proposed project does not indicate that there is any development within the Big Chico Creek. All development along the Big Chico Creek is expected to be within the existing building footprints. However, detailed project plans including setbacks and buffers for each of the projects located along the Big Chico Creek have not yet been prepared; therefore a definitive conclusion of the potential for disturbance can not be made at this time with the available information. This is considered a ***potentially significant*** impact.

Mitigation Measures

Implementation of the following mitigation measures would reduce the impact to a ***less than significant*** level.

Mitigation Measure #3.3-1a:

The individual project plans for all projects located along Big Chico Creek shall contain a permanent 100-foot, or greater, avoidance buffer to separate the individual project from Big Chico Creek. If a permanent 100-foot buffer is determined infeasible, the project proponent shall conduct protocol level surveys consistent with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999). If presence of this species is determined, a permanent 25-foot buffer shall be maintained and a qualified biologist shall coordinate with the USFWS for a determination of not likely to adversely affect. If the 25-foot avoidance buffer is determined to be infeasible, the project proponent shall obtain the appropriate take permit from the USFWS prior to any construction (Section 7 or Section 10 of the Endangered Species Act).

Mitigation Measure #3.3-lb:

Approximately 30 days prior to commencement of each individual development within the project area, a qualified biologist shall conduct wildlife reconnaissance level surveys along the Big Chico Creek or in the vicinity of the ATRC to determine the presence or absence of special-status animals, including nesting raptors. If special-status animals are found during the surveys, the biologist shall coordinate with the appropriate agency to formulate an appropriate mitigation measure and/or to obtain permits if necessary. The results of the survey shall be documented in a report.

Impact #3.3-2: Direct or indirect effects on species, identified as a candidate, sensitive, special-status species, or migratory, including their habitat, or movement corridors (ATRC site).

Discussion/Conclusion: The ATRC site has one documented occurrence of a special status species. In 1998 a pair of nesting Swainson's hawks were observed in an English walnut tree in the north outer row of an orchard located near the south end of the ATRC site. During the reconnaissance level survey conducted in October 2004 it was noted that the walnut orchard at the southern end of the ATRC site had been removed and converted into row crop. Most of the ATRC site may serve as foraging habitat for the Swainson's hawk, if any are living in the vicinity. There are numerous other un-surveyed orchards in the vicinity of the ATRC site that could contain Swainson's hawk nests, although orchards are generally not considered optimal nesting habitat because frequent agricultural operations can disturb nesting activities. The development proposed at the ATRC site is within the area that has already been developed. Many of the projects are rehabilitation and upgrading of the facilities, while there are a few new facilities proposed. None of the projects pose a significant risk to any candidate, sensitive, special status, or migratory species, including their habitat, or movement corridors.

Mitigation Measures

Implementation of a previously identified mitigation measure (Mitigation Measure #3.3-1b) would ensure that the impacts to significant biological resources are reduced to a ***less than significant*** level.

Impact #3.3-3: Adverse effects on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Discussion and Conclusion: The Big Chico Creek bisects the Main Campus site. Several proposed individual projects on the Main Campus are located in the vicinity of the Big Chico Creek. Those projects include the following: Aquatic Center, PE Pool (one of the potential replacement sites), Siskiyou II, Butte Hall, Regional/Continuing Education facility, and Selvester's Café. Of these individual projects the following are rehabilitation, upgrade, or retrofit projects and are not expected in require any ground disturbance: Butte Hall, Siskiyou II, and the Regional/Continuing Education facility. The other three projects (Aquatic Center, PE Pool, and the Selvester's Café expansion) are not expected to require disturbance to the Big Chico Creek and/or the habitat that is associated with the waterway. However, detailed plans of these individual projects have not been developed; therefore a definitive conclusion can not be made. This is a ***potentially significant*** impact.

Mitigation Measures

Implementation of the following mitigation measure would reduce the impact to a ***less than significant*** level.

Mitigation Measure #3.3-3:

Individual project plans for all projects located along Big Chico Creek shall be reviewed by a qualified biologist to determine if the plans pose the potential for disturbance to protected wetlands and/or waterways. If it is determined that the project plans do pose a risk of disturbance to wetlands and/or waterways then the project proponent shall coordinate with the US Army Corp of Engineers and the California Department of Fish and Game to obtain the appropriate permits and/or agreements (i.e. Section 401 and 404 permit, and Streambed Alteration Agreement).

3.4 CULTURAL RESOURCES

INTRODUCTION

The following cultural resources analysis evaluates whether cultural resources exist in areas that could be adversely affected by the adoption of the Campus Master Plan 2004. The significance of any potentially affected resources is assessed, and measures are proposed to mitigate potential adverse impacts that could result from adoption of the new Master Plan.

Cultural resources are defined as prehistoric and historic archeological sites, architectural properties (e.g. buildings, bridges, and structures), and traditional properties with significance to Native Americans. This definition includes historic properties as defined by the National Historic Preservation Act (NHPA).

3.4.1 SETTING

Cultural History

The Plan area lies within the ethnographically known Konkow territory. The Konkow, the neighboring Maidu to the east, and the Nisenan to the south all spoke Maiduan languages belonging to the Penutian superstock. Within the Konkow language, several dialects were spoken. The distribution of these dialectical groups was, in part, along the lower part of the Feather River Canyon, extending up to about the Rich Bar area. Others of the related groups held the Middle and South Fork Feather River drainages, extending westward onto the Sacramento Valley floor, immediately adjoining the lower foothill courses of these streams (Kroeber 1925:392;Riddell 1978:370).

Above the Central Valley and the gently-sloped lower Sierran foothills, the rivers have incised deep narrow canyons that are, at times, nearly inaccessible. By preference, the Konkow settlements were situated on ridges overlooking the rivers. Generally, selection was preferential towards ridge crest flats or midslope terraces (Dixon 1905:175).

The settlement pattern of the Konkow crossed multiple topographic and corresponding vegetation zones. It is unlikely that any one village had access to more than one or two biotic zones, but the cumulative territorial holdings included the Montane Forest, Montane Chaparral, Riparian Woodland, Valley and Foothill Woodland Chaparral and Valley Grassland (Ornduff 1974). Within each plant community were food resources for exploitation, and these include those faunal members associated with the biotic zones. The pattern of "village communities" (Kroeber 1925:398) constituted the only political organization. A community was comprised of several geographically-related villages with one maintaining a large semi-subterranean ceremonial lodge (Riddell 1978:373). This larger lodge may also have been the dwelling of the headman, who was the more authoritative person in the community. The headman acted only as a spokesman and advisor to the people and apparently lacked magisterial powers. Each village community held a known territory in which all community members had hunting and fishing rights. The Konkow had less well-defined territorial boundaries than did the Maidu (Kroeber 1925:398;Riddell 1978:373).

The Konkow followed a seasonal pattern of transhumance, leaving the winter villages to travel higher into the mountains during the late spring and summer. Hunting of the migrating deer was the major occupation in these seasons. The Indians exploited a wide array of wild vegetable foods that included pine nuts, seeds, roots, berries, greens and bulbs. The acorn provided the dietary staple as it did for most California Indian groups. The nuts of three species -- black oak, golden oak and interior live oak -- were preferred above all others (Riddell 1978:374). The acorn was processed after gathering by hulling and then grinding the nut meats into flour or meal. Where bedrock was exposed, pits were ground into the flat rock faces. Through the use of elongate cobbles or cylindrical-shaped pestles, the nuts were reduced by pounding in the mortar pits. This arduous task was only the beginning of the task of preparing acorns into an edible commodity. Following the grinding of the nutmeats, the meal required leaching by water to remove the bitter tannin. The slow addition of increasing warmer water was done in shallow depressions in sand. This water process was repeated until the tannin was gone. The dough was either cooked with water to make soup or mush. Bread was also made by baking the dough under hot stones (Riddell 1978:374).

The largest game animal that was hunted for its meat was the deer. Smaller mammals were not excluded as protein sources, although wolf, dog and coyotes were not eaten. Fishing produced salmon, trout, steelhead, eels and other rough fish.

The Konkow practiced hunting, gathering and fishing subsistence strategies. Their intimate knowledge of the flora and fauna ensured a well-developed exploitation of their territorial environs (Riddell 1978:373).

There were three dwellings constructed by the people, with use of these types related to the season. Winter structures were of two kinds: a semi-subterranean earth-covered lodge and a smaller, conical, bark slab dwelling. The summer houses were informal, wall-less shades constructed of upright poles supporting a roof of branches and leaves.

Trade was well developed in an interlocking system, with neighboring groups such as the Maidu, Achumawi and Wintuans. The exchange system brought desired goods into the Konkow groups while they supplied food stuffs, hides, arrows and bows to their trading partners (Riddell 1978:380;Kroeber 1925).

Acculturation Period

The Konkow were almost decimated in 1833 by an epidemic of what may have been malaria (Cook 1955:322). In 1849, the onslaught of the gold miners completed the destruction of the Konkow lifeway. The miners penetrated to the most remote corners of the Konkow and Maidu lands with a consequent near total population displacement. The environmental balance was distorted by the whites, and the primary food sources were no longer easily available to the Indians. As a result, the starving Native Americans were forced to kill domestic livestock in order to survive. The white community responded in an often excessive manner and many innocent Indians were killed. In 1863, the forced relocation of many surviving Indians to Round Valley Reservation brought the hostilities under control. By 1870, the Indian resistance was virtually over (Riddell 1978:385).

The native communities in the Chico area were somewhat more fortunate, thanks largely to John Bidwell, who had employed many native Konkow in his gold mining operations at nearby Bidwell Bar, shortly after the discovery of gold at Coloma. The Mechoopda band of Konkow returned with Bidwell to his new residence at Rancho Chico where they were employed as laborers. The Mechoopda lived adjacent to Bidwell's home (cabin, adobe structure, and finally mansion) until being relocated to a nearby area so that they would have more room (and due to all-night cry ceremonies behind the mansion that were disturbing to Bidwell's new wife, Annie). It is uncertain as to whether the "Indian village" shown on a map drawn by Bidwell in 1867 pre or post-dated Bidwell's arrival in the area (White in White et al. 2002:4). In general, thanks to Bidwell's protection and employment, the Mechoopda were spared the forced relocation to the Round Valley Reservation in 1863 and continued to practice many traditional cultural lifeways well into the 20th century.

History

Among the initial penetrations of the upper Sacramento Valley region by Europeans was that of the Spanish explorer Gabriel Moraga, who in 1808, explored the lower reaches of Feather River, perhaps as far north as Sutter Buttes. In 1820, Captain Luis Arguello led an expedition into the foothills east of Oroville, and gave the Feather River its name (Fariss and Smith 1882:144-145). By 1828, and throughout the next two decades, Hudson's Bay Company and American Fur Company trappers were active within the region (Wells and Chambers 1973:128).

In 1844, Mexican Governor Manuel Micheltorena issued several land grants within northern California, including portions of what would later become Butte County. Peter Lassen was awarded a grant on Deer Creek, part of which extended into northern Butte County. That same year, Edward A. Farwell and Thomas Fallon settled on the Farwell grant, the eastern boundary of which cuts through present-day Chico, and Samuel Neal occupied the Esquon Grant, encompassing the modern hamlets of Durham and Nelson. In 1847, grantee John Bidwell settled on his famous estate in Chico. Neal and Bidwell in particular were instrumental in establishing the agricultural and livestock industries in the county, and they both made important gold discoveries as well (McGie 1982:35-37; Talbitzer 1987:21-24; Wells and Chambers 1973:128-129).

Butte County was incorporated on February 18, 1850 by an act of the newly commissioned state legislature. The original Butte County embraced all of present-day Butte and Plumas Counties along with portions of Lassen, Tehama, Sutter, and Colusa Counties (Wells and Chambers 1973:131). By 1853, when farms and settlements began to appear in some of the county's more remote regions, it became evident that the area was too large for the Butte County government to meet growing demands for roads, schools, law and order. Thus, beginning with Plumas County on March 18, 1854, areas within the original Butte County configuration began to be incorporated as separate counties (Fariss and Smith 1882:156-157).

During the late 1840s and early 1850s, Bidwell established the Chico area as an agricultural, transportation, and commercial center. As early as 1847, Bidwell maintained experimental orchards and fields, and a flour mill and fruit-drying plant were soon built. Stage lines passed through Chico, connecting Marysville and the Shasta area. Bidwell opened a hotel to accommodate travelers. By

1851, the first post office was established under Postmaster A.H. Barbar. A court had already been founded, and Chico became a voting precinct in 1852. By 1859, a school was established in the town (McGie 1982:35; Talbitzer 1987:40-41, 60).

By 1860, the future City of Chico was thriving. Bidwell had purchased John Potter's ranch, a part of the Farwell Grant, and had a surveyor produce a plat of the town. Bidwell laid out plans for the town's future streets, and gave free homesites to persons wishing to settle along those streets. About 500 people inhabited the town as of 1860. The town's growth was aided by commerce with the mining camps and towns to the east (McGie 1982:35; Talbitzer 1987:63, 66).

Agriculture and livestock raising along with mining in outlying communities continued to sustain Chico through the final decades of the last century. The California and Oregon railroad, which arrived in 1870, provided another economic boost to Chico, and facilitated the growth of the logging and lumbering industry in the nearby mountains. By 1872, the year in which the Town of Chico was incorporated, Chico boasted several lumberyards and sawmills, and hundreds of people in the vicinity were employed in the industry. Flumes were eventually constructed to transport logs from the mountains directly to the mills of Chico (Talbitzer 1987:67-70).

One of the major developments in the cultural and economic history of Chico was the decision by the state legislature in 1887 to erect a "normal school" in Chico to train elementary school teachers. Chico Normal School accepted its first students for the fall term of 1889. Over the succeeding decades, the school has evolved into California State University, Chico.

Resource Investigation

A review of records maintained by the North Central Information Center of the California Historical Resources Information System was conducted by center staff on May 22, 2003 for a proposed Telecommunications Infrastructure Initiative project. The results of this 2003 record search were still valid as of November 2004 (Amy Huburland, Assistant Coordinator, Northeast Center, personal communication 2004). According to this review, two previously identified prehistoric period resources, CA-BUT-295 and CA-BUT-574 were recorded within the 119 acre CSU Chico campus area. CA-BUT-295 is the undocumented “Indian Village” shown on a hand drawn sketch map drawn by John Bidwell in a letter dated 1867. CA-BUT-574 is the site of the former Chico Rancheria of Mechoopda.

The two-story Patrick Ranch house, also known as the Patrick Home, is located near the 95 acre ATRC core area, and is listed on the National Register of Historic Places. A prehistoric period village site, CA-BUT-1, also located near the 95 acre ATRC core area, is also separately listed on the National Register.

No recorded historic period archeological sites have been identified within the 119 acre CSU Chico campus or 95 acre ATRC core area. According to the Northeast Center, the Old Chico State College Library, constructed in 1933 and located within the CSU Chico campus area, has been identified as eligible to the National Register of Historic Places (NRHP). The Administration Building, located at 1 Normal Avenue and Auditorium/Assembly Building, located a 1 Salem Street have also been identified as appearing eligible for listing in the NRHP. Indeed, the entire Chico State College,….Appears eligible as a contributor to a fully documented National Register District….", (Northeast Center record search #H03-15, dated May 22, 2003, Appendix C).

The Bidwell Mansion, located directly adjacent to the 119 acre CSU Chico campus is listed on the National Register of Historic Places and on the California Inventory of Historic Resources and as a California Historical Landmark. Rancho Chico and the Bidwell Adobe are listed in the California Inventory of Historic Resources and as California Historical Landmarks.

Previous archeological studies within the 119 acre CSU Chico campus area have been limited to one archeological test excavation conducted to evaluate whether cultural material was present prior to the development of student housing (Scientific Resource Surveys, Inc. 1981). Two investigations concerning the locations of former structures associated with Bidwell Mansion have occurred within the Bidwell Mansion State Historic Park (Johnson 1988; White, et al 2002). No record of any formal archeological inspection of either the 119 acre CSU Chico campus, or the 95 acre ATRC core area, is on file at the Northeast Information Center.

Field Survey

The 95-acre ATRC core area is inhabited by a number of post 1963-era buildings and structures that have been constructed by the University. There are also numerous pens and enclosures, and two water-retention ponds, located within the core area. Surface visibility was generally good throughout the core area, with only limited expanses of landscaped areas or pastures with thick vegetative cover. According to Mr. Cole, portions of the 95-acre core area were raised in elevation with the importation of fill material (J. Mark Cole, personal communication, 2004). This importation of fill material was particularly noticeable along the eastern margin of the core area, where orchard crops located east of the roadway were obviously one to two feet lower in elevation than the core area of the ATRC.

Aside from the recognized "campus historic core" of the University (Ac Martin Partners, Inc. 2003: Figure 1.14), and the Albert E. Warren Reception Center (former Daniel H. Moulton residence, constructed in 1923), there are four additional major campus buildings constructed prior to 1959 (Ac Martin Partners, Inc. 2003: Figure 1.31). One of these buildings, the Aymer Jay Hamilton Building, was constructed in 1949, and is now 55 years old and should be evaluated for eligibility to the California Register as a cultural resource before it is modified or demolished. Siskiyou Hall, built in 1957, will also become eligible for consideration as a cultural resource in three years time.

During the investigation of the CSU Chico campus, one area containing historic period isolated artifacts was identified near Alumni Glen, Holt Hall, and Albert E. Warren Reception Center. Two fragments of an aqua-colored glass bottle (canning jar?), and two fragments of a white-glaze ceramic cup were discovered in association with other more modern appearing glass and plate glass fragments in an area with darkened sediment. These isolated artifacts may be associated with a larger deposit that is obscured by vegetation and fill. The isolated historic period fragments may represent the remains of refuse deposited behind the Albert E. Warren Memorial Center (former Daniel H. Moulton residence), before it was sold to Chico State

University in 1945. They are also located in the general area where the "Indian Village" (CA-BUT-295) is believed to be located, but are probably too modern to be associated with this site.

3.4.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. Historical resources may include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archeologically significant or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California. When a project will impact an archeological site, it needs to be determined whether the site is an historical resource, which is defined as any site which:

(A) Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and

(B) Meets any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Criteria used in determining whether project-related land use impacts are significant are consistent with standard industry practice and consideration of Appendix G of the State CEQA Guidelines. An impact is determined to be significant if it:

- Causes a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

- Causes a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

- Directly or indirectly destroys a unique paleontological resource or site or unique geologic feature.

- Disturbs any human remains, including those interred outside of formal cemeteries.

Site analysis indicates that there are no unique geologic features present on either the main campus or the ATRC site and there will be no impact on unique geologic features as a result of adoption of the Campus Master Plan 2004.

Impact #3.4-I: Disturbance of archaeological or historical resources as a result of improvements identified for the Agriculture Teaching and Research facility.

Discussion/Conclusion: An examination of the 95-acre ATRC core area was undertaken on November 24, 2004. Two historic period resources were identified during the inspection. The first is the old blacksmith shop that was originally associated with the nearby Patrick Ranch (J. Mark Cole, personal communication, 2004). It is shown on a copy of the 1948 USGS topographic quadrangle. The structure is proposed to be relocated to the Patrick Ranch in a cooperative effort between CSU, Chico and the Chico Museum Association, owner of the Patrick Ranch (J. Mark Cole, personal communication, 2004).

The residence at the Patrick Ranch is listed on the National Register of Historic Places due to its architectural merits, but other buildings, activities, or individuals associated with the ranch complex are not included in the listing.

Architecturally, the blacksmith shop is not an outstanding example. It lacks decorative elements that would distinguish the structure, and short of a flue feature in the interior, would not be obvious concerning its previous function. In terms of integrity, the interior has been sided with face-board and a false ceiling has been added, likely after its use as a blacksmith shop. None of the tools, or a forge, associated with blacksmithing, are present in the structure. The setting of the blacksmith shop has been significantly altered with the construction of the post-1963 ATRC facilities that surround the shop. The blacksmith shop does not appear to be an eligible historic resource under the California Register.

The second resource consists of a single-story residence located at 15 Nicholas C. Schouten Lane that is currently unoccupied. It is slated to be demolished and removed eventually (J. Mark Cole, personal communication, 2004). Although the residence does not appear on the 1948 era USGS topographic quadrangle, it is architecturally a Minimal Traditional Style residence that were typically constructed between 1935 and 1950 (McAlester and McAlester 1996:478). Its construction likely dates to before 1954 and therefore was recorded as a cultural resource.

The single-story, Minimal Traditional Style residence may also have been associated with the nearby Patrick Ranch, or former owners of the ATRC core area before the state acquired the property in 1963. It is not a particularly early or outstanding example of this common architectural style of residential construction that occurred primarily between 1935 and 1950. It was not constructed before 1948, according to the USGS topographic quadrangle.

The integrity of the residence is also compromised by what appears to have been a later addition to the residence along the east side. Differing roof profiles, and exposed, as opposed to closed eaves, distinguish this later-appearing addition that was probably added after the original residence was constructed. The setting of the residence has also been negatively affected by the surrounding ATRC Core Area development. The residence does not appear to be an eligible historic resource under the California Register.

With the exception of the historic period structures located within the CSU Chico Campus area, there are no known properties eligible for or listed on the California Register of Historical Resources within the 95 acre ATRC Core area.

The surface inspection of the area conducted by Peak & Associates in association with the Chico Master Plan 2004 should not be construed to imply that such eligible properties do not exist. The 800 acre ATRC, including the 95 acre core area, also has a moderate potential to contain eligible cultural resources beneath the ground surface that are not readily observable. This impact is considered ***potentially significant.***

Mitigation Measures

Implementation of the following mitigation measures will reduce potential impacts to a ***less than significant level.***

Mitigation Measure #3.4-1a:

Prior to any proposed activity that will result in the excavation of sub-surface sediment within the 800 acre ATRC, the Research Archaeology Program, a CSU Chico Foundation supported program, and the Mechoopda Indian Tribe should be consulted prior to the commencement of ground disturbing activities.

Mitigation Measure #3.4-1b:

During any future excavation of sub-surface sediment within the 95-acre ATRC core area, an archeological monitor should be present to observe this activity. Given the strong possibility that such undocumented resources may be related to the occupation and use of the area by the Mechoopda Indian Tribe, a representative tribal monitor should also be present to act as a liaison to the Mechoopda Indian Tribe and also to act as a "most likely descendant" should Native American internments be unearthed during construction activities.

Mitigation Measure #3.4-1c:

Prior to the demolition, or alteration, of any building or structure greater than 45 years in age within the 95-acre ATRC, a qualified architectural historian and historian be retained to evaluate the potential significance of these resources.

Impact #3.4-2: Disturbance of archaeological or historical resources as a result of improvements identified for the main CSU Chico campus.

Discussion/Conclusion: The four fragments of historic period artifacts are most likely associated with the occupation of the nearby residence (Albert E. Warrens Reception Center), when the structure was owned and occupied by Daniel H. Moulton and his wife Flora (1923-1945). It was not uncommon during the early part of the 20th century to process and dispose of some waste material within the confines of one's property. These isolated artifacts were also associated with more modern appearing glass and at least one plate glass fragment, and may also represent imported fill material.

Due to vegetative cover, and the presence of paved walkways, it was impossible to ascertain, with complete certainty, whether or not an intact deposit of historic period material exists in this area. Given the previous development of the area (Alumni Glen, and nearby Holt Hall), an intact deposit of historic period artifacts would seem unlikely. Even if an intact deposit did exist beneath the vegetation and modern ground surface, it would only be eligible to the California Register as an historic property if it could be shown to have been associated with a significant person or event, or possess qualities such as its ability to yield information important in history.

The four isolated historic period artifacts do not appear to be eligible historic resources under the California Register.

With the exception of the historic period structures located within the CSU Chico Campus area, there are no known properties eligible for or listed on the California Register of Historical Resources within the proposed CSU Chico Campus. There are historic structures in the land acquisition areas and these are proposed for relocation in the Master Plan. Since it is unknown whether these structures have the physical integrity to withstand a move and whether there are feasible "receiver sites" the impact of the proposed land acquisition on historical resources is not known at this time.

The surface inspection of the area conducted by Peak & Associates in association with the Chico Master Plan 2004 should not, however, be construed to imply that such eligible properties do not exist. Indeed, there is a substantial amount of documentary evidence to indicate that there is a high likelihood that such potentially eligible resources do indeed exist, but are not readily observable on the ground surface, within the 119 acre CSU Chico campus area. This impact is considered ***significant and unavoidable.***

Mitigation Measures

Implementation of the following mitigation measures will reduce potential impacts, but not to a less than significant level. Impacts related to the potential demolition or loss of historical structures remain ***significant and unavoidable.***

Mitigation Measure #3.4-2a:

Prior to any proposed activity that will result in the excavation of sub-surface sediment within the 119 acre CSU Chico campus area, the Research Archaeology Program, a CSU Chico Foundation supported program, and the Mechoopda Indian Tribe should be consulted prior to the commencement of ground disturbing activities.

Mitigation Measure #3.4-2b:

During any future excavation of sub-surface sediment within the 119 acre CSU Chico campus area, an archeological monitor should be present to observe this activity. Given the strong possibility that such undocumented resources may be related to the occupation and use of the area by the Mechoopda Indian Tribe, a representative tribal monitor should also be present to act as a liaison to the Mechoopda Indian Tribe and also to act as a "most likely descendant" should Native American internments be unearthed during construction activities.

Mitigation Measure #3.4-2c:

Prior to the demolition, or alteration, of any building or structure greater than 45 years in age within the 119 acre CSU Chico campus area or one of the land acquisition areas, a qualified architectural historian and historian should be retained to evaluate the potential significance of these resources.

Impact #3.4-3: Disturbance of unique paleontological resources as a result of improvements identified for the main CSU Chico campus or the ATRC.

Discussion/Conclusion: Since the areas proposed for development in the Campus Master Plan 2004 are already disturbed and developed sites, there is also a very low potential to destroy any unique paleontological resource. The adoption of the Master Plan will have a ***less than significant*** impact on unique paleontological resources.

Mitigation Measures

No mitigation measures are required.

3.5 GEOLOGY AND SOILS

3.5.1 SETTING

Soils

The project site is located in the Sacramento Valley, within the northern portion of the Great Valley Geomorphic Province of California. Formation of the valley occurred by tectonic shifting of the Sierran Block; the western side dropping to form the valley and the eastern side being uplifted to form the Sierra Nevada. The valley has been filled with a relatively thick deposit of heterogeneous marine and lacustrine sediments, and surficial alluvial materials derived from erosion of the adjacent Sierra Nevada to the east and the Coast Ranges to the west. The sedimentary rocks are mainly Cretaceous. The depth of the sediments varies from a thin veneer at the edges of the valley to depths in excess of 50,000 feet.

The Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California (Helley and Harwood, 1985: 1:62,500) indicates that the near-surface deposits in the vicinity of the campus consist of the upper member of the Modesto Formation. These deposits generally consist of fine-grained sand, silt and clay derived from the same sources of modern alluvium. The thickness of the basin deposits ranges from a few feet along the valley perimeter to as much as 200 feet in the center of the valley.

The Chico area, including the campus, is characterized by two major soils associations: Vina-Farwell and Honcut, according to U.S.D.A. Soil Conservation Service Report and General Soil Map for Butte County.

Vina-Farwell Association. The Vina-Farwell association soils have developed in nearly level flood plains of recent alluvium of mainly basic origin. They are medium to moderately fine texture, very deep, and well-drained. Permeability is moderate to slow.

Honcut Association. The soils of the Honcut association occur in nearly level flood plains or on alluvial terraces bordering streams. They are moderately course textured recent alluvial deposits of mixed origin that are very deep, gravelly in places, and well-drained. Erosion is slight and is confined to streambanks. Permeability is moderate to rapid.

The soils maps prepared for the area do not actually portray the existing conditions on the campus because of the alterations which have taken place to the grounds over the years. Soils tests are normally performed by project architects or engineers as part of the design process for any new University facility.

Faults and Seismicity

According to the City of Chico General Plan (1999), the area is one of the least active seismic regions in California (Classified by the state as Seismic Hazard Zone 3).

The seismic hazard most likely to impact the site is groundshaking due to a large earthquake on one of the major active regional faults. The Foothills Fault Zone is the nearest active fault to the site and is located approximately 3 miles east of the project site. The Great Valley, Battle Creek, and Bartlett Springs Fault Zones are located approximately 24, 49, and 59 miles from the site, respectively. Because of the proximity to the campus and the maximum probable events for these faults, it appears that a maximum probable event along these fault zones could produce a peak horizontal acceleration of approximately 0.16g (DBE-design basis earthquake) and 0.19 (UBE-upper bound earthquake) at the project site.

The purpose of the Alquist-Priolo Geologic Hazards Zones Act, as provided in DMG Special Publication 42 (SP 42), is to "prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." Review of current Fault-Rupture Hazard Zone mapping indicates that the campus is not within a Fault-Rupture Hazard Zone. The nearest mapped Fault-Rupture Hazard Zones are located approximately 70 miles from the site and are associated with the Dunnigan Hills Fault Zone.

The California Seismic Hazard Mapping Act (1990) requires that the State Geologist delineate various seismic hazards zones on Seismic Hazards Zones Maps. The maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. The campus is not included on any of the Seismic Hazard Zone Maps released to date.

The nearest known active fault is the Cleveland Hill fault, 26 miles southeast of the campus. Several other unnamed faults are located in the Chico vicinity. The Chico area does not have a history of major or severe seismic activity. According to the Butte County Seismic Safety Element:

> Butte County and the surrounding area are located on the western portion of a faulted and downwarped series of ancient metamorphic rocks of the Western Sierra Nevada Mountain Range. Granitic rocks associated with Mesozoic thrust faulting are located in the eastern portion of the County. In the western portion of the County, gently folded younger and sometimes faulted sediments of the Sacramento Valley overlie older metamorphic rocks similar to those of the Sierra Nevada. The stratigraphic and structural trend of metamorphic rocks is generally northward with steeply dipping bedding in most places. The formations and geologic structure of the County appear to be controlled or strongly modified by Cenozoic faults extending along the western portion of the Sierra Nevada Mountains and trending north-northwest along with the Big Bend, Camel Peak, Dogwood Peak, Rich Bar, and Melones faults, most of which lie to the north and east of Butte County in the area of granitic intrusions (see Map II-1). Most Sierra Nevada faults are a combination of strike slip and thrust movements. (Bailey, *Geology of Northern California*, California Division of Mines and Geology.)
>
> Movement on the Cleveland Hill fault on 1 August, 1975 was apparently the result of crustal strain developed in the Foothill Shear Zone. The Cleveland Hill fault, located about 6 miles southeast of Oroville, trends north-northwest and is

> approximately 10 miles long. It is presently the only known active fault within Butte County. (Sherburne and Hauge, *Oroville, California Earthquake, 1 August, 1975*, California Division of Mines and Geology.)
>
> In the northwest corner of Butte County near Chico there are a series of short, north-northwest trending faults similar to the Cleveland Hill fault. These faults appear to be an extension of the Bear Mountain Fault or Foothills Shear Zone…Minor seismic activity has occurred in the area of these short faults; however, other geologic evidence indicates these faults are not active.

The policies of the Butte County Seismic Safety Element states that all known seismic information should be taken into account in making land use decisions, and that schools should not be located in known active fault areas. All new proposed projects are required to be built under the seismic requirements of the Uniform Building Code. The University conducts studies and ground motion analysis as part of the design process for new facilities in accordance with State law. Building plans must be approved by the Division of the State Architect for compliance with handicapped law. The plans are also reviewed by the Seismic Peer Review Board and Wildan Associates (an independent plan checking agency).

3.5.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Consistent with Appendix G of the CEQA Guidelines, a project is considered to have a significant effect on the environment if it will expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;

- Strong seismic ground shaking;

- Seismic-related ground failure, including liquefaction;

- Landslides;

- Result in substantial soil erosion or the loss of topsoil;

- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse;

- Be located on expansive soil as defined in Table 18-1B of the Uniform Building Code (1994) creating substantial risks to life or property;

The California Health and Safety Code requires that buildings be designed to resist stresses developed by earthquakes. Accepted seismic design criteria are presented in the Uniform Building Code, Chapter 23.

Impact #3.5-1: Rupture of a known earthquake fault.

Discussion/Conclusion: The CSU Chico Campus is located in an area of low of surface rupture or fault-related surface disturbance at the site or through a review of aerial photographs. The State has not designated any Alquist-Priolo Special Studies Zones within the Planning Area, nor are there any known or inferred active faults. The impact is ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Impact #3.5-2: Strong seismic ground shaking resulting in seismic ground failure, including liquefaction.

Discussion/Conclusion: The seismic hazard most likely to impact the site is groundshaking due to a large earthquake on one of the major active regional faults.

Liquefaction is a process whereby water in unconsolidated sand and other granular materials is subjected to pressure usually caused by ground motion. Since fluids are not compressible and granular materials are, especially when shaken, the water seeks release. As water moves out of materials such as sand it causes the granular material to flow and lose strength. Such materials, in effect, behave as a quicksand. The ground literally flows out from under the buildings. Earthquake shaking is the major cause of liquefaction and has resulted in extensive severe damage in other areas. Potential for damage from liquefaction is low in the City of Chico.

The University conducts studies and ground motion analysis as part of the design process for new facilities in accordance with State law. All building plans must be approved by the Division of the State Architect (DSA) for compliance with handicapped law. The plans are also reviewed by the Seismic Peer Review Board and Wildan Associates (an independent plan checking agency). This impact is ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Impact #3.5-3: Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill.

Discussion/Conclusion: The main campus and the Agricultural Teaching and Resource Center are located on sites where the topography is generally flat so minimal changes in topography would result; however, erosion and/or unstable soil conditions could occur as a result of future project implementation under the CSU Chico Master Plan 2004. This is a ***potentially-significant impact.***

Mitigation Measure

Implementation of the following mitigation measure will reduce potential impacts to a ***less-than-significant*** level.

Mitigation Measure #3.5-3:

Future development projects that may occur as a result of implementation of the CSU Chico Campus Master Plan 2004 shall comply with Best Management Practices. Examples of Best Management Practices include, but are not limited to the following:

- *Placing fiber rolls around onsite drain inlets to prevent sediment and construction-related debris from entering inlets.*

- *Placing fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site.*

- *Placing silt fences downgradient of disturbed areas to slow down runoff and retain sediment.*

- *Specifying that all disturbed soil will be seeded, mulched, or otherwise protected by October 15th.*

- *Stabilizing construction entrance to reduce the tracking of mud and dirt onto public roads by construction vehicles.*

- *Applying hydraulic mulch that temporarily protects exposed soil from erosion by raindrop impact or wind.*

3.6 HAZARDS AND HAZARDOUS MATERIALS

3.6.1 SETTING

The adoption of the Campus Master Plan 2004 will not directly result in the use or disposal of any hazardous materials. The main campus is not included in any list of hazardous materials sites.

Materials routinely used at the ATRC facility include pesticides, seed, and fertilizers. Currently, the ATRC lacks a pesticide storage facility that meets current Safe Drinking Water and Toxic Enforcement Act (Proposition 65) standards.

3.6.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Based on consideration of Appendix G of the State CEQA Guidelines, the project is considered to have an adverse impact related to contaminated sites if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

- Reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

- Located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or environment.

- Result in a safety hazard related to a private airport available for public use for people residing or working in the project area.

Impact #3.6-1: A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation).

Discussion/Conclusion: The adoption of the Campus Master Plan 2004 will not directly result in the use or disposal of any hazardous materials. The adoption of the Plan will not result in any hazardous emissions or hazardous materials or waste. Construction, landscaping, and use of facilities that may result through implementation of the Campus Master Plan 2004 could possibly require relatively small quantities of hazardous materials, consisting primarily of landscaping chemicals and cleaning agents. Hazardous materials that could be used for landscaping purposes include pesticides, some fertilizers, and herbicides. These chemicals are regulated by federal and State agencies, and would be stored and handled per regulatory requirements.

Construction activities will involve the use of petroleum-based fuels for maintenance and construction equipment, which would be transported to the site periodically by vehicle and would be present on the site for short periods of time. None of these materials would be stored on the site. All hazardous materials would be used, stored, and transported according to applicable federal, state and University requirements. The project is not included on any federal, state, or local list of hazardous materials sites, and would not create a significant hazard to the public or the environment. Therefore, impacts associated with the transport, use, or disposal of hazardous materials, the release of hazardous materials into the environment, and the possibility of hazardous emissions into the environment near existing or proposed schools is considered less than significant.

Improvements at the ATRC facility include a new pesticide seed and fertilizer building. Currently, the ATRC lacks a pesticide storage facility that meets current Safe Drinking Water and Toxic Enforcement Act (Proposition 65) standards. The Campus Master Plan 2004 calls for replacement of the existing pesticide building, relocation to a more suitable site, and consolidation of the seed and fertilizer storage into the same facility. These improvements are designed to bring the facility into compliance with current regulations and best practices related to on-farm chemical use. This component of the Campus Master Plan 2004 is a ***potentially-significant*** impact.

Mitigation Measure

Implementation of the following mitigation measure will reduce the impact to a level of ***less than significant.***

Mitigation Measure #3.6-1:

Improvements to the ATRC facility related to the new pesticide and fertilizer building shall meet all the requirements of the Safe Drinking Water and Toxic Enforcement Act (Proposition 65) standards and shall adhere to best practices as related to on-farm chemical use.

Impact #3.6-2: Possible interference with an emergency response plan or emergency evacuation plan.

Discussion/Conclusion: The project consists of the adoption of the Campus Master Plan 2004 for the CSU Chico campus. Alternative routes for emergency access or evacuation exist in the vicinity of the campus and the adoption of the Plan would not create an obstacle to any evacuation plan or emergency vehicle access. The Plan proposes closure of three street segments in the southern portion of the campus. These changes are not anticipated to interfere with any emergency response plan or emergency evacuation plan; however, this issue should be further studied at the time a proposal to close the streets is submitted. This impact is ***potentially significant.***

Mitigation Measure

Implementation of the following mitigation measure will reduce the impact to a level of ***less than significant.***

> **Mitigation Measure #3.6-2:**
>
> *Prior to closure of any of the three street segments, a plan should be developed that will ensure that there will be no interference with an emergency response plan or emergency evacuation plan.*

Impact #3.6-3: Exposure of people to existing sources of potential health hazards.

Discussion/Conclusion: The adoption of the Campus Master Plan 2004 will not expose people to potential hazards, since the project is the adoption of a plan document for future improvements to the University. There are no known potential health hazards existing on the main campus facility or at the Agriculture Teaching and Research Center. This impact is ***less than significant.***

Mitigation Measure

No mitigation measures are required.

Impact #3.6-4: Result in a safety hazard related to a private airport available for public use for people residing or working in the project area.

Discussion/Conclusion: There is a privately-owned airport, Ranchero Airport, located approximately one mile to the west of the campus. The airport is available for public use. The project involves the adoption of a Campus Master Plan 2004 for an already existing campus in an urban area. The adoption of the Master Plan will not result in exposing people to a safety hazard. This impact is ***less than significant.***

Mitigation Measure

No mitigation measures are required.

3.7 HYDROLOGY AND WATER QUALITY

INTRODUCTION

The analyses in this Section, and the Setting description pertinent to those analyses, will be directed towards the hydrology and water quality impacts pertinent to the implementation of the Campus Master Plan 2004 and the operation of the facilities to be constructed in conformance with that plan. It will, in accord with that direction, emphasize the hydrology and water quality potential impact areas described in the Initial Study for the proposed project.

The impact analyses on the main campus and the ATRC site are treated separately within this Section of the EIR.

3.7.1 SETTING

Main Campus

As an urban campus surrounded by the City of Chico, hydrology and water quality impacts are closely tied to and largely governed by its setting within the urban community and its relationships to the City of Chico's policies affecting facilities (storm drainage, flood control, and wastewater collection and treatment) serving the campus. The exception to this general characterization is the provision of water supply to the campus and the City and distribution by California Water Service Company, a private utility.

The main campus is essentially flat; its existing 119 acres is bisected by Big Chico Creek which traverses the campus in a generally east-west alignment and serves as the endpoint for the campus/City storm drainage system. Groundwater is as shallow as 10 feet below ground surface in some areas, especially near Big Chico Creek. The campus is not located in a 100-year flood area, except for the 11-acre no-build riparian area along Big Chico Creek.

Agricultural Teaching and Research Center (ATRC)

This 95-acre core area facility, located south of and outside the Chico urban area on an 800-acre site, contains both animal husbandry units and plant science and administrative facilities. Little of the core area is hardscaped, except for the buildings and parking areas. Onsite waste disposal is through septic/leach field systems and animal waste lagoons. The core area is not located in a 100-year flood zone; the site is essentially level; groundwater is estimated to be between 59 and 111 feet below ground surface depending on the season. Groundwater quality is reportedly excellent, without nitrate problems.

3.7.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Pertinent criteria for evaluation of hydrology and water quality impacts, excerpted from Appendix G of the CEQA Guidelines, were used as the basis for discerning significance. Impacts related to water quality and hydrology are considered significant if the project would:

a) Violate any water quality standards or waste discharge requirements

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

f) Otherwise substantially degrade water quality

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam

j) Inundation by seiche, tsunami, or mudflow

Impact #3.7-I: Violation of water quality standards or degradation of water quality: [Criteria (a) and (f)].

Discussion/Conclusion: Main Campus: Wastewater from all campus structures and facilities will be directed to the City of Chico's wastewater collection, treatment, and disposal system. The

City of Chico will require peak sewer flow measurements prior to any construction to assure that the operation of constructed facilities will not overload collection sewers, and sewer replacement or supplementation if potential capacity problems are evidenced by such measurement. The City's wastewater treatment and disposal facilities are in compliance with discharge requirements; the City and the University have existing agreements assuring appropriate University participation in needed capital costs and in operating costs for City facilities.

Detention or other pretreatment facilities for all storm drainage runoff prior to creek discharge are required by both the City and the Regional Water Quality Control Board, mitigating the degradation of water quality from storm runoff. Implementation of the proposed project on the Main Campus would not violate water quality standards and would have a ***less-than-significant*** impact on water quality.

ATRC Site: Existing septic tank/leach facilities complying with County regulations must be constructed in conjunction with master-planned new facilities generating domestic wastewater. The master plan proposes to replace existing animal waste lagoons with lagoons, anaerobic digestion and aerobic composting of solid manures. These facilities, constructed in compliance with Regional Water Quality regulations, will mitigate the impacts of animal waste disposal. Implementation of the proposed project at the ATRC site would not violate water quality standards and would have a ***less-than-significant*** impact on water quality.

Mitigation Measure

No mitigation measures are required.

Impact #3.7-2: Depletion of groundwater supplies or substantial interference with groundwater recharge: [Criteria (b)].

Discussion/Conclusion: Main Campus: The master plan proposes to provide facilities to serve an increase of 2,900 AY FTES full time equivalent students (from 15,000 to 17,900). Water supply to the campus and the City is by California Water Service Company's network of wells providing service to approximately 125,000 people. The projected increase in demand, less than 2 percent, is considered de minimus (incrementally small). The Company foresees no difficulty in supplying water to the increased full time equivalent student enrollment of 17,900.

The proposed campus facilities will occupy an estimated net eight acres of additional hardscape, but runoff is to the same watershed. There will be no interference with groundwater recharge to the basin from which the City/University water supply is pumped. Implementation of the proposed project at the Main Campus would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge, and therefore would result in a ***less-than-significant*** impact.

ATRC Site: The proposed facilities, including, for example, modern dairy design with recirculation water usage, will not significantly increase the water usage on the 800-acre site (water supply is from onsite wells). The proposed additional hardscaping (roads, buildings) is de minimus in relation to the ATRC site's 800-acre footprint. Implementation of the proposed project at the ATRC site would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge, and therefore would result in a ***less-than-significant*** impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.7-3: Drainage pattern alteration; runoff increase creating flooding or polluted runoff: [Criteria (c), (d), and (e)].

Discussion/Conclusion: Main Campus: Existing drainage patterns will not be altered by the proposed project. Project-induced runoff increases will be mitigated by the City's existing requirements that onsite retention facilities be provided which provide for no net increase in runoff rate, and are sized and designed to mitigate oil, grease and sediment contamination for the runoff from a half-inch of rainfall over the entire building site. The same regulations (see Impact #3.8.1) mitigate the deposition or addition of runoff pollutants to the drainage terminating waterway. Implementation of the proposed project at the ATRC site would not cause substantial drainage pattern alteration or runoff increases that cause flooding or water pollution, and therefore would result in a ***less-than-significant*** impact.

ATRC Site: The proposed improvements involve no conceivable significant drainage pattern alteration, runoff increase, or potential for runoff pollution. Implementation of the proposed project at the ATRC site would not cause substantial drainage pattern alteration or runoff increases that cause flooding or water pollution; therefore it would result in a ***less-than-significant*** impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.7-4: Flood hazard impacts on housing; project impedance of or redirection of 100-year flood hazard flows: [Criteria (g) and (h)].

Discussion/Conclusion: Main Campus: No housing or other structures will be placed or are allowed by law to be placed, in the Big Chico Creek natural area which occupies the Creek's designated 100-year flood hazard waterway. Implementation of the proposed project at the Main Campus would not create flood hazard impacts, and would not impede or redirect 100-year flows; therefore it would result in a ***less-than-significant*** impact.

ATRC Site: The proposed facilities do not occupy a 100-year flood hazard area. Implementation of the proposed project at the ATRC site would not create flood hazard impacts, and would not impede or redirect 100-year flows; therefore it would result in a ***less-than-significant*** impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.7-5: Dam failure impacts: [Criteria (i)]

Discussion/Conclusion: Main Campus and ATRC Site: Neither the main campus nor the ATRC site is located within the inundation area of an upstream dam; therefore implementation of the proposed project would have ***no impact*** from dam failure.

Mitigation Measures

No mitigation measures are required.

Impact #3.7-6: Seiche, tsunami or mudflow impacts: [Criteria (j)]

Discussion/Conclusion: Main Campus and ATRC Site: Both the main campus and the ATRC site are located on and near flat topography remote from major water bodies, thus precluding any potential for these impacts; therefore implementation of the proposed project would have ***no impact*** from seiche, tsunami, or mudflows.

Mitigation Measures

No mitigation measures are required.

3.8 LAND USE

3.8.1 SETTING

The CSU Chico main campus is located on 119 acres of land located north and west of the City of Chico's downtown. Land uses in the core campus consist of classrooms, laboratories, the library, and faculty/staff administrative offices. Two clusters of student housing are located north of the core campus and the other west of Warner Street. Student and campus support functions are located along West Second Street on the south end of the campus. Riparian vegetation-lined Big Chico Creek, which winds its way through the central portion of the campus property in a generally east-west direction, makes up approximately 16 acres of open space. Recreation-oriented open space and athletic facilities are located primarily in the northwest section of the campus.

The Agricultural Teaching and Research Center (ATRC) is located on Hegan Lane about 2 miles south of the main campus. It includes approximately 800 acres of diversified irrigated crop land and 250 acres of rangeland. The ATRC also includes a greenhouse, confined animal facilities, and support facilities.

The *City of Chico General Plan* designates most of the CSU Chico main campus as "Public Services and Facilities" with a designation of "Creekside Greenways" for Big Chico Creek and its riparian corridor. The "Public Services and Facilities" designation includes sites for schools, governmental offices, airport, and other facilities that have "a unique public character and typically require at least two acres of land." The main campus is zoned "Secondary Open Space" (OS-2). OS-2 zoning district is consistent with the Public Facilities and Services land use classification of the General Plan. The Big Chico Creek corridor is zoned "Primary Open Space" (OS1). The OS1 zoning district is applied to areas appropriate for permanent protection as open space because of environmental resources or potential hazards, which includes creekways, and riparian corridors. The OS1 zoning district is consistent with the "Creekside Greenways" land use classifications of the General Plan.

The ATRC is located just outside the southern city limits of Chico. It is designated in the Butte County General Plan as "Orchard and Field Crops," 5-acre minimum parcel size. Primary uses are crop cultivation, harvest, sale, and storage. Secondary uses include animal husbandry, resource extraction and processing. Consistent zones include A-20 through A-160, and the site is zoned agricultural, 20-acre minimum (A-20).

Surrounding Land Uses

All properties surrounding the main campus have been built upon and have become part of the larger Chico urban fabric. The "Downtown Chico" historic district abuts the south end of campus. The campus is bounded on the southeast by the Union Pacific rail line and is adjacent to Chico High School to the north. Esplanade, a major thoroughfare, runs along the northwest edge of the campus with a small strip of light manufacturing/warehouses on the opposite side of Esplanade. General Plan land use designations adjacent to or in the vicinity of the main campus include "Offices," "Community Commerical," "Low Density Residential," "Medium Density

Residential," and "High Density Residential." The ATRC is surrounded by agricultural land cultivated as either orchards or row crops. Scattered rural residences also exist in the vicinity of the site. Surrounding land use designations and zoning are "Orchard and Field Crops" and "A-20", respectively.

3.8.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Based upon common standards of land use compatibility, and on consideration of Appendix G of the State CEQA Guidelines, the proposed project is considered to have a significant land use impact if it will:

- Physically divide an established community;

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the Chico General Plan or Butte County General Plan) adopted for the purpose of avoiding or mitigating an environmental effect;

- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impact #3.8-1: Physically divide an established community.

The Campus Master Plan 2004 identifies improvements that will take place on existing sites, including the main campus in downtown Chico and the ATRC south of Chico. These sites have long been integrated into the fabric of the surrounding area. Therefore, the project will not divide an established community and this impact is considered ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Impact #3.8-2: Land use conflicts between the proposed project and existing and planned land uses in the vicinity of the project site.

The City of Chico's General Plan and Zoning Ordinance allows the types of uses that are currently taking place on the main campus. The agricultural activities taking place at ATRC are consistent with Butte County's General Plan and Zoning Ordinance. The proposed Campus Master Plan 2004 calls for improvements to existing facilities and construction of some new facilities that would support existing activities. The Campus master Plan 2004 improvements do not involve changes in land uses that would conflict with land uses or policies adopted for mitigating environmental effects. Therefore, this impact is considered ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Impact #3.8-3: Conflict with any applicable habitat conservation plan or natural community conservation plan.

Discussion and Conclusion: The City of Chico General Plan designates the creek corridor as a Resource Conservation Area and the creek is located within Bidwell Park, a 3,670-acre City-owned park, extending along the creek from the west boundary of the campus easterly for approximately eleven miles. An estimated 12 acres of Bidwell Park (a corridor 3,500 feet long with an average width of 150 feet) is within and managed by campus resources. Development that could occur as a result of the proposed Campus Master Plan 2004 will adhere to all policies and programs affecting the Resource Conservation Area, and thus will not conflict with the Resource Conservation Area plans. This impact is therefore considered ***less than significant.***

Mitigation Measure

No mitigation measures are required.

3.9 NOISE

INTRODUCTION

This section discusses the existing noise environment in the immediate project vicinity, and identifies potential impacts and mitigation measures related to the California State University Chico (CSUC) Master Plan and the Paul L. Byrne Memorial Agriculture Teaching and Research Center (ATRC) Master Plan Developments. Specifically, this section analyzes potential noise impacts due to development of the projects identified in the Campus Master Plan 2004 in comparison to applicable noise criteria and to the existing ambient noise environments.

3.9.1 SETTING

Acoustical Terminology

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and hence are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content; however, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by the A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The Day-night Average Level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Existing Noise Environment in the Project Vicinity

CSU Chico Main Campus. The CSUC Main Campus Master Plan project area noise environment is defined primarily by roadway traffic on local streets and general college campus activities.

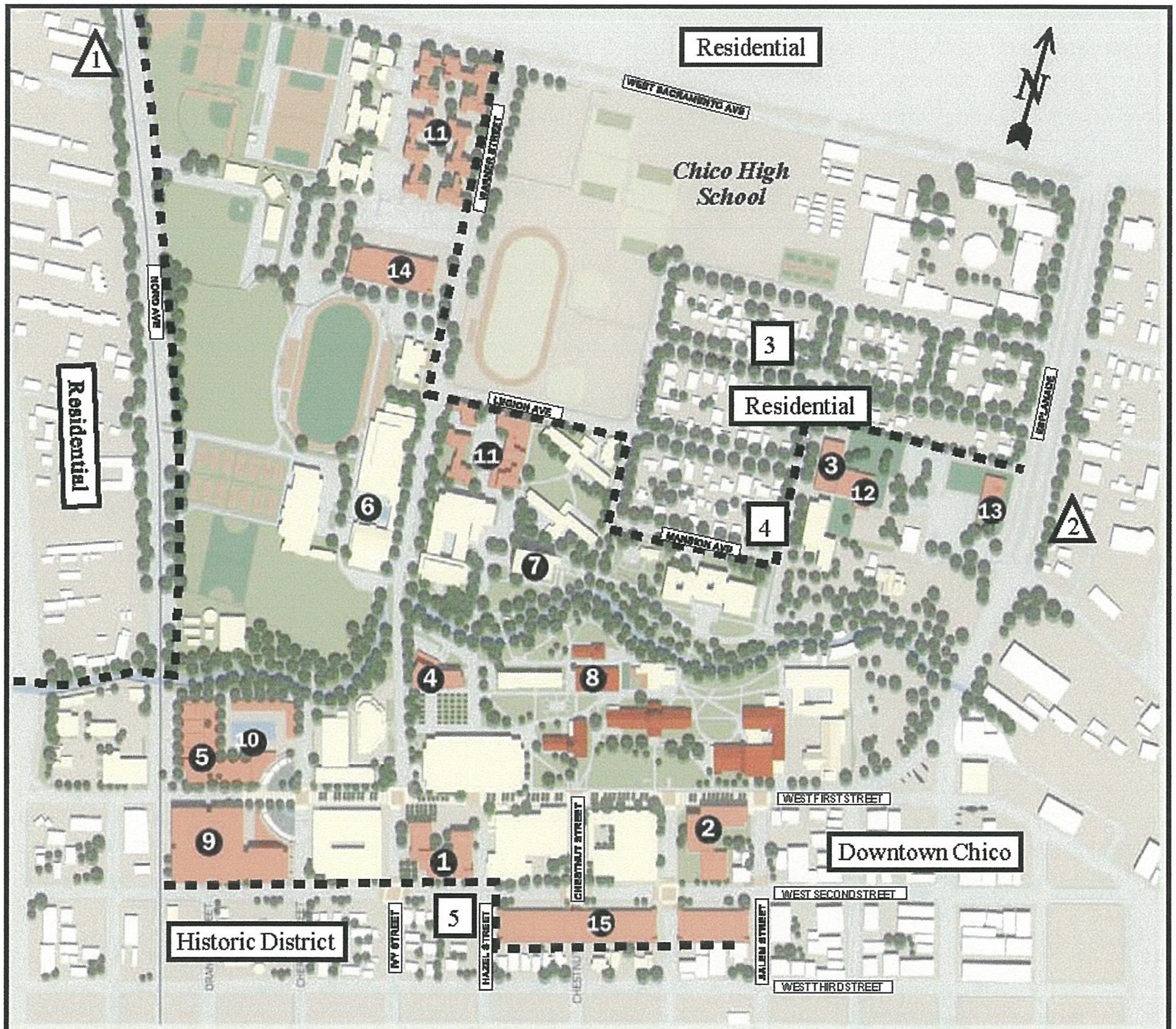
CSU Chico Agricultural Teaching and Research Center. The ATRC Master Plan project area noise environment is defined primarily by traffic noise on local roadways and agricultural-related equipment and processing noise associated with the ATRC facility and the surrounding agricultural land uses.

Measured Ambient Noise Levels in the Project Vicinity

Background noise level measurements were conducted at both the CSU Chico Main Campus and the ATRC facility. The noise level meters were programmed to record the average, median and maximum noise level at each site during the surveys. The maximum value, denoted Lmax, represents the highest noise level measured. The average value, denoted Leq, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median noise level which is denoted L50 is the noise level exceeded half of the time during the measurement.

CSU Chico Main Campus. To quantify existing background noise levels on and in the vicinity of the main campus project site, both short-term and continuous hourly noise measurements were conducted. Short-term noise levels were measured at three locations and continuous hourly noise levels were measured at two locations for a 24-hour period on December 9th and December 10th, 2004. The main campus background noise measurement sites are shown on Figure 3.9-1. Table 3.9-1 provides a summary of the measured background noise levels at the main campus project site. Figures 3.9-2 and 3.9-3 graphically show the results of the continuous hourly noise measurement data.

CSU Chico Agricultural Teaching and Research Center. To quantify existing background noise levels on and in the vicinity of the ATRC project site both short-term and continuous hourly noise measurements were conducted. Short-term noise levels were measured at two locations and continuous hourly noise levels were measured at one location for a 24-hour period on December 9th and December 10th, 2004. The background noise measurement sites are shown on Figure 3.9-4. Table 3.9-2 provides a summary of the measured background noise levels at the ATRC project site. Figure 3.9-5 graphically shows the results of the continuous hourly noise measurement data.



New State Supported Academic Facilities

1. Student Services Center
2. Taylor II Academic
3. Modoc II Academic
4. Siskiyou II Academic
5. Rio Chico Academic
6. Physical Education Pool

State Supported Renovations/ Modifications

7. Butte Hall
8. Colusa Hall

New Non-State Supported Facilities

9. Wildcat Activity Center
10. Aquatic Center
11. Student Housing Project
12. AS Child Care Center
13. Northern California Natural History Museum
14. Stadium Area Parking Structure
15. Second Street Parking Structure

Source: AC Martin and Partners / Quad Knopf, Inc. 2004

△# : Continuous Hourly Measurement Sites ☐# : Short-Term Measurement Sites

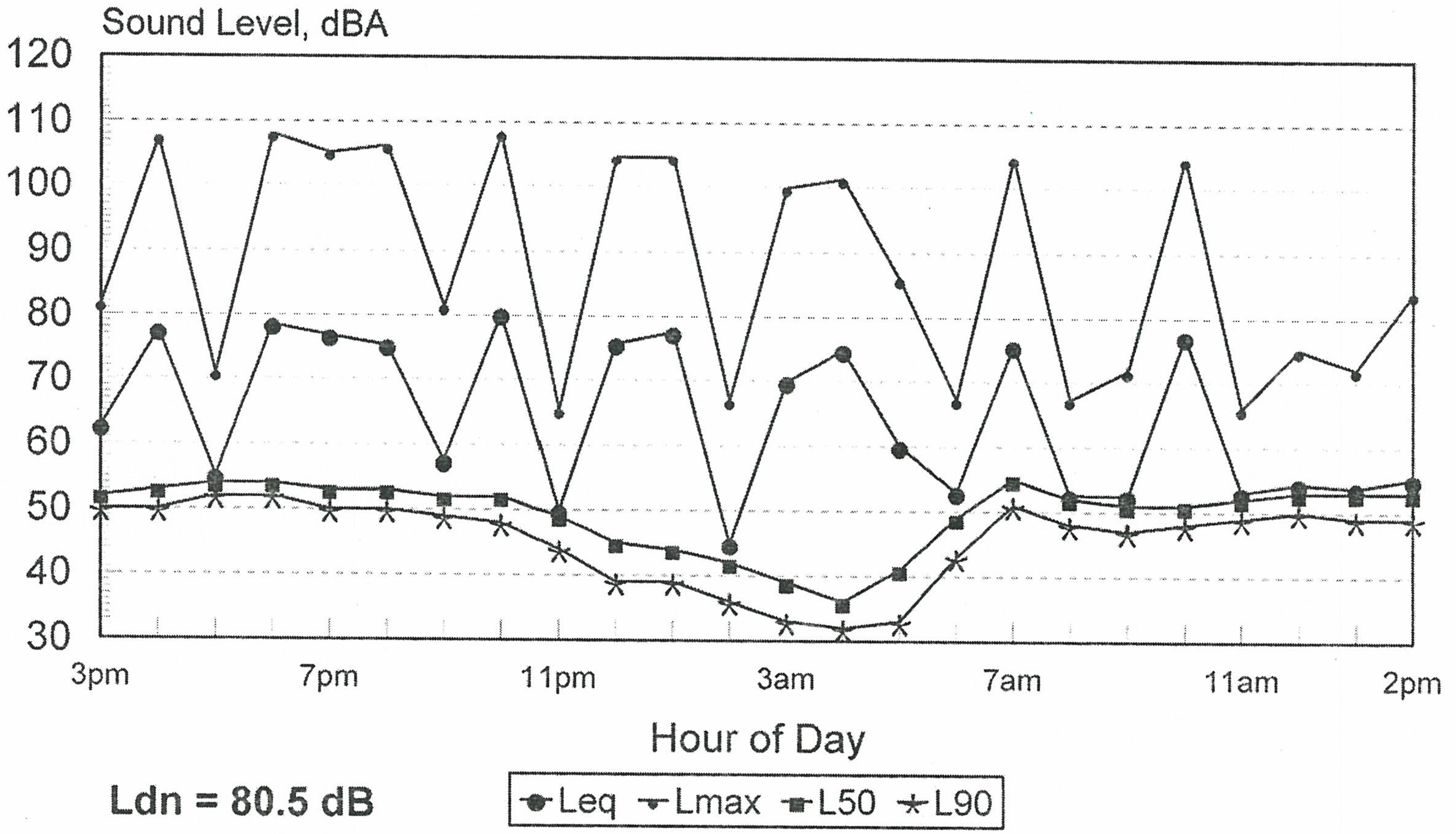
■ ■ ■ : Approximate CSUC Master Plan Boundaries

Source: Bollard & Brennan, Inc. 2004

Quad Knopf

MAIN CAMPUS PROJECT SITE AND NOISE MEASUREMENT LOCATIONS

Figure 3.9-1

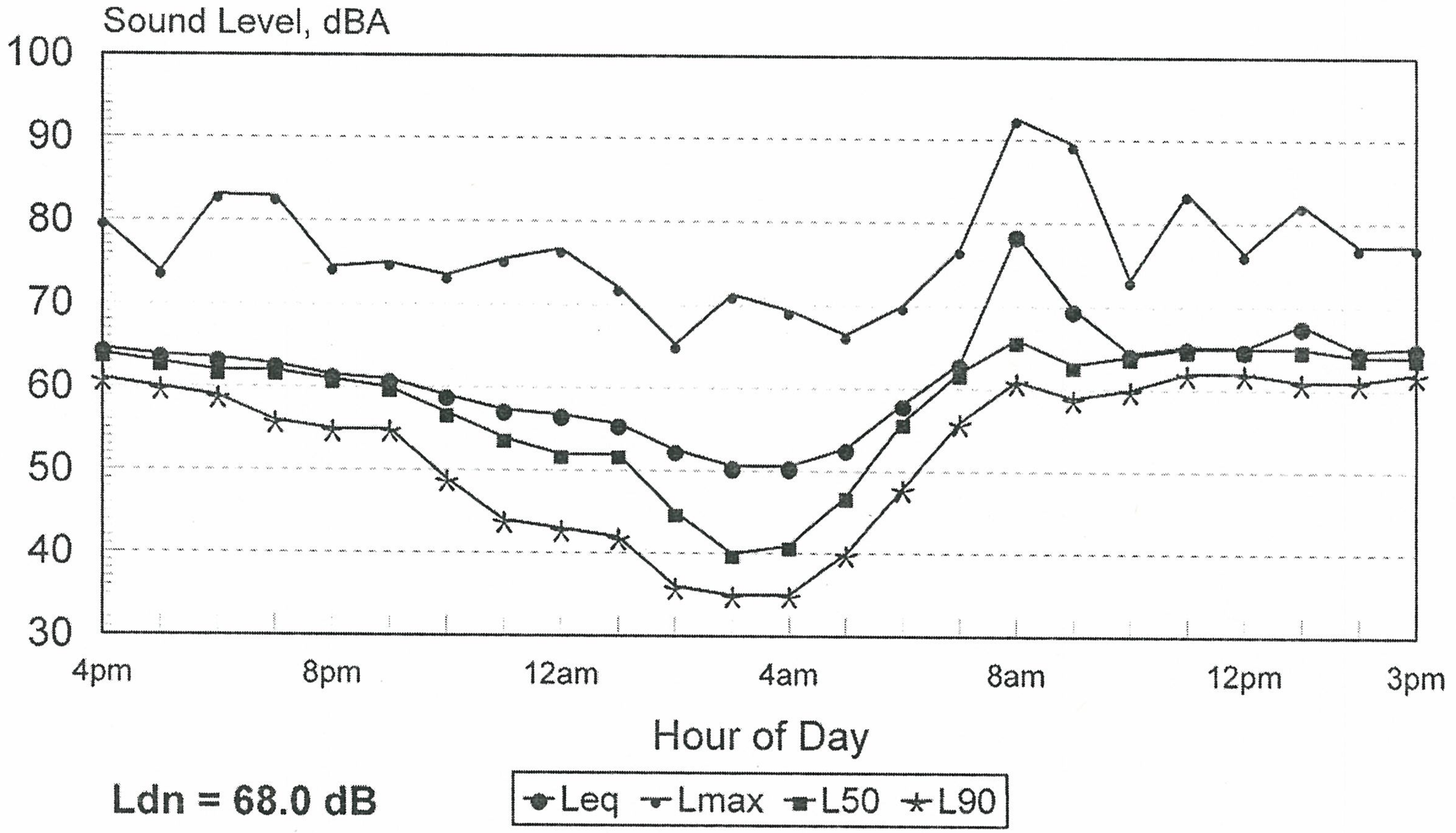


Source: Bollard & Brennan, Inc. 2004

Quad Knopf

MAIN CAMPUS NOISE MEASUREMENT SITE #1 RESULTS

Figure 3.9-2



Source: Bollard & Brennan, Inc. 2004

Quad Knopf

MAIN CAMPUS NOISE MEASUREMENT SITE #2 RESULTS

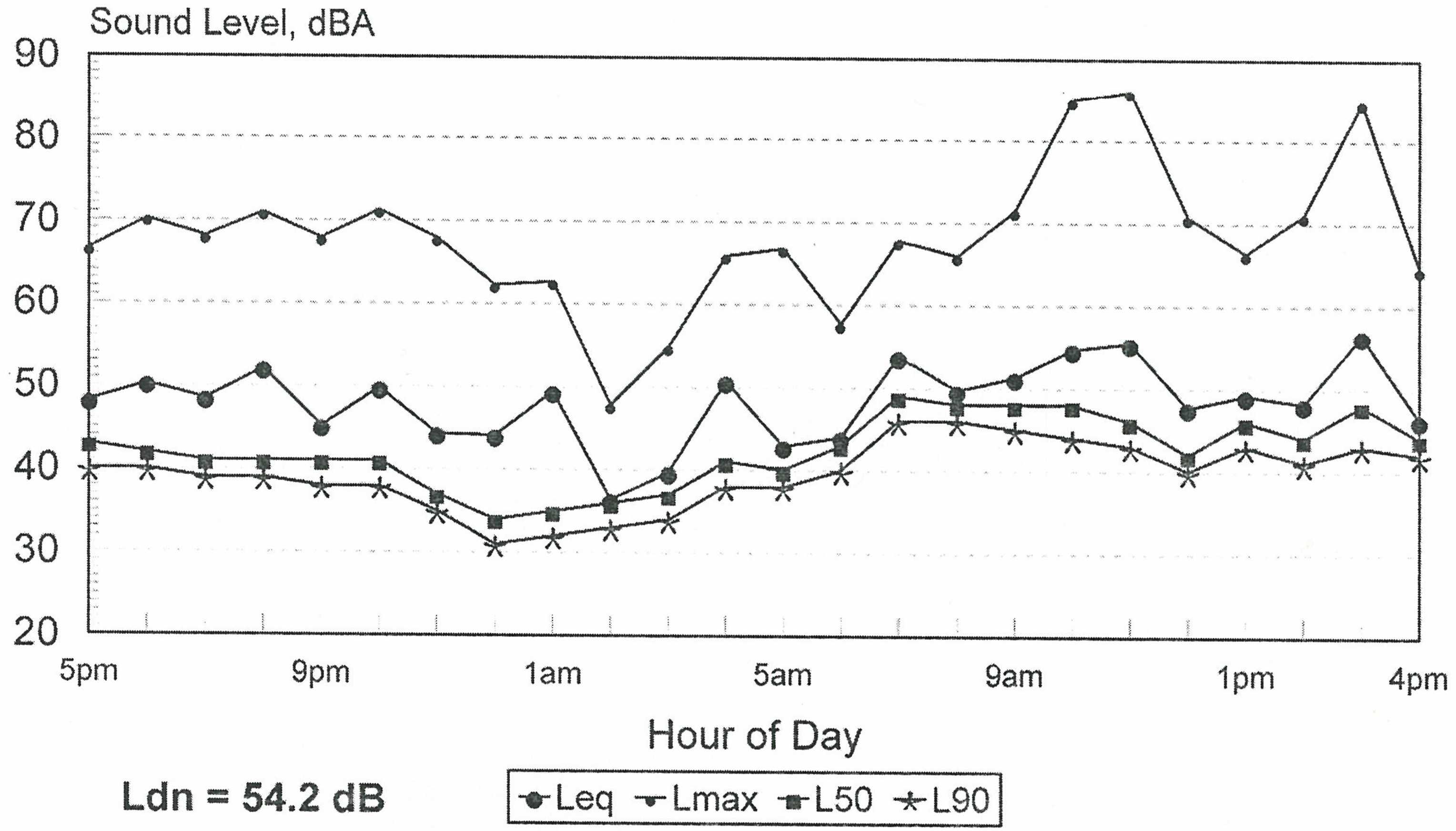
Figure 3.9-3

Source: Bollard & Brennan, Inc. 2004

Quad Knopf

ATRC PROJECT SITE AND
NOISE MEASUREMENT LOCATIONS

Figure 3.9-4



Source: Bollard & Brennan, Inc. 2004

Quad Knopf

ATRC NOISE MEASUREMENT SITE A RESULTS

Figure 3.9-5

Table 3.9-1
Measured Ambient Noise Monitoring Results – Main Campus
December 9-10, 2004

Site	Location	Average Measured Hourly Noise Levels, dBA						
		24-hour	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)		
		L_{dn}	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous 24-hour Noise Measurement Sites								
1	828 Nord Ave. Apt. #32	80.5	73.0	52.8	87.1	74.2	44.1	89.3
2	666 Esplanade	68.0	68.9	79.9	63.4	55.9	71.1	49.4
Short-Term Noise Measurement Sites								
3	W. Frances and Willard Ave.	*NA	58.2	47.3	72.8	Conducted at 8:35 am		
		NA	59.0	51.6	77.4	Conducted at 3:10 pm		
4	304 Mansion Ave.	NA	55.6	50.3	73.6	Conducted at 9:15 am		
		NA	55.0	52.1	68.9	Conducted at 3:30 pm		
5	216 Hazel St.	NA	59.7	57.2	74.7	Conducted at 9:45 am		
		NA	60.0	58.3	78.3	Conducted at 4:00 pm		
*Ldn does not apply to short-term measurements. Source - Bollard & Brennan, Inc., 2004								

Table 3.9-2
Measured Ambient Noise Monitoring Results - ATRC
December 9-10, 2004

Site	Location	Average Measured Hourly Noise Levels, dBA						
		24-hour	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)		
		L_{dn}	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous 24-hour Noise Measurement Site								
A	West property line	54.2	51.8	44.7	71.9	46.6	38.1	61.9
Short-Term Noise Measurement Sites								
B	Northern Property Line of project site	*NA	65.1	57.8	78.3	Conducted at 10:30 am		
		NA	63.1	57.6	75.0	Conducted at 5:25 pm		
C	Eastern Property Line of project site	NA	41.7	41.3	49.8	Conducted at 11:06 am		
		NA	43.1	42.1	52.8	Conducted at 6:10 pm		
*Ldn does not apply to short-term measurements. Source - Bollard & Brennan, Inc., 2004								

Existing Traffic Noise Environment

To describe existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions.

Existing conditions traffic volumes for both the CSUC Main Campus and the ATRC project sites were obtained from kdAnderson Transportation Engineers in the form of intersection turning movements and average daily traffic (ADT) volumes. Truck usage on the area roadways were estimated from field observations and file data.

CSU Chico Main Campus. Table 3.9-3 shows the predicted existing traffic noise levels in terms of the Day/Night Average Level descriptor (Ldn) at a standard distance of 75 feet from the centerlines of the existing CSUC Main Campus project-area roadways, as well as distances to existing traffic noise contours. The extent by which existing land uses in the Plan Area vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise. A complete listing of the FHWA Model input data for existing conditions is contained in Appendix E.

Table 3.9-3
Predicted Existing Master Plan Traffic Noise Levels – Main Campus

Roadway	Segment	Ldn at 75'* (dBA)	Distance to Ldn Contour in feet*	
			60 dBA	65 dBA
Nord Ave.	North of Sacramento Ave.	65	167	78
Walnut Street	W. 2nd Street to W. 3rd Street	63	121	56
Esplanade	E. 1st Street to Sacramento Ave. North of W. 2nd Street	67 67	231 229	107 106
Main Street	South of W. 2nd Street	61	92	42
Broadway Street	South of W. 2nd Street	63	111	51
Sacramento Ave.	Nord Ave. to Warner Ave Warner Ave. to Esplanade	62 59	97 63	45 29
W. 2nd Street	Hazel Street to Chestnut Street	59	64	30

*Distances to roadway noise contours and predicted noise levels are relative to the roadway centerlines.
Sources: kdAnderson Transportation Engineers, Bollard & Brennan, Inc., 2004

CSU Chico Agricultural Teaching and Research Center. Table 3.9-4 shows the predicted existing traffic noise levels in terms of the Day/Night Average Level descriptor (Ldn) at a standard distance of 75 feet from the centerlines of the existing ATRC project-area roadways, as well as distances to existing traffic noise contours. The extent by which existing land uses in the Plan Area vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise. A complete listing of the FHWA Model input data for existing conditions is contained in Appendix E of this EIR.

Table 3.9-4
Predicted Existing Master Plan Traffic Noise Levels – ATRC

Roadway	Segment	Ldn at 75'* (dBA)	Distance to Ldn Contour in feet*	
			60 dBA	65 dBA
Hegan Lane	East of East ATRC Access	60	79	37
	West of Midway	64	146	68
Midway	East Park Ave. to Hegan Lane	65	168	78
East Park Ave.	East of Midway	66	186	86

*Distances to roadway noise contours and predicted noise levels are relative to the roadway centerlines.
Sources: kdAnderson Transportation Engineers, Bollard & Brennan, Inc., 2004

Regulatory Setting

City of Chico Noise Element Criteria

The City of Chico General Plan contains the following policies concerning noise that pertain to this project, along with a determination of the project's consistency with those policies (Table 3.9-5). (See also Tables 3.9-6 & 3.9-7)

Table 3.9-5
Project Consistency with the Noise Element of the General Plan

General Plan Goals and Policies	Consistency with General Plan	Analysis
N-I-1: New development of noise-sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 9.5-1, unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 9.5-1. Noise created by new transportation noise sources should be mitigated so as not to exceed the levels specified in Table 9.5-1 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.	Consistent	The project does not introduce new transportation sources but instead alters existing transportation sources.
N-I-2 Assess and mitigate roadway improvement projects that impact existing noise-sensitive uses, in accordance with Noise Element standards and tests of significance. It is anticipated that roadway improvement projects will be needed to accommodate build-out of the general plan. Therefore, existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects as a result of	Consistent	The noise analysis has been based upon the noise element standards

General Plan Goals and Policies	Consistency with General Plan	Analysis
increased roadway capacity, increases in travel speeds, etc. It may not be practical to reduce increased traffic noise levels consistent with those contained Table 3. Therefore, as an alternative, the following criteria may be used as a test of significance for roadway improvement projects: Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant.		
N-I-3: New development of noise-sensitive uses should not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9.5-2 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 9.5-2.	Consistent	No new development of noise sensitive uses will be exposed to new non-transportation noise sources.
Noise created by new proposed non-transportation noise sources should be mitigated so as not to exceed the noise level standards of Table 9.5-2 as measured immediately within the property line of land designated for noise sensitive uses.	Consistent	The analysis has provided mitigation measures for new noise-sensitive uses.
N-I-4: Where proposed projects are likely to produce noise levels exceeding the standards of Tables 9.5-1 and 9.5-2, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. The requirements for the content of an acoustical analysis are given by Table 9.5-3.	Consistent	An acoustical analysis and noise mitigation has been performed as part of the EIR.

General Plan Goals and Policies	Consistency with General Plan	Analysis
N-I-5: In making a determination of impact for a new project, under the California Environmental Quality Act (CEQA), consider the following changes in noise levels for determining a test of significance. For transportation noise sources, the criteria contained within Implementation Policy N-I-2 shall be used to determine a significant impact. For non-transportation noise source, where background noise levels at the receiving land use are determined to exceed the performance standards contained in Table 9.5-2, noise sources due to the project will be allowed to produce noise levels at the receiving land use consistent with the performance standards contained within Table 9.5-2. In addition, the project will be allowed to produce noise levels in excess of the performance standards contained within Table 9.5-2, as long as they do not contribute to an increase in the overall background noise levels.	Consistent	An acoustical analysis was performed consistent with the policies and criteria of the noise element.

Table 3.9-6
(Table 9.5-I of the Chico General Plan Noise Element)
Maximum Allowable Noise Exposure -Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn}/CNEL, dB	L_{dn}/CNEL,dB	L_{eq}, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[4]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60[3]	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

[4] In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

Table 3.9-7
(Table 9.5-2 of the General Plan Noise Element)
Noise Level Performance Standards for new
Projects Affected by or Including Non-Transportation Sources

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	55 dB	45 dB
Maximum level, dB	75 dB	65 dB
Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises (e.g., humming sounds, outdoor speaker systems). These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).		

City of Chico Noise Ordinance

The City of Chico Noise Ordinance provides a categorical exemption for construction between the hours of 7:00 a.m. and 9:00 p.m. daily except Sundays and holidays. The categorical exemption for Sundays and holidays is between the hours of 10:00 a.m. and 6:00 p.m., provided that it meets at least one of the following noise limitations:

1. No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of twenty-five feet from the source. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.

2. The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.

3.9.2 IMPACTS AND MITIGATION MEASURES

Analysis Procedure

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed, as discussed previously in the Regulatory Setting heading of this Section. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local planning criteria or ordinances, or substantially increase noise levels at noise-sensitive land uses.

Based on the significance criteria contained in Appendix G of the CEQA Guidelines, a project may have a significant adverse impact on the environment if it will:

- Expose people to generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

- Exposure of people to or generation of excessive ground borne vibration or ground borne noise levels.

- For a project located within two miles of a public use airport, would the project expose people residing or working in the project area to excessive noise levels.

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Evaluation Criteria

For this analysis, noise impacts associated with the proposed project would also be considered significant if the following were to occur:

a) For transportation noise sources, an exceedance of the upper limit noise level criterion contained within the General Plan Noise Element. An increase in noise levels consistent with Policy N-I-2.

b) Expose the existing noise-sensitive land uses in the project vicinity to noise levels generated by on-site activities (sources other than off-site traffic) in excess of the City of Chico General Plan Noise Element standards.

c) Construction noise impacts will be compared to the City of Chico Noise Ordinance.

Impact #3.9-1: Potential for increased traffic noise as a result of the proposed Campus Master Plan 2004 - Main Campus under existing plus project conditions.

Discussion/Conclusion: The CSUC Master Plan project could result in an increase in existing traffic noise levels at existing land uses in the main campus project vicinity on the existing local roadway network.

The identified potentially significant noise components to be evaluated on a project level basis at existing noise-sensitive land uses within the CSUC Main Campus Master Plan project vicinity are increases in traffic noise levels due to the project, the Wildcat Activity Center, and construction noise levels. The analyses of existing and future traffic noise levels are inclusive of noise levels associated with the new parking structures labeled 14 and 15 in Figure 3.9-1, due to the fact that parking structure noise is primarily defined by the ingress/egress of traffic. Table 3.9-8 shows the predicted Existing plus Project traffic noise levels, and the change in noise levels due to the project.

Table 3.9-8
Predicted Existing Plus Master Plan Traffic Noise Levels – Main Campus

Roadway	Segment	*Ldn at 75' (dBA)	Change (dBA)	Distance to Ldn Contour in feet*	
				60 dBA	65 dBA
Nord Ave.	North of Sacramento Ave.	66	+1	177	82
Walnut Street	W. 2nd Street to W. 3rd Street	63	0	122	57
Esplanade	E. 1st Street to Sacramento Ave. North of W. 2nd Street	68 68	+1 +1	243 247	113 115
Main Street	South of W. 2nd Street	62	+1	99	46
Broadway Street	South of W. 2nd Street	63	0	117	55
Sacramento Ave.	Nord Ave. to Warner Ave Warner Ave. to Esplanade	62 60	0 +1	101 77	47 36
W. 2nd Street	Hazel Street to Chestnut Street	59	0	67	31

*Distances to roadway noise contours and predicted noise levels are relative to the roadway centerlines.
Sources: kdAnderson Transportation Engineers, Bollard & Brennan, Inc., 2004

Based upon the analysis of existing traffic noise levels and traffic noise levels associated with the proposed CSUC Master Plan project, the change in traffic noise levels resulting from the proposed project range between 0 dB and + 1 dB at all of the analyzed roadway segments. A change in noise levels of less than 1 dB is considered to be imperceptible. Therefore, this impact is considered to be ***less than significant***.

Mitigation Measure

No mitigation is required.

Impact #3.9-2: Potential for increased traffic noise as a result of the proposed Campus Master Plan 2004 - Main Campus under future plus project conditions.

Discussion/Conclusion: The CSUC Master Plan project could result in an increase in future traffic noise levels at existing land uses in the CSUC Main Campus project vicinity on the existing local roadway network.

As a means of determining the potential future noise impacts associated with the main campus of the project, the FHWA Traffic Noise Prediction Model was utilized. Table 3.9-9 shows the Cumulative Base traffic noise levels and Cumulative plus Project traffic noise levels along with the change in noise levels due to the project. A complete listing of the FHWA Model input data for future conditions is contained in Appendix E.

Table 3.9-9
Predicted Cumulative Base and Cumulative Plus Master Plan Traffic Noise Levels – Main Campus

<table>
<tr><th rowspan="2">Roadway</th><th rowspan="2">Segment</th><th rowspan="2" colspan="2">*Ldn at 75' (dBA)</th><th colspan="2">Distance to Ldn Contour in feet*</th></tr>
<tr><th>60 dBA</th><th>65 dBA</th></tr>
<tr><td colspan="6">Cumulative Base</td></tr>
<tr><td>Nord Ave.</td><td>North of Sacramento Ave.</td><td colspan="2">66</td><td>199</td><td>93</td></tr>
<tr><td>Walnut Street</td><td>W. 2nd Street to W. 3rd Street</td><td colspan="2">64</td><td>144</td><td>67</td></tr>
<tr><td>Esplanade</td><td>E. 1st Street to Sacramento Ave.
North of W. 2nd Street</td><td colspan="2">68
68</td><td>273
273</td><td>127
127</td></tr>
<tr><td>Main Street</td><td>South of W. 2nd Street</td><td colspan="2">62</td><td>109</td><td>51</td></tr>
<tr><td>Broadway Street</td><td>South of W. 2nd Street</td><td colspan="2">64</td><td>132</td><td>61</td></tr>
<tr><td>Sacramento Ave.</td><td>Nord Ave. to Warner Ave
Warner Ave. to Esplanade</td><td colspan="2">63
60</td><td>115
76</td><td>54
35</td></tr>
<tr><td>W. 2nd Street</td><td>Hazel Street to Chestnut Street</td><td colspan="2">62</td><td>98</td><td>45</td></tr>
<tr><th rowspan="2">Roadway</th><th rowspan="2">Segment</th><th rowspan="2">Ldn at 75' (dBA)</th><th rowspan="2">Change (dBA)</th><th colspan="2">Distance to Ldn Contour in feet*</th></tr>
<tr><th>60 dBA</th><th>65 dBA</th></tr>
<tr><td colspan="6">Cumulative Plus Master Plan</td></tr>
<tr><td>Nord Ave.</td><td>North of Sacramento Ave.</td><td>67</td><td>+1</td><td>208</td><td>97</td></tr>
<tr><td>Walnut Street</td><td>W. 2nd Street to W. 3rd Street</td><td>64</td><td>0</td><td>145</td><td>67</td></tr>
<tr><td>Esplanade</td><td>E. 1st Street to Sacramento Ave.
North of W. 2nd Street</td><td>69
69</td><td>+1
+1</td><td>286
289</td><td>133
134</td></tr>
<tr><td>Main Street</td><td>South of W. 2nd Street</td><td>63</td><td>+1</td><td>116</td><td>54</td></tr>
<tr><td>Broadway Street</td><td>South of W. 2nd Street</td><td>64</td><td>0</td><td>138</td><td>64</td></tr>
<tr><td>Sacramento Ave.</td><td>Nord Ave. to Warner Ave
Warner Ave. to Esplanade</td><td>63
61</td><td>0
+1</td><td>119
89</td><td>55
41</td></tr>
<tr><td>W. 2nd Street</td><td>Hazel Street to Chestnut Street</td><td>62</td><td>0</td><td>99</td><td>46</td></tr>
<tr><td colspan="6">*Distances to roadway noise contours and predicted noise levels are relative to the roadway centerlines.
Sources: kdAnderson Transportation Engineers, Bollard & Brennan, Inc., 2004</td></tr>
</table>

The current student recreation center concept is envisioned as a two-level 124,568 to 133,400 SF indoor recreation center to be placed on university owned sites, bordered by First Street, Cherry Street, Second Street, and the railroad right-of-way on the north, south, east, and west, respectively. Noise associated with the activity center will be confined to indoor spaces and will not affect any nearby noise sensitive land uses. Traffic noise impacts associated with the Wildcat Activity Center are included in the above analysis.

Based upon the analysis of future traffic noise levels and traffic noise levels associated with the proposed CSUC Master Plan project, the change in traffic noise levels resulting from the proposed project range between 0 dB and + 1 dB at all of the analyzed roadway segments. A change in noise levels of less than 1 dB is considered to be imperceptible. Therefore, this impact is considered to be ***less than significant***.

Mitigation Measure

No mitigation is required.

Impact #3.9-3: Potential impact of construction noise as a result of planned improvements for the Main Campus.

Discussion/Conclusion: Noise impacts would be generated by construction activities. These sounds generally range between 85 dB and 90 dB at a distance of 50 feet, and could exceed normally acceptable sound levels at neighboring receptor locations. During the construction phases of the project, noise from construction activities would increase the noise environment in the immediate area. Activities involved in construction would generate noise levels ranging from 85 to 90 dB at a distance of 50 feet as indicated in Table 3.9-10. Construction activities would be temporary in nature, typically occurring during normal working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours. Based upon the project description, there would not be any pile driving associated with the project construction activities.

Table 3.9-10
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85
Source: Environmental Noise Pollution, Patrick R. Cunniff, 1977.	

This impact is ***potentially significant***.

Mitigation Measures

Implementation of the following mitigation measures will reduce noise impacts to a ***less than significant level.***

Mitigation Measure #3.9-3a:

All heavy construction equipment and all stationary noise sources (such as diesel generators) shall be in good working order and have manufacturer installed mufflers.

Mitigation Measure #3.9-3b:

Equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from existing residences as is feasible.

Mitigation Measure #3.9-3c:

All construction shall be between the hours of 7:00 a.m. and 9:00 p.m. daily except Sundays and holidays.

Construction activities between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays shall meet at least one of the following noise limitations:

1. *No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of twenty-five feet from the source. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.*

2. *The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.*

Impact #3.9-4: Potential for earthborn construction vibration as a result of activities associated with the Main Campus.

Discussion/Conclusion: Vibrations caused by construction activities can be interpreted as energy transmitted in waves through the soil mass. These energy waves generally dissipate with distance from the vibration source, due to spreading of the energy and frictional losses. The energy transmitted through the ground as vibration, if great enough, can result in structural damage. In order to assess the potential for structural damage associated with vibration from construction activities, the vibratory ground motion in the vicinity of an affected structure is measured in terms of peak particle velocity (PPV), typically in units of inches per second. Table 3.9-11 shows the results of vibration measurements conducted by Wilson Ihrigg Associates during typical construction activities.

Table 3.9-11
Summary of Vibration Levels Measured During Construction Activities

Activity	Measured Peak Vibration Levels (in/sec PPV)
Moving CAT (Vibrator)	0.059 @ 42 ft.
Moving CAT (Backhoe)	0.043 @ 30 - 40 ft.
Vibratory Soil Compaction	0.031 - 0.199 @ 38 - 170 ft.
Earth Excavation	0.056 @ 42 ft.

Weekly Progress Report for Vibration Monitoring for Richmond Transport, Wilson, Ihrigg & Associates, 1994-95
These levels are provided for informational purposes only and are not meant to represent projections of actual vibration levels at the project site.

Based upon Table 3.9-11, the expected earthborn construction noise levels are expected to be less than 0.1 inches/second PPV. The predicted vibration levels are considerably less than the threshold of 0.5 inches/second PPV. Therefore, the impact is ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.9-5: Potential for increased traffic noise at as a result of the proposed Campus Master Plan 2004 - ATRC under existing plus project conditions.

Discussion/Conclusion: The ATRC Master Plan project could result in an increase in existing traffic noise levels at existing land uses in the main campus project vicinity on the existing local roadway network.

The identified potentially significant noise components to be evaluated on a project level basis at existing noise-sensitive land uses in the ATRC Master Plan project vicinity are increases in traffic noise due to the project, construction noise levels, and noise associated with agricultural-related equipment and processing. Table 3.9-12 shows the predicted Existing plus Project traffic noise levels, and the change in noise levels due to the ATRC project.

Table 3.9-12
Predicted Existing Plus Master Plan Traffic Noise Levels – ATRC

Roadway	Segment	*Ldn at 75' (dBA)	Change (dBA)	Distance to Ldn Contour in feet*	
				60 dBA	65 dBA
Hegan Lane	East of East ATRC Access West of Midway	61 65	+1 +1	84 150	39 70
Midway	East Park Ave. to Hegan Lane	65	0	171	79
East Park Ave.	East of Midway	66	0	190	88

*Distances to roadway noise contours and predicted noise levels are relative to the roadway centerlines.
Sources: kdAnderson Transportation Engineers, Bollard & Brennan, Inc., 2004

Based upon the analysis of existing traffic noise levels and traffic noise levels associated with the proposed ATRC Master Plan project, the change in traffic noise levels resulting from the proposed project range between 0 dB and + 1 dB at all of the analyzed roadway segments. A change in noise levels of less than 1 dB is considered to be imperceptible. Therefore, this impact is considered to be ***less than significant***.

Mitigation Measure

No mitigation is required.

Impact #3.9-6: Potential for increased traffic noise at as a result of the proposed Campus Master Plan 2004 - ATRC under future plus project conditions.

Discussion/Conclusion: The CSUC Master Plan project could result in an increase in future traffic noise levels at existing land uses in the CSUC ATRC project vicinity on the existing local roadway network.

As a means of determining the potential future noise impacts associated with the ATRC project, Bollard & Brennan, Inc. once again used the FHWA Traffic Noise Prediction Model. Table 3.9-13 shows the Cumulative Base and the Cumulative plus Project traffic noise levels along with the change in noise levels due to the project. A complete listing of the FHWA Model input data for future conditions is contained in Appendix E.

Table 3.9-13
Predicted Cumulative Base and Cumulative Plus Master Plan Traffic Noise Levels – ATRC

Roadway	Segment	*Ldn at 75' (dBA)	Distance to Ldn Contour in feet*	
			60 dBA	65 dBA
Cumulative Base				
Hegan Lane	East of East ATRC Access	63	121	56
	West of Midway	67	224	104
Midway	East Park Ave. to Hegan Lane	67	230	107
East Park Ave.	East of Midway	67	215	100

Roadway	Segment	Ldn at 75' (dBA)	Change (dBA)	Distance to Ldn Contour in feet*	
				60 dBA	65 dBA
Cumulative Plus Master Plan					
Hegan Lane	East of East ATRC Access	63	0	125	58
	West of Midway	67	0	227	105
Midway	East Park Ave. to Hegan Lane	67	0	233	108
East Park Ave.	East of Midway	67	0	219	102

*Distances to roadway noise contours and predicted noise levels are relative to the roadway centerlines.
Sources: kdAnderson Transportation Engineers, Bollard & Brennan, Inc., 2004

Based upon the analysis of future traffic noise levels and traffic noise levels associated with the proposed CSUC ATRC Master Plan project, no significant changes in traffic noise levels will result from the proposed project. A change in noise levels of less than 1 dB is considered to be imperceptible. Therefore, this impact is considered to be ***less than significant***.

Mitigation Measure

No mitigation is required.

Impact #3.9-7: Potential for construction noise as a result of planned improvements for the ATRC.

Discussion/Conclusion: Noise impacts would be generated by construction activities. These sounds generally range between 85 dB and 90 dB at a distance of 50 feet, and could exceed normally acceptable sound levels at neighboring receptor locations. This impact is ***potentially significant***.

Mitigation Measure

Implementation of the following mitigation measures will reduce this potential impact to a ***less than significant level.***

Mitigation Measure #3.9-7a:

All heavy construction equipment and all stationary noise sources (such as diesel generators) shall be in good working order and have manufacturer installed mufflers.

Mitigation Measure #3.9-7b:

Equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from existing residences as is feasible.

Mitigation Measure #3.9-7c:

All construction shall be between the hours of 7:00 a.m. and 9:00 p.m. daily except Sundays and holidays.

Construction activities between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays shall meet at least one of the following noise limitations:

1. *No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of twenty-five feet from the source. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.*

2. *The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.*

Impact #3.9-8: Potential for earthborn construction vibration as a result of planned improvements at the ATRC.

Discussion/Conclusion: Based upon Table 3.9-13, the expected earthborn construction noise levels are expected to be less than 0.1 inches/second PPV. The predicted vibration levels are considerably less than the threshold of 0.5 inches/second PPV. Therefore, the impact is ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.9-9: Potential for increased agricultural operations noise as a result of planned improvements for the ATRC.

Discussion/Conclusion: Agricultural noise sources tend to be variable, both in terms of noise level and frequency of occurrence. Due to the wide array of equipment types and conditions under which that equipment is used in the agriculture industry, noise generated by agricultural processes varies substantially. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions.

Due to the seasonal nature of the agricultural industry, there are often extended periods of time when no noise is generated on properties which are actively being farmed, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation. Due to this high degree of variability of agricultural activities, it is not feasible to reliably quantify the noise generation of agricultural uses in terms of noise standards commonly utilized to assess impacts of other noise sources; however, these uses generate short-term periods of elevated noise during all hours of the day and night and possess the potential to generate adverse public reaction during intensive farm-related activities.

This analysis of agricultural noise impacts takes the approach that, although agricultural noise is variable, it has the potential to exceed local noise standards and create annoyance at future residential land uses when it does occur. Due to the presence of a substantial number of agricultural-related operations both within and outside of the ATRC Master Plan Area, and the inherent noise-generation associated with agricultural operations, the potential exists to exceed the City of Chico Noise Element Standards and the creation of adverse public reaction to agricultural operations by future noise-sensitive developments within the Plan Area. This potential would be greatest during intensive plowing or harvesting operations in proximity to existing noise-sensitive areas or developed noise-sensitive areas within the ATRC Master Plan Area. According to significance criteria N-I-3 and N-I-5, this impact is considered ***potentially significant.***

Mitigation Measures

Implementation of the following noise mitigation measures would reduce this impact to a ***less than significant level.***

Mitigation Measure #3.9-9a:

A disclosure statement should be provided to all prospective buyers of properties within the Plan Area notifying of the presence of existing and future noise-producing agricultural-related activities in the immediate Plan Area.

Mitigation Measure #3.9-9b:

A buffer of at least 100 feet should be provided between agricultural lands and future residential developments within the ATRC Master Plan Area.

3.10 POPULATION AND HOUSING

3.10.1 SETTING

The project site is located in the City of Chico in Butte County. The California Department of Finance, Demographic Research Unit, estimates the population of Chico to have reached 71,300 at the start of 2004. The City of Chico notes that, inclusive of the population of surrounding unincorporated areas, the total population of the Chico urban area 101,955. (The Chico urban area corresponds to the "planning area" addressed in the Chico General Plan.) Population estimates and projections have also been made for the Chico Sphere of Influence, which includes the probable future boundaries of the City. The population of the Chico Sphere of Influence was 84,985 in 2000, the most recent year for which data were available. The California Department of Finance estimated the population of Butte County to be 212,700 at the beginning of 2004, with the unincorporated area totaling 93,800. Table 3.10-1 contains growth projections for 2015 based on an average annual growth rate of 3 percent.

Table 3.10-1
Projected Population Growth in Chico and Surrounding Area

Year	City of Chico	Chico Sphere of Influence	Butte County
2000	59,954	84,985	203,171
2015	93,406	132,404	316,534

Source: Adopted 2003 City of Chico Housing Element

CSU Chico Student Population

The 1990 University Master Plan called for growth up to 15,000 academic year full-time equivalent students (AY FTES). AY is an average of fall and spring enrollment and is expressed in FTES. In 2003, the university exceeded the 15,000 figure by an estimated 200 AY FTES. The proposed Campus Master Plan 2004 is designed to accommodate an AY FTES total of 17,900. This figure represents a 2,900 increase over the 15,000 FTES AY goal of the 1990 Master Plan.

Housing Stock

Table 3.10-2 below provides a summary of the historical development of housing in the City of Chico. Between 1990 and 2000, 8,057 units were added to the City's housing stock either through development or annexations, increasing the City's total housing stock from 16,295 to 24,352. Of these added units, 2,251 were part of multi-family projects. By 2000, multi-family units represented 45 percent of all units, down from the 53 percent in 1990. With the exception of the 826 multi-family units built in 1991, the period of 1990 to 2000 provided an average of 150 multi-family units per year.

Table 3.10-2
City of Chico Housing Development/Historic Trends

Year	Total Units	Single-family Residences		Multi-Family Residential Units		Owner Occupied		Renter Occupied		Vacant
	Number	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	% of Total
1960	5,432	4,082	75%	1,350	25%	n/a	n/a	n/a	n/a	5.4%
1970	6,585	4,655	70%	1,930	30%	3,134	47.6%	3,147	47.8%	4.6%
1980	11,082	6,094	55%	4,988	45%	3,893	35.2%	6,630	59.8%	5.0%
1990	16,295	7,628	47%	8,667	53%	5,096	31.3%	10,412	63.9%	4.8%
2000	24,352	12,802	54%	10,918	45%	9,486	38.8%	13,990	67.3%	3.7%

Source: 2000 Census; City of Chico Adopted Housing Element, December 8, 2003.

The current *Chico Housing Element*, adopted in December 2003, has identified a need for 9,470 housing units of all types for all income groups over the period of 2001 to 2008. Of that number, 52 percent, or 4,892, are the estimated need for low or very low income groups.

CSU Chico Housing Plans

Currently, 1,731 mostly first-year students are accommodated in University-sponsored resident halls and apartments, including Whitney Hall, which has a capacity to house 496 students. The Campus Master Plan 2004 has identified additional demand for on-campus housing that cannot be met in existing facilities. In addition, an increase in student enrollment is expected to increase the demand for housing and the housing shortfall. The plan calls for replacement of Whitney Hall with more modern facilities. In addition, the plan proposed to add 1,298 new bed-spaces would bring the campus total of rentable bed-spaces, to 3,029. The 1,298 new bed-spaces would in addition to the 496 replacement bed-spaces required as a result of the demolition of Whitney Hall.

The Campus Master Plan 2004 would lead to elimination of 100 multi-family units housing approximately 400 people on two sites adjacent to the campus. The College Park area, which consists of approximately five acres bounded by Warner Street, Sacramento Avenue, and university parking and contains 26 homes, would be the site for a portion of the new university-constructed housing. An additional 15 homes in the Rio Chico block to the southwest of the campus would be demolished to make way for a physical education facility.

3.10.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Based on Appendix G of the State CEQA Guidelines, the project is considered to have a significant adverse impact on population and housing if it will:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere;
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Impact #3.10-1: Development of the proposed project would increase the population in the vicinity (growth-inducing impact).

Discussion/Conclusion: The Campus Master Plan 2004 is designed to serve an expected increase in enrollment to 17,900 AY FTES, a 2,900 increase over the 15,000 AY FTES goal of the 1990 Master Plan. This enrollment increase will be accommodated by the construction of five new major academic buildings, various recreational and support facilities, and 1,298 new bed-spaces. Therefore, the project is considered growth inducing. It should be noted, however, that these new facilities are also intended to better serve existing enrollment levels. The campus currently has 1,731 bed-spaces, which is not enough to meet the university's long-standing goal of providing on-campus housing to all first-year students that do not already live in the Chico area and are in need of campus housing. The 1,298 new bed-spaces represent a 75 percent increase over the 1,731 bed-spaces currently available. This increase in bed-spaces represents 45 percent of the projected 2,900 increase in enrollment. Since many of the new students will not be freshman, the increased housing will enable the university to meet its goal, based on current enrollment levels, of providing housing for first-year students in need of local housing. Other projects called for in the proposed Campus Master Plan 2004 are also designed to better serve existing enrollment, including more up-to-date classrooms, food service, and recreational facilities. This growth is considered necessary to accommodate projected needs for college facilities statewide. Although there is some growth inducing aspects of the proposed Master Plan, the increase in student population (2,900) is not substantial when considered in the context of the existing population and total growth anticipated for the City of Chico and the surrounding area. According to the U.S. Census, the City's total population in 2000 was 59,954 and the population within the City's Sphere of Influence was estimated to be 84,985. The increase in student population would represent 3.4% of the existing population in the area and assuming a growth rate of 2.5%, would represent only 2.3% of the projected population for the Sphere of Influence in 2015. The impact is considered ***less than significant.***

Mitigation Measure

No mitigation measures are required.

Impact #3.10-2: The potential of the project to displace residents currently living in College Park and Rio Chico.

Discussion/Conclusion: The Campus Master Plan 2004 calls for the acquisition of two sites adjacent to the campus – the College Park area (five acres) and a city block known as Rio Chico. The two sites contain approximately 100 multi-family units providing housing to an estimated 400 residents and students. These units would be demolished to make way for a portion of the new university-constructed housing and a physical education facility. Since no surveys have been done of residents living in these units, it is not known how many of the new bed-spaces called for in the proposed Campus Master Plan 2004 would house first-year students who might live in the units planned for demolition. However, the construction of 1,298 bed-spaces for freshman on campuses will free up rental units in other areas of Chico that would otherwise have been used by freshman who will instead live on campus. This on-campus construction will offset the 100 units that will be lost as a result of implementation of the Campus Master Plan 2004. Therefore, this impact is considered ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Impact #3.10-3: The potential impact on the City of Chico's vacancy rate as a result of the increased enrollment enabled by the proposed Campus Master Plan 2004.

Discussion/Conclusion: As of 2000, the latest year for which data were available, the vacancy rate in Chico was estimated to be 3.7 percent. This is considered somewhat low compared to the City's average historical vacancy rate of around 5 percent. The population within the City of Chico Sphere of Influence is projected to grow to 132,404 over the next ten years, an increase of 3,388 new residents per year. Roughly half of these new residents (16,942 over the 10-year period) will live in apartments, based on the historic multi-family-single-family ratio in the City. Over the same ten year period, the 2,900 AY FTES increase called for in the Campus Master Plan 2004 would result in a growth of 290 AY FTES per year. This represents only 17 percent of the population increase projected for the Chico Sphere of Influence. In addition, many of the bed-spaces needed by these new students will be made available, either directly or indirectly, by the addition of 1,298 bed-spaces to be constructed on campus. Compared with the potential impact of general population growth on the rental unit market, and given the potential for on-campus housing to handle a significant portion of the enrollment increase, this impact is considered ***less than significant***.

Mitigation Measure

No mitigation measures are required.

3.11 PUBLIC SERVICES AND FACILITIES, UTILITIES

INTRODUCTION

This section presents a discussion and analysis of the public services and utility service systems. The water supply, drainage and flood control, and expected project wastewater impacts from the proposed project are discussed more in detail in Section 3.7 Hydrology/Water Quality.

3.11.1 SETTING

California State University, Chico (CSU Chico) is located in the City of Chico, California, in Butte County in the northern Sacramento Valley (See Figure 2-1). The main campus presently encompasses 119 acres, in an area roughly bounded by the Union Pacific Railroad right-of-way on the west; by West Sacramento, Legion and Mansion Avenues on the north; by the Esplanade, Children's Park, Salem and Normal Streets on the east; and by West Second and West Third Streets on the south (See Figure 2-2). The Campus Master Plan 2004 also proposes upgrades and expansion of the Agricultural Teaching and Research Center, an 800-acre site located approximately 2 miles from the main campus (See Figure 2-3). Approximately 95 acres are considered the core area of the ATRC and contain several working animal and plant crop farm units, administrative and teaching areas, public gathering, maintenance, storage and agricultural by-product facilities.

Law Enforcement

The law enforcement service for CSU Chico is provided by the University Police Department (UPD), which is located in Yuba Hall off of 2nd and Normal Street. The UPD is a full-service state police agency staffed by fifteen sworn officers, operating 7 days a week, 24 hours a day. The peace officers have Statewide police authority, full powers of arrest and are vested with law enforcement powers pursuant to California Penal Code Section 830.2. UPD officers enforce local, state and federal laws both on and off campus and as state officers, their police authority includes concurrent jurisdiction with the Chico Police Department on adjacent streets and in the surrounding community. The UPD provides 24-hour patrol protection of university buildings, property, parking lots, and residence halls. Officers investigate crimes, alarms and suspicious incidents and persons, and provide responses to medical and fire incidents on premises. The UPD also responds to emergency calls from the ATRC.

Other law enforcement agencies include the City of Chico Police Department and the Butte County Sheriff Department. Both are available to provide backup if needed, per existing agreements.

Fire Protection

The City of Chico Fire Department provides first response to emergencies in the unincorporated area through the Chico Urban Area, including Chico State's main campus. The Department operates six fire stations and a Fire Training Center. A population of over 68,000 people in a 28-square mile area is served by the Department (See Figure 3.11-1).

Under the command of a Fire Chief, the Department has 69 full-time personnel, 66 of which are uniformed. The department also maintains a force of 36 volunteer firefighters who are used on large emergencies for a total of 105 personal.

The nearest fire stations to the main campus are Station #1 (182 East 5th Avenue) and Station #2 (842 Salem Street). Refer to Figure 3.11-1 for a location map showing the station locations. Station #2 is staffed by three firefighters and is equipped with a 1,500 Gallon Per Minute (GPM) Engine and a 110 foot aerial ladder truck and would response to an emergency on the main campus on the north side of Big Chico Creek. Station #1 is staffed with four firefighters with the same equipment as Station #2 and would be the first station to respond to an emergency on the main campus that is on the south side of Big Chico Creek.

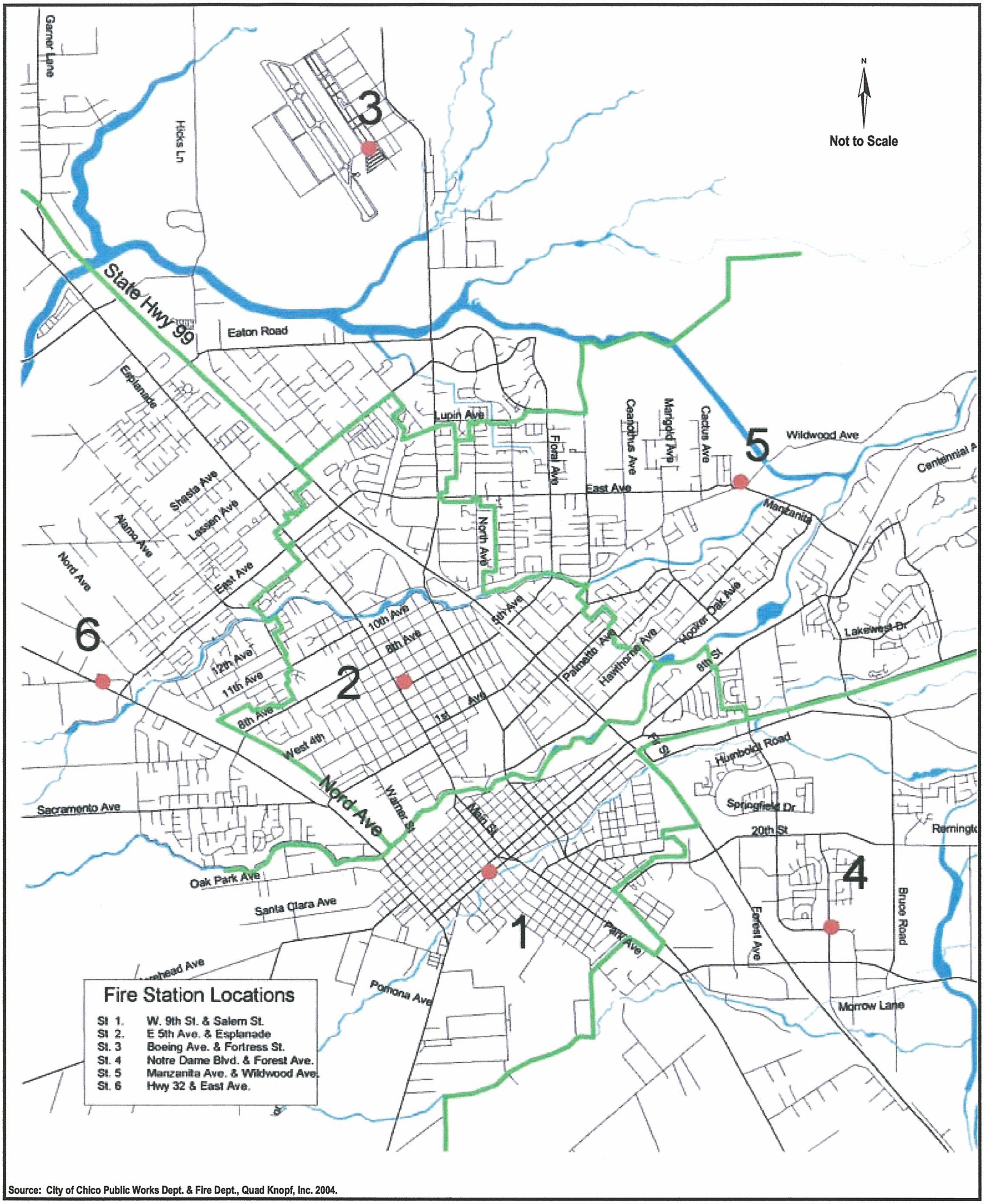
Since the ATRC facilities are in the unincorporated area of Chico, Butte County Fire Station #44 is first due to respond to an emergency. Station #44 is located on 2344 Fair Street, south of the City of Chico, approximately two miles from the ATRC. Employees of Station #44 are made up of California Department of Forestry and Fire Protection (CDF) fire fighters and citizen volunteers. The County pays the State for CDF services under a Cooperative Agreement. The facilities and equipment that the firefighters operate in Station #44 are both State and County owned. Fire Station #44 has one Type 2 Fire Engine which holds approximately 500 gallons of water. There are three full-time employees at the station year round and three seasonal firefighters during the fire season.

The Insurance Services Office (ISO) is an agency which evaluates fire protection features for all fire departments for purposes of establishing rates for insurance underwriters. ISO uses a rating system that is based on a scale of one to ten, with one being the best fire protection rating and ten being the worst. In order to determine an area's rating, the ISO uses a formula where the primary factors are the availability of both water and fire protection service in the area. The ISO rating for the main campus is 2 and for the ATRC the ISO rating is 8.

All of the Fire Stations within the City of Chico would provide back up for Stations #1 and #2 if needed at the main campus. Stations #1 and #45 would provide back up to Station #44 if needed at the ATRC.

Medical Facilities

There are several hospitals/clinics within the vicinity of the CSU Chico campus and ATRC. The main hospital in the City of Chico is Enloe Medical Center, which is located on 1531 Esplanade approximately one mile from the main campus and approximately six miles from the ATRC. The Enloe Medical Center has a total of 391 beds and is a full-service hospital and outpatient care facility. It severs as the region's Level II trauma center, rehabilitation center, and several other major treatment centers including cancer therapy, cardiac care, rehabilitation, behavioral health, orthopedic, neuroscience and maternity. The other major facility in the region is the Chico Community Hospital, which has 129 beds is also a full-service hospital and outpatient facility.



Source: City of Chico Public Works Dept. & Fire Dept., Quad Knopf, Inc. 2004.

Quad Knopf

CITY OF CHICO
FIRE DEPARTMENT

Figure 3.11-1

Job No.: 03496

The Acute Care area of the Student Health Service on the CSU Chico campus functions as a walk-in clinic. It is designed to accommodate students who need immediate medical attention. The Acute Care Clinic also makes time to address minor problems as well. The clinic has thirty-two staffed personal, from registered nurses to administrative staff. The clinic offers x-rays, a Student Laboratory which is certified as a high complexity laboratory by the Federal Government, a pharmacy which is licensed by the State of California, and women health care services.

There are several Emergency Medical Services (EMS) that provided EMS services within the Chico area. Fire Stations #1 and #2 provide first response care and depending on the type of emergency, either First Responder EMS or Enloe Medical Center Ambulance Service. First Responder EMS covers 911-response areas in Butte County, including the City of Chico. However, the City of Chico service area is covered cooperatively with Enloe Medical Center Ambulance on a North/South response area rotation.

Education and Schools

There are several elementary, middle and high schools throughout the Chico area. Butte College is opening a new Chico Center in Chico to offer junior college courses as well. This project represents an improvement to an existing CSU Chico campus to meet the needs for future growth in the area.

Road Maintenance

The City of Chico Public Works Operations and Maintenance Division is responsible for maintaining City roads within the City of Chico. The Butte County Department of Public Works is responsible for maintaining County roads around the ATRC.

Water Supply/Wastewater Systems

The main water supply for CSU Chico is obtained from California Water Service Company (Cal Water), Chico District located at 2222 Whitman Avenue. Landscape water is obtained from a non-potable well on the campus. Water supply for the ATRC is supplied by onsite wells that supply drinking and landscape water.

CSU Chico wastewater is treated at the City's Wastewater Treatment Plant located on River Road west of Chico. Wastewater at the ATRC is disposed onsite through septic/leach field systems and animal waste lagoons.

More information on water supply and wastewater facilities is discussed in Section 3.7 Hydrology/Water Quality Section.

Drainage and Flood Control

The City of Chico Public Works Department is responsible for the City and Urban Area storm water drainage conveyance system, which includes gutters, swells, ditches, culverts, storm drain inlets, catch basins, storm drainage pipes, and detention facilities. The City is 28.7 square miles, while the Urban Area encompasses 56 square miles. There are five channels traversing the Urban Area that accept storm water runoff. They are Comanche Creek, Little Chico Creek, Big Chico Creek, Lindo Channel, and Mud/Sycamore Creek.

All of the channels that traverse the Urban Area are tributary to the Sacramento River, a source of drinking and agricultural water for the State of California. The City operates and maintains a vast municipal storm drainage system that consists of miles of pipe, open drainage ditches and detention basins. The detention basins have water quality features incorporated into them.

More information on drainage and flood control measures is discussed in Section 3.7 Hydrology/Water Quality Section.

Solid Waste Management

There are several sources of solid waste in the City of Chico. The most prominent are residential, commercial, industrial, construction/demolition, and self haul. Through the Environmental Audit for Chico State Campus done in 1999 – 2000, it was estimated that the main campus and the ATRC generated 885,703 pounds of solid waste each year. Hazardous waste is also produced by the science classes such as chemistry and biological laboratories. Campus transportation vehicles generate motor oil and antifreeze waste and medical wastes are generated at the Student Health Center. All hazardous waste products are either recycled or disposed of through the proper agencies with the City or County. Asbestos generated from the demolition of old buildings and remodeling projects are typically taken to a landfill that is licensed to handle asbestos material.

All solid waste generated on the main campus and the ATRC is currently disposed of at the Neal Road Landfill in Durham, California, approximately ten to fifteen miles from the project sites. North Valley Disposal Transfer collects and transfers the waste to the Neal Road landfill on a weekly basis form the main campus and ATRC. The Neal Road landfill is owned and operated by Butte County Public Works Department. The facility is located on 165 acres with a disposal area of 101 acres. The landfill permitted capacity is 26,204,400 cubic yards, which, by October 2001, had a remaining capacity of 6,887,098 cubic yards. Estimated closure date is 2018. This landfill is a Class II and III landfill and accepts construction/demolition, tires, and mixed municipal waste.

Animal waste products on the ATRC are converted into useable compost and used on the farm. Some of the animal waste is also distributed in the lagoons on the ATRC property. Animal fatalities and bye-products from the butcher station are picked up by Northstar Rendering Company located off Highway 99 in Butte County. Pick-ups for these bye-products are done once a week, with animal fatalities picked up by the next day.

Utility Services

Electricity is supplied from Arizona Power Company, which buys its power from Pacific Gas and Electric Company (PG&E). Natural gas is supplied by PG&E. SBC and AT&T provide communication services to the main campus and ATRC.

Regulatory Setting

This section briefly describes federal, State and local regulations, permits, and policies pertaining to utility and service systems as they apply to the proposed project.

Federal and State

Police. The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, codified at 20 USC 1092 (f) as a part of the Higher Education Act of 1965, is a federal law that requires colleges and universities to disclose certain timely and annual information about campus crime and security policies. All public and private post secondary educational institutions participating in federal student aid programs are subject to it.

Fire. The Uniform Building Code (UBC) contains requirements that relate to fire safety. The building permit process includes review of building plans for compliance with the applicable provisions of the UBC. In addition, all operations and buildings must meet Uniform Fire Code requirements as adopted by the County of Butte.

Solid Waste Management. California Assembly Bill 939 (AB 939) established the requirement for every jurisdiction in the state to develop comprehensive plans for the reduction of solid waste. These plans are required to outline programs and policies to reduce, recycle, or otherwise divert from landfill disposal a minimum of 25 percent of each jurisdiction's solid waste stream by 1995 and 50 percent by the year 2000.

Solid waste diversion refers to the amount of material that is diverted from landfill disposal via source reduction programs, recycling, and composting. Only those materials normally disposed of at permitted solid waste landfills are included in solid waste diversion estimates. Approximately 54 percent of the solid waste stream was diverted in 1990 using waste diversion tactics within the county. A large part of this diversion was achieved through the recycling of road pavement material, rather than standard residential and commercial wastes. The primary diversion tactics are described below.

- **Source Reduction.** Source reduction refers to any action that causes a net reduction in the generation of solid wastes. While source reduction is occurring in a variety of forms in the county, measuring the reduction has been infeasible because the information necessary to quantify the activities is not available.

- **Residential Recycling.** Several types of recycling programs may be employed as waste diversion practices. These include drop-off and buy-back centers, city/county sponsored source reduction programs, and programs run by private organizations. Based on a survey of recyclers, an estimated 956 tons of solid wastes were diverted in the county in 1990 through residential recycling programs (not including oil).

- **Non-Residential Recycling.** Incinerator ash recycling and roadway pavement recycling account for virtually all of the unincorporated county's non-residential diversion.

Electricity. The Federal Energy Regulatory Commission oversees the transmission and sale of electricity in interstate commerce, licensing of hydroelectric plants and oversight of related environmental matters. The California Public Utilities Commission has adopted rules for the planning and construction of new transmission facilities.

Water Supply/Wastewater Systems, Drainage and Flood Control. The 1987 Clean Water Act amendments required the U.S. Environmental Protection Agency (EPA) to develop a tiered implementation strategy for the National Pollution Discharge Elimination System (NPDES) Storm Water Program. Phase I began in the early 1990s and covered municipalities and urban areas of 100,000 population and above. Phase II regulations were published in the Federal Register on December 8, 1999. The Chico Urban Area has been identified as one which is being required to comply with NPDES Phase II permitting because it has been identified as an "Urbanized Area" by the Bureau of Census, specifically, per regulation:

> Owners or operators of small, municipal, separate, storm sewer systems (MS4s) located in any incorporated city, county, or place under the jurisdiction of a governmental entity within a census-designated urbanized area. Small MS4s located in a census-designated urbanized area (such as the Chico Urban Area) must apply for a NPDES permit by March 10, 2003. Some cities or counties may be partially located in census-designated urbanized areas. Only the portion located in the urbanized area would be automatically regulated.

In the Chico Urban Area, the County of Butte, City of Chico, Chico Unified School District, and CSU Chico are required to develop a storm water management program that implements six minimum measures focusing on a Best Management Practice (BMP) approach. The BMPs chosen by the operators of the MS4s should be designed to reduce pollutants in urban storm water compared to existing levels in a cost-effective manner. BMP's include public education, treatment practices, operating procedures, and practices to control site runoff, spillage, or leaks.

3.11.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

This section identifies the standard used to identify and measure potential impacts, and the limitations that exist with regard to the imposition of mitigation measures in connection with the project.

Consistent with standards set forth in Appendix G of the State CEQA Guidelines, the proposed project will have a significant environmental effect on public utilities and services if it will:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives for any of the public services (law enforcement, fire protection/emergency medical services, solid waste collection and disposal, parks and recreation, schools, road maintenance/snow removal, power/fuels, wastewater treatment and disposal, water supply and distribution, and storm drainage).

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

- Have insufficient water supplies available to serve the project from existing entitlements and resources, or new or expanded entitlements would be needed.

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

- Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs.

- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

Impact #3.11-1: Provision of adequate public protection to serve the proposed project.

Discussion/Conclusion: Police protection is provided primarily by the University Police Department, with secondary support from City Police and County Sheriff's Departments. Fire protection is provided by the City of Chico Fire Department and Butte County Fire Department. The most pressing problem confronting all public services within the City of Chico and the entire County is budget cuts in general funds and understaffing. Due to the current financial crisis of the State of California, public services such as fire, police, and other vital service providers are finding it difficult to provide proper services to the general public. Programs like neighborhood watch programs, private security agencies and volunteer's aid local law enforcement and fire fighters with protecting the citizens of Butte County.

Law Enforcement. The CSU Chico University Police force will continue to patrol the main campus even when the proposed new, reconfigured building facilities and new parking areas, including the proposed parking garages are completed. Since there will be an increase of new students on campus and new parking lots and larger facilities to patrol, this is a ***potentially significant impact***.

<u>Mitigation Measures</u>

Mitigation Measure #3.11-1a:

Currently there are several "Blue Light" emergency telephones located throughout the campus which ring directly into the Communications Center of the University Police Department. These auto-dialing phones may be used to summon emergency police, fire or medical assistance. Before construction is completed on new facilities on the main campus, new "Blue Light" phones can be added to ensure safety at these locations.

Community Service Officers (CSO) of the CSU Chico Police Department are student positions. The CSO provides support to the staff of sworn and non-sworn police personnel. Duties include parking enforcement, special event security, escort detail, bicycle licensing, property engraving, room unlocks, clerical dispatch support, and campus lot patrol. More of these positions can be created if needed to ensure proper enforcement of laws and safety concerns.

Implementation of the above mitigation measure will reduce the impact to a level of ***less than significant***.

Fire Protection. The proposed project site is within the jurisdiction of the City of Chico Fire Department and the Butte County Fire Department. The nearest fire stations (Station #1 and #2) would respond to an emergency to the main campus and Station #44 (Butte County Fire Department), would be first to respond to an emergency at the ATRC.

Due to the City's Fire Department commitment to excellence and an insurance rating of ISO 2, the second highest possible on a rating scale of 10, the average response time to emergencies to the campus and throughout the city is less than four minutes. Because the City of Chico Fire Department already serves the main campus site, there are no significant impacts associated with the main campus.

Butte County Fire Department has an overall insurance rating of 4, as long there is a hydrant within 1000 feet of the main facilities of the ATRC. The Station serving the ATRC site has a rating of 8. Response time to an emergency call to the ATRC can range from approximately five to thirty minutes. Due to the nature of the response time, there are fire extinguishers and a water truck full of water that will be a back up in case Station #44 could not respond. However, due to the lack of working fire hydrants near the facilities of the ATRC, this is considered a ***potentially significant impact.***

<u>Mitigation Measure</u>

Implementation of the following mitigation measure will reduce this impact to a level of ***less than significant:***

Mitigation Measure #3.II-Ib:

> *Before any new facilities are constructed, the ATRC will provide a detailed fire safety plan that will uphold all Federal and State fire codes for all facilities within the ATRC.*

Medical Facilities. There are several hospitals/clinics within the vicinity of the CSU Chico campus and ATRC. All these medical facilities offer some type of medical service that is fundamental to the community.

There are several Emergency Medical Services (EMS) that provided EMS services within the Chico area. The University Police provide immediate care and Fire Stations #1 and #2 would provide first response care if needed, and depending on the type of emergency, either First Responder EMS or Enloe Medical Center Ambulance Service would arrive and provide care. First Responder EMS covers 911-response areas in Butte County, including the City of Chico. However, the City of Chico service area is covered cooperatively with Enloe Medical Center Ambulance on a North/South response area rotation. Due to location of the main campus and the ability of service providers to accommodate additional service demands, this impact is ***less than significant***.

For added public safety, emergency plans will be placed and posted for all employees and students as well as reference and training manuals. Eye wash stations or showers will be provided were needed and First Aid kits will be placed within the main farming facilities. With these measures in place, this impact is ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Education and Schools. The proposed project will not result in an increased demand for new elementary or high schools. This project is the adoption of a Campus Master Plan, and will serve to attract mainly college age students, which will be accommodated by the project. A slight increase in student population at K-12 schools may result from families of staff and faculty additions necessitated by the increase in student population, but this increase is expected to be minimal. The impact is ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Water Supply/Wastewater Systems. The CSU Chico has measures in place to conserve water and to cut back on waste products. There will be a slight increase for water at the main campus, however at the time of this report, there is an adequate water supply to serve the campus; therefore, the impact is ***less than significant.***

CSU Chico wastewater is treated at the City's Wastewater Treatment Plant and wastewater at the ATRC is disposed onsite through septic/leach field systems and animal waste lagoons. There will be a slight increase of wastewater due to the increase of students on the main campus, and a slight increase of wastewater at the ATRC. However, these increases will not affect the treatment facility in the City of Chico or the onsite disposal system at the ATRC. Impacts due to the improvements to the main campus and the ATRC are therefore considered ***less than significant***.

<u>Mitigation Measure</u>

No mitigation measures are required.

Solid Waste Management. All solid waste generated on the main campus and the ATRC is currently disposed of at the Neal Road Landfill in Durham, California, approximately ten to fifteen miles from the project sites. North Valley Disposal Transfer collects and transfers the waste to the Neal Road landfill on a weekly basis form the main campus and ATRC. The Neal Road landfill is owned and operated by Butte County Public Works Department. The landfill permitted capacity is 26,204,400 cubic yards, which, by October 2001, had a remaining capacity of 6887,098 cubic yards. Estimated closure date is 2018. This landfill is a Class II and III landfill and accepts construction/demolition, tires, and mixed municipal waste.

The Facilities Management and Services Custodial Department of CSU Chico provides professional cleaning services to all University buildings, excluding security areas. The Custodial Department keeps sixty-four regular employees on staff with two supervisors, and one manager. The Custodial Department is kept very busy with a wide range of daily, monthly, and periodic cleaning tasks and special events.

The Facilities Management and Services Grounds Department provides professional grounds services to University natural environs that exist on the 119 acres which comprise the campus property. The Grounds Department keeps fifteen employees and one manager very busy with a wide range of tasks, which includes maintaining the campus arboretum and the George Peterson Rose Garden, as well as giving us the most beautiful campus in the CSU system. At the time of this report, impacts to the staff of the Custodial and Grounds Department from the proposed project would be insignificant.

Animal waste products on the ATRC is converted into useable compost and used on the farm. Some of the animal waste is also distributed in the lagoons on the ATRC property. Animal fatalities and bye-products from the butcher station are picked up by Northstar Rendering Company located off Highway 99 in Butte County. Pick-ups for these bye-products are done once a week, with animal fatalities picked up by the next day. This impact is therefore ***less than significant***.

<u>Mitigation Measure</u>

No mitigation measures are required.

Impact #3.11-2: Maintenance of public facilities, including roads.

Discussion/Conclusion: Road Maintenance. The City of Chico Public Works Operations and Maintenance Division is responsible for maintaining City roads within the City of Chico. The Butte County Department of Public Works is responsible for maintaining County roads around the ATRC. Since there will not be need for any new roads around the ATRC and the main campus, this impact is ***less than significant***.

Mitigation Measure

No mitigation measures are required.

Impact #3.11-3: Need for new systems for power or natural gas.

Discussion/Conclusion: Utility Services. Because the improvements to the main campus and the ATRC do not require additional public facilities beyond those typically provided in already to these facilities, the project would not be expected to increase the demand for public facilities beyond the levels provided and planned for by public utilities in the area. This impact is therefore ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.11-4: Need for additional solid waste disposal.

Discussion/Conclusion: Incidental refuse collection containers may be installed in the new parking structures and new building facilities and reconfigured buildings and parking lots, but overall volumes of solid waste generated by the campus will not increase. This impact is considered ***less than significant.***

Mitigation Measures

No mitigation measures are required.

Impact #3.11-5: Need for additional sewage treatment.

Discussion/Conclusion: Existing sewer lines will be extended to serve new facilities and replaced if necessary. The proposed parking lots and parking structure will not require sewer services. Runoff from the parking lots and garage will flow to the existing stormwater management system. Impacts on the sewer system will be ***less than significant.***

Mitigation Measure

No mitigation measures are required.

3.12 PARKS AND RECREATION

3.12.1 SETTING

There are extremely limited opportunities for both indoor and outdoor student recreation at CSU Chico. Currently, students must utilize indoor court and outdoor Physical Education field facilities during limited times when these facilities are not being used for academic programs. The CSU Chico Campus Master Plan 2004 proposes the construction of a student recreation center and the long-term acquisition of nearby properties to address the lack of accessible recreational resources available to CSU Chico students. The proposed Campus Master Plan 2004 is designed to accommodate the anticipated increase in student population as well as address current unmet needs. The Campus Master Plan 2004 includes a number of new recreational facilities designed to serve both the student population and the community-at-large. The Plan proposes to acquire the Rio Chico area and construct a physical education and aquatic center facility. The site lies adjacent to the planned Wildcat Activity Center and is connected by pedestrian bridge directly to the campus physical educational fields and facilities. There has been considerable interest from the Chico Unified School District and the greater Chico community for a swimming pool that could serve both the instructional and recreational needs of these groups. In addition to the pool itself, the pool facility would need to have bathrooms, showers, locker rooms and other related facilities. The CSU Chico-owned surface parking lot to the west of the site would also be part of this development that would include 46,200 ASF/71,100 GSF, in the following configuration:

- A physical education facility that would accommodate additional basketball, multipurpose and specialized indoor courts, aerobics, dance and fitness rooms as well as showers, small classroom and office spaces

- A recreationally oriented aquatic center with pool and outdoor areas suitable for gatherings. The aquatic center would include a 25-50 meter pool (5-7 lanes) and associated facilities totaling approximately 15,000 square feet

- Open space plaza at the southeast corner of First Street and Cherry Street

In addition to the Rio Chico Physical Education and Aquatic Center Facility, the Campus Master Plan 2004 calls for additional outdoor physical education facilities. The outdoor physical education space needed for playfields and other facilities has fallen below the State standard allotment of 34 acres for a CSU campus of an enrollment of 15,000. Additional outdoor field space will be lost with the future expansion of the Central Plant facility that lies at the south end of the athletic field area. The Campus Master Plan 2004 proposes acquisition of approximately five acres in proximity to the existing physical education facilities. The most appropriate sites lie west of the railroad tracks along Highway 32. A CSU Chico administration and faculty task force has projected that facilities totaling 38 acres consisting of additional athletic and recreational-related open space are needed beyond the standard State allotment discussed above. This Master Plan does not specify where these facilities would be located; however, some of the land may be purchased in the Highway 32 corridor or other nearby locations.

The Campus Master Plan 2004 also includes the Wildcat Activity Center. This student recreation center concept is envisioned as a two-level 124,568 to 133,400 square foot indoor recreation center to be placed on University-owned sites, bordered by First Street, Cherry Street, Second Street and the railroad right-of-way on the north, east, south and west, respectively. This location is close to the existing CSUS parking structure and to the Rio Chico site, programmed for future acquisition for development of physical education facilities and a recreational Aquatic Center. The Campus Master Plan 2004 contains adequate additional recreation facilities to accommodate the projected student population.

3.12.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated;

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The Initial Study determined that the adoption of the Campus Master Plan 2004 would have a less than significant impact on the use of existing neighborhood and regional parks, since the plan would contain adequate recreational facilities to serve the needs of the students. This issue is not further evaluated in this EIR.

Impact #3.12-1: Construction of the new recreational facilities could result in impacts to the physical environment.

Discussion/Conclusion: The proposed Rio Chico Physical Education and Aquatic Center facility is located in proximity to Big Chico Creek and construction of the facility could have an impact on riparian resources. This impact is ***potentially significant.***

Mitigation Measure

Implementation of the following mitigation measure will reduce this potential impact to a ***less-than-significant level.***

Mitigation Measure #3.12-1:

All buildings and activity areas shall be located at least 100 feet from the top of the stream banks. BMP's selected shall be in accordance with the California Stormwater Quality Association "Stormwater Best Management Practice Handbook," or other *appropriate criteria as determined by the University in consultation with the City of Chico.*

The erosion control plan shall indicate that proper control of erosion, sedimentation, siltation and other pollutants will be implemented per NPDES permit requirements and University standards. The plan shall address storm drainage during construction and propose BMPs to reduce erosion and water quality degradation. The plan shall indicate whether grading will occur in the winter months. If grading is proposed for the winter months, mechanisms to avoid sedimentation of creeks and damage to riparian habitat shall be identified. The plan shall also specify restoration measures for graded areas including but not limited to landscaping, revegetation, the use of rice straw or other weed free vegetative material for erosion control measures.

Drainage facilities shall be protected as necessary to prevent erosion of the onsite soils immediately following grading activities. In addition, cut slopes and drainage ways within native material shall be protected from direct exposure to water runoff immediately following grading activities.

3.13 TRANSPORTATION AND CIRCULATION

This section analyzes the transportation and circulation impacts associated with development in accordance with the Chico Campus Master Plan 2004. The Campus Master Plan 2004 plan will guide development and operation of the campus for the foreseeable future and identified key infrastructure and policies that may ultimately affect transportation and circulation in the area near CSU Chico and throughout the City of Chico as a whole.

This analysis addresses the impacts of implementing plans for two separate but linked areas, as noted in Figure 2-3. The Campus Master Plan 2004 describes improvements that will be made to the main campus located in downtown Chico. The Master Plan also describes programs and improvements that are planned for the Agricultural Center located south of Chico on Hegan Road.

The analysis summarized herein deals with current traffic conditions in the area of the campus, with conditions occurring with immediate implementation of planned improvements, and with cumulative conditions occurring in the future with other development in Chico, continuing regional traffic growth (i.e., year 2025 conditions) and full campus occupancy at the enrollment levels anticipated under the Master Plan. The full report is contained in Appendix F.

For the purpose of the traffic analysis contained in this Draft EIR, the project is defined as the adoption of a Master Plan allowing the construction and operation of CSU Chico with an ultimate enrollment of 20,000 students (total body count) and the development of two specific infrastructure improvements that could impact local circulation.

Enrollment

Over the last few years the total enrollment (i.e., body count) at CSU Chico has been about 16,000 students. Measured in this fashion, (i.e., head count), the current Master Plan also accommodates about 16,000 students. The new Campus Master Plan 2004 is intended to accommodate an enrollment of 20,000.

Parking

The current campus parking supply has been quantified at 2,211 spaces, or about 0.14 spaces for every enrolled student. The proposed Campus Master Plan 2004 envisions the development of new parking facilities as well as the elimination of some existing on-site parking. Major changes to parking include the development of a multi-level parking structure along 2nd Street in the area of Ivy – Cherry Street, as well development of a multi-level parking structure in the vicinity of new student housing proposed off of Sacramento Street. Under the proposed Campus Master Plan 2004, the on-site parking supply will increase by about 1,436 spaces to 3,647 spaces, or 0.18 spaces for each enrolled student under the new plan.

Circulation System Modifications

The circulation system in the vicinity of the CSU Chico campus will be relatively unchanged under the proposed Campus Master Plan 2004, but some local changes are planned. In the area of the new parking structure, Chestnut Street is to be closed between 2nd Street and 3rd Street. Full or partial closure of First Street between Ivy Street and Orange or Cedar Street is also proposed. Rio Chico Way will likely be closed as well.

Student Housing

The Campus Master Plan 2004 includes development of new on-campus student housing in the area of Warner Avenue south of Sacramento Street. Approximately 1,300 bed spaces are planned in this area.

Agricultural Center

Additional classroom space is planned, and a special events center accommodating 3,000 persons is proposed.

3.13.1 SETTING

Study Methodology

The methodology used to prepare this traffic impact study follows an approach that is recognized by members of the traffic engineering profession and is consistent with CEQA, the California Department of Transportation (Caltrans) and City of Chico guidelines for traffic studies.

The first phase of the study included the collection of traffic data and the analysis of that data to determine existing operating conditions. Available data was reviewed and new manual traffic counts were taken during the morning and evening peak traffic hour to develop turning movements at the 16 existing study intersections in the vicinity of the project site. The *2000 Highway Capacity Manual (HCM)* was used to analyze this data for describing the operational characteristics of major intersections near the project. Standards employed by the City of Chico were used to identify the capacity and Level of Service. Current pedestrian, bicycle and transit facilities are also described.

The second phase of the analysis involved estimating trip generation for the planned project. The Institute of Transportation Engineers' publication *Trip Generation-Seventh Edition* was used as an initial basis to determine the trips to be generated by implementation of the Campus Master Plan 2004 under the identified enrollment levels.

The third phase of the study determined the distribution of trips into and out of the project and adjacent streets, based primarily on the location of anticipated parking as well as the location of student housing, employment centers, and other land uses.

The fourth phase was to assign the project trips to the street network and to add these new trips to the current background day traffic volumes and to evaluate resulting traffic operations.

The fifth study phase addresses cumulative impacts of implementing the Campus Master Plan 2004. Because the proposed Campus Master Plan 2004 replaces a previous planning document, the cumulative analysis addresses two future scenarios: 1) year 2025 conditions with enrollment under the previous master Plan (i.e., 16,000 students) and 2) year 2025 conditions with the Campus Master Plan 2004 enrollment level (i.e., 20,000 students). The current version of the Chico regional travel demand forecasting model was used to create the baseline cumulative condition, and the incremental increase in traffic associated with another 4,000 students was manually assigned to create the cumulative plus project condition.

Study Area

After a preliminary investigation of the existing traffic circulation patterns, it was determined that the traffic analysis should investigate the operational characteristics of the following intersections on the streets serving the CSU Chico campus and the ATRC:

1. Nord Avenue (SR 32) / West Sacramento Avenue
2. Sacramento Ave / Warner Avenue
3. Esplanade / East 1st Avenue
4. Esplanade / Sacramento Avenue
5. Warner Avenue / Legion Avenue
6. Walnut Street (SR 32) / West 2nd Street
7. West 2nd Street / Cherry Street
8. West 2nd Street / Ivy Street
9. West 2nd Street / Hazel Street
10. West 2nd Street / Chestnut Street
11. West 2nd Street / Normal Avenue
12. Broadway Street / 2nd Street
13. Main Street / 2nd Street
14. Park Avenue / Midway
15. Midway / Hegan Lane
16. Hegan Lane / East ATRC Access

The locations of these intersections along with the existing road network are shown on Figures 3.13-1a – 3.13-1c.

Existing Conditions Analysis

This section describes the circulation facilities serving the CSU Chico campus.

Key Roadways

A brief description of the key roadways serving the campus is provided below.

Esplanade – Main Street – Broadway. Esplanade, Broadway, and Main Street are arterial streets that together provide access to the eastern side of the CSU Chico campus. The Esplanade is a four lane street with primary access via signalized intersections. On-street parking is prohibited on the Esplanade. Main Street and Broadway form a north-south one-way couplet that traverses the downtown area. Access occurs via closely spaced signalized intersections, and on-street parking is permitted in many locations.

Nord Avenue – Walnut Street. Nord Avenue and Walnut Street are north-south arterial streets that serve the area west of the CSU Chico campus. Nord Avenue and Walnut Street are two lane facilities.

Sacramento Avenue. Sacramento Avenue is an east-west minor arterial street providing access to the north end of the CSU Chico campus and to Chico High School. Sacramento Avenue begins at an intersection on Nord Avenue and extends easterly to an intersection on The Esplanade. Sacramento Avenue is a two-lane facility with on street parking permitted.

West 2nd Street is designated an arterial street in the City of Chico General Plan Circulation Element. West 2nd Street extends easterly from an intersection on Walnut Street across the south end of the CSU Chico campus to the Main Street – Broadway Couplet and continues to an intersection with Mangrove Avenue. Through the study area West 2nd Street is a four-lane facility with left turns permitted from the inside through lanes.

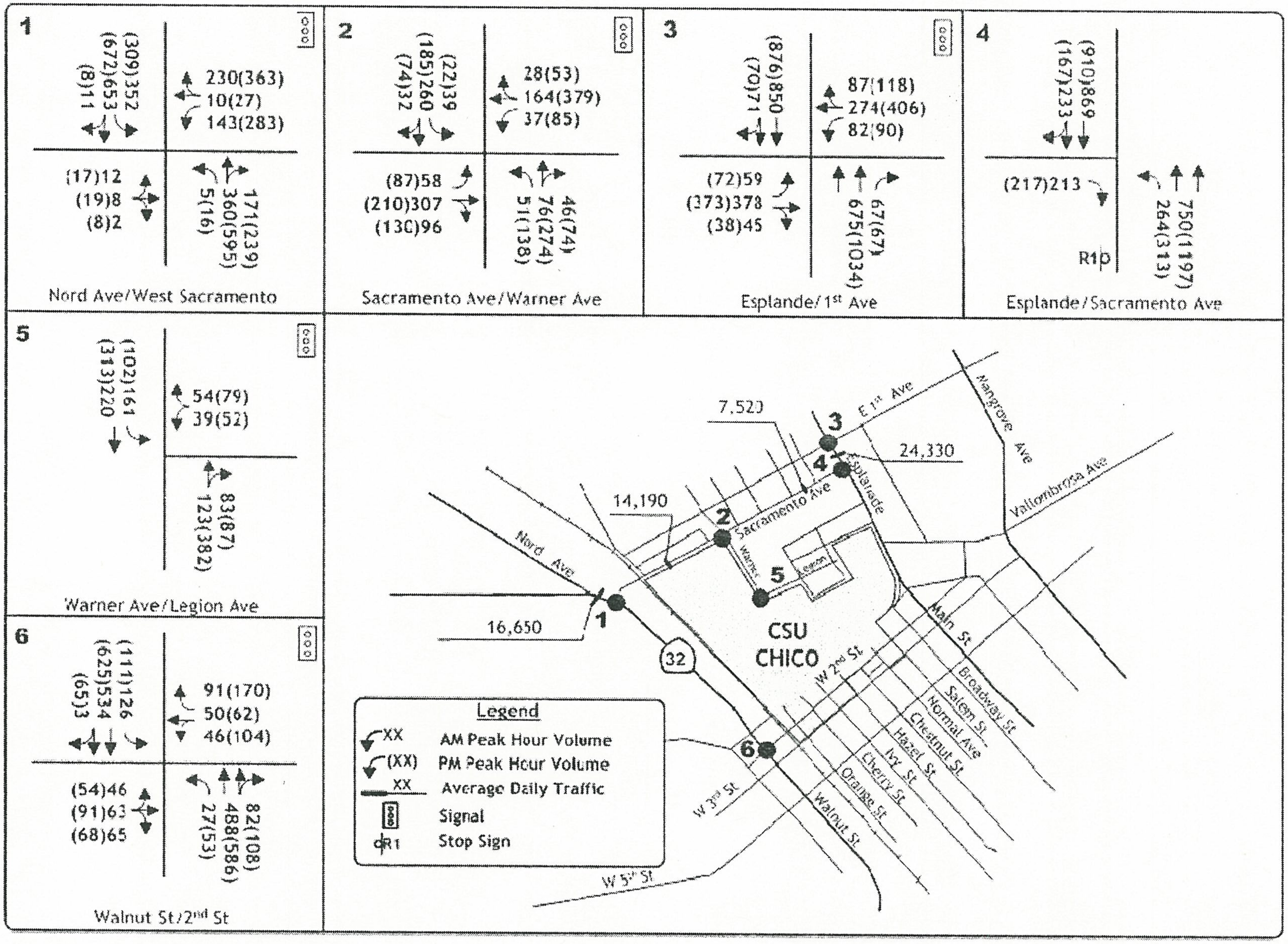
Warner Street is a north-south minor arterial street that traverses the center of the CSU Chico campus. Warner Street is a two-lane facility.

The Midway is a north-south minor arterial street that extends southerly from Chico to the community of Durham. This is a two-lane road.

Hegan Lane is an east-west collector road that serves the area near ATRC. This two lane rural road connects Dayton Road on the west with The Midway on the east.

Existing Traffic Volumes and Level of Service

New traffic volumes counts were conducted on study area streets at intersections on November 18, 2004 for use in this study. Existing intersection Levels of Service at study intersections are shown on Table 3-13.1. These calculations are based on the methodologies contained in the 2000 Highway Capacity Manual and include assumptions relating to the effects of signal timing, pedestrian and bicycle traffic. Based on instruction from the City of Chico, these calculations assume general Peak Hour Factors for overall conditions during the a.m. and p.m. peak hour (i.e., PHF of 0.90 and 0.95, respectively). Because campus traffic can be concentrated into short time periods immediately before/after classes, conditions at these times may be worse than are projected for the peak hour as a whole.



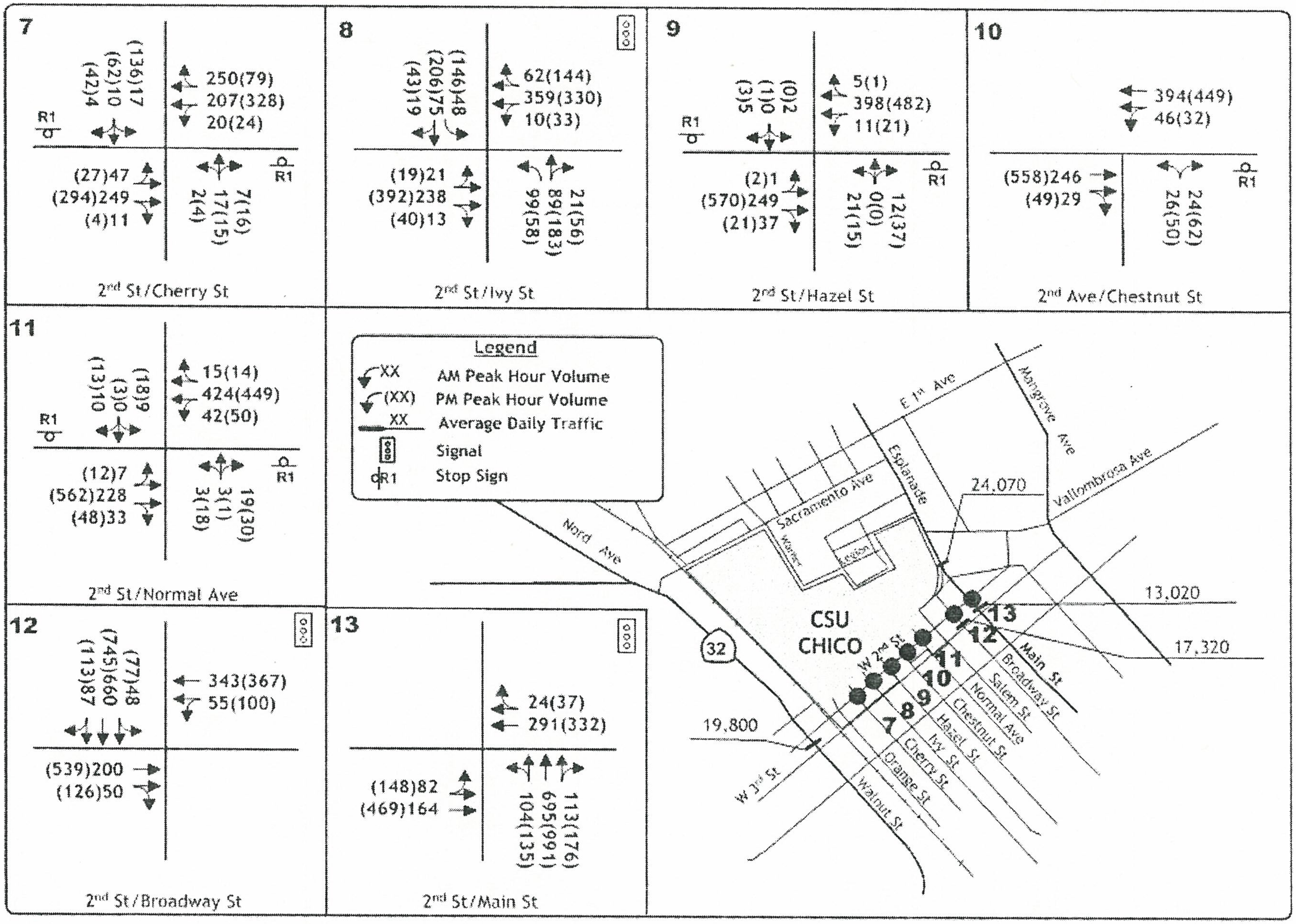
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-1a

Job No: 03496

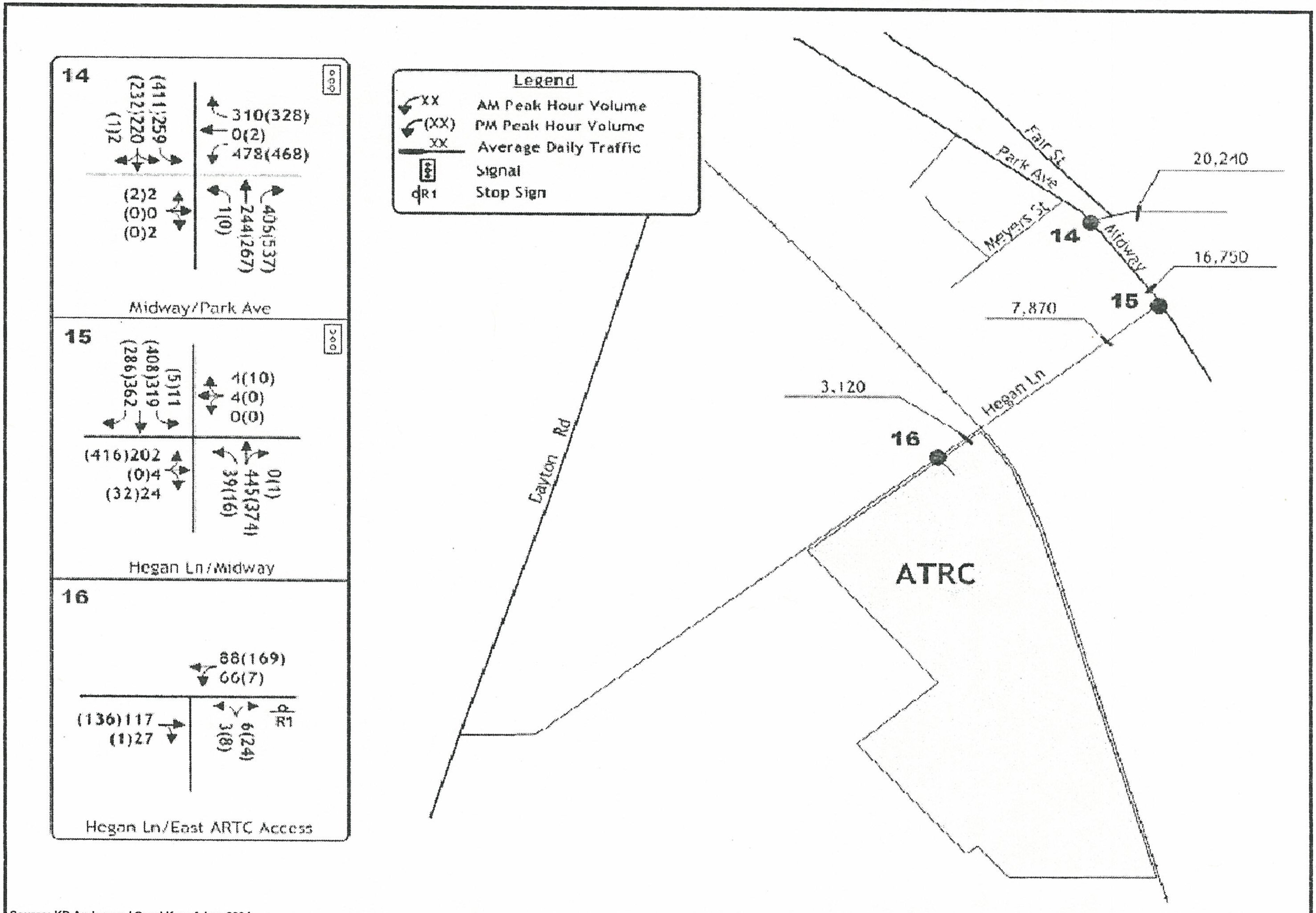


Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-1b



Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-1c

Job No: 03496

As shown in Table 3.13-1, existing traffic volumes are indicative of LOS D or better conditions on arterial and collector streets. Thus current Levels of Service at all study intersections meet City and Caltrans minimum standards.

Table 3.13-1
Existing Peak Hour Intersection Levels of Service

		A.M. Peak Hour		P.M. Peak Hour	
Intersection	**Control**	**Average Delay**	**LOS**	**Average Delay**	**LOS**
1. Nord Avenue / Sacramento Street	Signal	23.7 sec	C	47.2 sec	D
2. Sacramento Ave / Warner Avenue	Signal	27.5 sec	C	36.4 sec	D
3. Esplanade / East 1st Street	Signal	20.5 sec	C	22.6 sec	C
4. Esplanade / Sacramento Street (overall)	EB Stop	(2.0 sec)	(A)	(3.6 sec)	(A)
NB left		18.0 sec		18.2 sec	
EB approach		22.6 sec		20.4 sec	
5. Warner Avenue / Legion Avenue	Signal	9.5 sec	A	8.3 sec	A
6. Walnut Avenue / West 2nd Street	Signal	17.2 sec	B	18.1 sec	B
7. West 2nd Street / Cherry Street (overall)	NB/SB Stop	(1.8 sec)	(A)	(12.2 sec)	(B)
EB left		8.3 sec		8.3 sec	
WB left		7.9 sec		8.0 sec	
NB approach		16.9 sec		15.6 sec	
SB approach		16.8 sec		48.4 sec	
8. West 2nd Street / Warner Street / Ivy St.	Signal	11.7 sec	B	13.7 sec	B
9. West 2nd Street / Hazel Street (overall)	NB/SB Stop	(0.8 sec)	(A)	(0.9 sec)	(A)
EB left		8.3 sec		8.5 sec	
WB left		8.0 sec		8.9 sec	
NB approach		1`3.4 sec		15.7 sec	
SB approach		11.7 sec		14.3 sec	
West 2nd Street / Chestnut Street (overall)	NB Stop	(1.3 sec)	(A)	(2.1 sec)	(A)
WB left		8.1 sec		9.0 sec	
NB approach		13.0 sec		19.4 sec	
West 2nd Street / Normal Avenue (overall)	NB/SB Stop	(1.2 sec)	(A)	(1.8 sec)	(A)
EB left turn		8.3 sec		8.5 sec	
WB left turn		7.9 sec		9.1 sec	
NB approach		11.3 sec		19.3 sec	
SB approach		13.6 sec		21.5 sec	
12. West 2nd Street / Broadway	Signal	13.5 sec	B	14.7 sec	B
13. West 2nd Street / Main Street	Signal	12.8 sec	B	15.6 sec	C
14. Midway / Park Avenue	Signal	31.3 sec	C	29.9 sec	C
15. Midway / Hegan Lane	Signal	16.5 sec	B	22.2 sec	C
16. Hegan Lane / East ATRC Access (overall)	NB Stop	(1.9 sec)	(A)	(1.0 sec)	(A)
WB left turn		7.7 sec		7.5 sec	
NB approach		9.7 sec		9.5 sec	

The volume of traffic occurring on study area roads has also been monitored. Table 3.13-2 presents the results of new daily traffic counts conducted in November 2004 for this study.

Table 3.13-2
Current Daily Traffic Volumes

Street	Location		Classification	Daily Volume
	From	To		
Nord Avenue	West Sacramento Ave	East Sacramento Ave	Arterial	16,650
Sacramento Avenue	Nord Avenue	Warner Avenue	Minor Arterial	14,190
	Warner Avenue	Esplanade	Minor Arterial	7,520
Esplanade	East 1st Ave	Sacramento Ave	Arterial	24,330
	Vallombrosa Ave	West 1st Street	Arterial	24,070
Walnut Street	West 1st Street	West 2nd Street	Arterial	19,800
Broadway	West 2nd Street	West 3rd Street	Arterial	17,320
Main Street	West 2nd Street	West 3rd Street	Arterial	13,020
Park Avenue	Midway	SR 99	Arterial	20,240
Midway	Park Avenue	Hegan Lane	Minor Arterial	16,750
Hegan Lane	Dayton Road	Railroad	Collector	3,120
	railroad	Midway	Collector	7,870

Alternative Transportation Modes

Bicycles. The bicycle is an important mode of transportation for CSU Chico students, faculty and staff. The Master Plan notes that about 30 percent of CSU Chico students use bicycles as their primary form of travel to the campus. The spring 2000 CSU Chico Bicycle Survey recorded 4,934 bicycle parking spaces on campus, which represents about 1.1 spaces per regular bicycle user. These spaces are distributed throughout the campus and are generally associated with classroom facilities and other major student destinations.

The City of Chico General Plan notes the locations of existing and planned bicycle facilities in the area of the campus. Nord Avenue, Walnut Street, Sacramento Avenue and Warner Avenue are designated Class II facilities, while the railroad corridor adjoining SR 32 is designated a Class I facility.

Transit. Chico Area Transit System (CATS) serves the urban Chico area, and service in the vicinity of CSU Chico is readily available. The CATS Downtown Transit Center is located at 2nd Street / Salem Street. Routes 8 and 9 (Student Shuttle) traverse the campus along Warner Avenue on 30-minute headways, while Route 3 travels on Sacramento Avenue on 60-minute headways.
The Butte County Transit (BCT) system provides interregional bus service connecting various cities in Butte County. BCT Routes 1 and 2 provide service from Downtown Chico to paradise and to Oroville, respectively.

The University, in cooperation with the Associated Student Government, the City of Chico and the County of Butte, provides free student access to all CATS and BCT buses. Based on data provided by the University, approximately 250,000 free rides per year and 1,000 free rides per day are made as part of this program.

Existing Parking Conditions

Parking

The current campus parking supply has been quantified at 2,211 spaces, or about 0.14 spaces for every enrolled student. The proposed Campus Master Plan 2004 envisions the development of new parking facilities as well as the elimination of some existing on-site parking. Major changes to parking include the development of a multi-level parking structure along 2nd Street in the area of Ivy – Cherry Street, as well development of a multi-level parking structure in the vicinity of new student housing proposed off of Sacramento Street. Under the proposed Campus Master Plan 2004, the on-site parking supply is to increase by about 1,436 spaces to 3,647 spaces, or 0.18 spaces for each enrolled student under the new plan.

The supply of parking available to students, faculty and staff is an important issue affecting CSU Chico and its neighbors. The *Executive Summary – Draft California State University, Chico Parking Needs Study (2004)* revealed that about 2,211 parking spaces are available in on-campus parking facilities, including 2,143 automobile spaces and 68 motorcycle spaces. These spaces are distributed across a series of 34 parking facilities in various locations throughout the campus ranging in size from three to 305 spaces and one parking structure containing 654 spaces.

That report concluded that the on-campus parking supply is inadequate to accommodate campus parking demands and that students, staff and visitors also park on city streets surrounding the campus. A utilization survey associated with the study indicated that about 88 percent of the total supply was occupied during the heaviest demand hour, with ratios of over 85 percent experienced over most of the day. These demand ratios above 85 percent are indicative of conditions that are considered to be "fully utilized," due to the time involved in locating a vacant space among the various parking areas.

The City of Chico commissioned the *Downtown Parking Management and Implementation Study* in 2003. That report addressed conditions in the area bounded by Normal Avenue on the west, 1st Street on the north, Orient Street on the east, and 9th Street on the south. Peak occupancy ratios of over 90 percent were observed in public lots and along streets in the area between Normal Avenue and Main Street south of 1st Street. These ratios are indicative of areas that are "fully utilized."

The extent to which the lack of on-campus parking spills over into the downtown area is difficult to quantify. The *Executive Summary – Draft California State University, Chico Parking Needs Study (2004)* suggests that about 305 downtown spaces may be used as overflow student / staff parking.

3.13.2 IMPACTS AND MITIGATION MEASURES

Impact Evaluation Criteria

Under Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the proposed project will have a significant impact if it will:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

- Exceed, either individually or cumulatively, a Level of Service standard established by the county congestion management agency for designated roads or highways;

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

- Result in inadequate emergency access;

- Result in inadequate parking capacity; or,

- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

In addition to the guidance provided by the CEQA guidelines, the City of Chico has adopted policies that identify specific criteria for determining the significance of a traffic impact. Table 3.13-3 presents the characteristics of each Level of Service grade based on analysis methodologies accepted by the City of Chico.

Table 3.13-3
Level of Service Definitions

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. v/c ≤ 0.60 Average Delay < 10 sec / veh	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. 0.60 < v/c ≤ 0.70 Average Delay > 10 sec / veh and ≤ 20 sec / veh	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. 0.70 < v/c ≤ 0.80	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
	Average Delay > 20 sec / veh and ≤ 35 sec / veh		
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. 0.80 < v/c ≤ 0.90 Average Delay > 35 sec / veh and ≤ 55 sec / veh	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). 0.90 < v/c ≤ 1.00 Average Delay > 50.0 sec / veh and ≤ 80.0 sec / veh	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. v/c > 1.00 Average Delay > 80 sec / veh	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 1980 *Interim Materials in Highway Capacity, Circular 212,* Transportation Research Board (TRB).
2000 Highway *Capacity Manual,* Transportation Research Board (TRB) Special Report 209

Policy T-G-11 and T-G-12 from the City of Chico General Plan Transportation Element identify the Level of Service (LOS) goals for the City of Chico as follows:

T-G-11: Strive to maintain traffic LOS C on residential streets and LOS D or better on arterial and collector streets, at all intersections and on principal arterials in the CMP during peak hours.

T-G-12: Accept LOS E for built-out areas served by transit after finding that:

- There is no practical and feasible way to mitigate the lower Level of Services; and
- The uses resulting in the lower Level of Service are of clear, overall public benefit.

Impact #3.13-1: Generation of vehicle trips due to increased enrollment and the development of parking structures will increase traffic on the adjacent street system.

Discussion/Conclusion: Implementation of the Master Plan will provide the opportunity for additional students to attend CSU Chico, either at the main campus or at the ATRC. Trip generation rates published by the Institute of Transportation Engineers (ITE) were used to quantify the amount of traffic that may be associated with this increase in enrollment. While ITE rates may tend to ignore the high level of bicycle and pedestrian usage inherent to CSU Chico, these rates are assumed in the City of Chico traffic model and have been chosen to provide consistency with that forecasting tool. Applicable trip generation rates are presented in Table 3.13-4, resulting in the projected trip generation estimates presented in Table 3.13-5.

Table 3.13-4
Trip Generation Rates

		Hourly Rates (per student)					
		AM Peak			PM Peak		
Land Use (ITE Code)	Daily Rate (per unit)	In	Out	Total	In	Out	Total
University (550)	2.38 / student	0.17	0.04	0.21	0.06	0.15	0.21

Table 3.13-5
Trip Generation Estimates

			Peak Hour Trips					
			AM Peak			PM Peak		
Land Use (ITE Code)	Enrollment	Daily Trips	In	Out	Total	In	Out	Total
Total Campus								
Current Enrollment / Master Plan	16,000	38,080	2,720	640	3,360	960	2,400	3,360
Proposed Master Plan	20,000	47,600	3,400	800	4,200	1,200	3,000	4,200
Difference over Existing / Current Master Plan	4,000	9,520	680	160	840	240	600	840
ATRC – Regular Operations								
Existing Enrollment	375	893	64	15	79	23	56	79
Proposed Master Plan	500	1,190	85	20	105	30	75	105
Difference	125	297	21	5	26	7	19	26
ATRC – Events Center								
Worst Case Special Event						100	1,000	1,100

Trip Distribution. The next task in the evaluation is to determine the distribution of project trips. The regional distribution of trips generated by the increased enrollment at the campus will be primarily dependent on such factors as the location of student and faculty housing. To identify applicable distribution assumptions a "select link" analysis was performed using the City of Chico regional travel demand forecasting model. Trips generated by the campus were isolated from the balance of projected traffic volumes used to identify the percentile distribution presented in Table 3.13-6.

Table 3.13-6
Project Trip Distribution

Route	Percent of Total Trips
North via Nord Avenue North of Sacramento Avenue	15%
North via local streets between Nord Avenue and the Esplanade	15%
North via the Esplanade	12.5%
East via East 1st Avenue	15%
East via Vallombrosa Avenue	5%
East via local streets between Vallombrosa Avenue and Dead Horse Slough	10%
South via Main Street – Broadway	22%
South via local streets between Walnut Avenue and Broadway	4%
South via Walnut Avenue	1.5%
Total	100%

Trip Assignment. The assignment of new trips to the local street system will be dependent on many factors such as the location of available student/staff parking. In this case, the Campus Master Plan 2004 anticipates the creation of new parking spaces in two parking garages to be developed in the area south of West 2nd Street between Normal Avenue and Hazel Street and in the area off of Warner Avenue near planned student housing. For this study, new trips generated by increased enrollment have been assigned to the local street system to/from these two general locations. The resulting "project only" trips assignment is illustrated in Figures 3.13-2a – 3.13-2c.

As suggested by the Campus Master Plan 2004, development of the 2nd Street parking structure may involve closure of Chestnut Street between 2nd Street and 3rd Street. The redistribution of existing traffic associated with this closure has been assumed in this analysis.

As shown, increasing the enrollment at CSU Chico from the current level of about 16,000 students to the planned capacity of 20,000 students may generate 9,520 daily trips, with about 840 trips occurring in the a.m. and p.m. peak hour. The assumed increase in enrollment at the ATRC would be included in that total and could result in about 297 new daily trips to that facility, with about 26 new trips in the peak hours.

Existing + Project. While implementation of the Campus Master Plan 2004 will not immediately result in increased enrollment and additional traffic, for the purpose of this analysis an "existing plus project" scenario has been created assuming that all Campus Master Plan 2004 changes were made and enrollment increased. "Existing Plus Project" traffic volumes are shown in Figures 3.13-3a –

3.13-3b. The results of the Level of Service analysis for this scenario are shown in Table 3.13-7 and are further described in the following text.

Regular Operations. As indicated in Table 3.13-7, satisfactory traffic conditions (i.e., LOS D or better) are projected at most of the study intersections, with and without implementation of the Campus Master Plan 2004. However, conditions in excess of LOS D are projected at one location.

At the Nord Avenue (SR 32)/West Sacramento Avenue intersection, Level of Service E is projected during the p.m. peak hour with implementation of the Campus Master Plan 2004. This exceeds the City's LOS D threshold; however, the City has adopted a different threshold for areas that are already built and there is no way to make additional improvements. Given the level of existing development in this area, and the existing street geometry and configuration, the LOS E criteria for determining the level of significance is utilized.

Table 3.13-7
Peak Hour Intersection Levels of Service for Existing Plus Project Scenario

Intersection	Control	A.M. Peak Hour				P.M. Peak Hour			
		Existing		Ex Plus Project		Existing		Ex Plus Project	
		Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
1. Nord Avenue / Sacramento Street	Signal	23.7 sec	C	27.4 sec	C	47.2 sec	D	62.0 sec	E
2. Sacramento Ave / Warner Ave.	Signal	27.5 sec	C	37.3 sec	D	36.4 sec	D	49.1 sec	D
3. Esplanade / East 1st Street	Signal	20.5 sec	C	23.6 sec	C	22.6 sec	C	24.2 sec	C
4. Esplanade / Sacramento Street (overall) NB left EB approach	EB Stop	(2.0 sec) 18.0 sec 22.6 sec	(A)	(9.1 sec) 40.1 sec 38.9 sec	(A)	(3.6 sec) 18.2 sec 20.4 sec	(A)	(5.9 sec) 24.0 sec 32.4 sec	(A)
5. Warner Avenue / Legion Avenue	Signal	9.5 sec	A	9.8 sec	A	8.3 sec	A	8.1 sec	A
6. Walnut Avenue / West 2nd Street	Signal	17.2 sec	B	17.5 sec	B	18.1 sec	B	18.4 sec	B
7. West 2nd Street / Cherry Street (overall) EB left WB left NB approach SB approach	NB/SB Stop	(1.8 sec) 8.3 sec 7.9 sec 16.9 sec 16.8 sec	(A)	(1.8 sec) 8.5 sec 7.9 sec 17.5 sec 17.3 sec	(A)	(12.2 sec) 8.3 sec 8.0 sec 15.6 sec 48.4 sec	(B)	(13.5 sec) 8.4 sec 8.0 sec 16.1 sec 55.6 sec	(B)
8. West 2nd Street / Warner Street / Ivy Street	Signal	11.7 sec	B	12.2 sec	B	13.7 sec	B	14.3 sec	B
9. West 2nd Street / Hazel Street (overall) EB left WB left	NB/SB Stop	(0.8 sec) 8.3 sec 8.0 sec	(A)	(2.4 sec) 8.4 sec 8.4 sec	(A)	(0.9 sec) 8.5 sec 8.9 sec	(A)	(6.1 sec) 8.5 sec 9.2 sec	(A)

		A.M. Peak Hour				P.M. Peak Hour			
		Existing		Ex Plus Project		Existing		Ex Plus Project	
Intersection	Control	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
NB approach		13.4 sec		19.4 sec		15.7 sec		43.1 sec	
SB approach		11.7 sec		13.0 sec		14.3 sec		15.1 sec	
10. West 2nd Street / Chestnut Street (overall)	NB Stop	(1.3 sec)	(A)	Not applicable		(2.1 sec)	(A)	Not applicable	
WB left		8.1 sec				9.0 sec			
NB approach		13.0 sec				19.4 sec			
11. West 2nd Street / Normal Avenue (overall)	NB/SB Stop	(1.2 sec)	(A)	(2.9 sec)	(A)	(1.8 sec)	(A)	(7.5 sec)	(A)
EB left turn		8.3 sec		8.4 sec		8.5 sec		8.5 sec	
WB left turn		7.9 sec		8.4 sec		9.1 sec		9.7 sec	
NB approach		11.3 sec		13.3 sec		19.3 sec		38.3 sec	
SB approach		13.6 sec		20.7 sec		21.5 sec		37.2 sec	
12. West 2nd Street / Broadway	Signal	13.5 sec	B	14.3 sec	B	14.7 sec	B	15.3 sec	B
13. West 2nd Street / Main Street	Signal	12.8 sec	B	13.0 sec	B	15.6 sec	B	16.9 sec	B
14. Midway / Park Avenue	Signal	31.3 sec	C	34.5 sec	C	29.9 sec	C	32.5 sec	C
15. Midway / Hegan Lane	Signal	16.5 sec	B	16.5 sec	B	22.2 sec	C	22.9 sec	C
16. Hegan Lane / East ATRC Access (overall)	NB Stop	(1.9 sec)	(A)	(2.4 sec)	(A)	(1.0 sec)	(A)	(1.6 sec)	(A)
WB left turn		7.7 sec		7.7 sec		7.5 sec		7.5 sec	
NB approach		9.7 sec		9.6 sec		9.5 sec		9.5 sec	

The street system as it exists today has the capacity to absorb the traffic generated by increased enrollment at CSU Chico. While the Level of Service at the Nord Avenue (SR 32)/West Sacramento Avenue intersection is projected to reach LOS E, the Chico General Plan permits acceptance of this conditions, so this impact is ***less than significant***.

<u>Mitigation Measures</u>

No mitigation measures are required.

Impact #3.13-2: Implementation of the Master Plan will result increased demand for on-campus parking.

Discussion/Conclusion: Implementation of the Campus Master Plan 2004 would result in an increase in the demand for on-campus parking and the corresponding increase in the number of parking spaces that will be provided.

The increase in parking demand associated with increased enrollment can be estimated based on current utilization. Assuming that the current enrollment of 16,000 students results in 1,896 occupied parking spaces (2,143 spaces at 88 percent occupancy), adding another 4,000 students will result in another 474 vehicles to be parked on the site, or a total of about 2,370 vehicles.

This simple relationship does not address spill-over parking in the downtown area. The *Executive Summary – Draft California State University, Chico Parking Needs Study (2004)* suggests that about 305 downtown spaces may be occupied by overflow parking. This would increase the demand to 2,675 spaces. Assuming that this demand is to be accommodated on-campus and that the resulting demand/supply ration should be less than "fully utilized" (i.e., 0.80), then a total of 3,344 on-campus spaces would be needed.

The Campus Master Plan 2004 provides for on-campus parking. The net increase in on-campus parking is 1,430 spaces. This would increase the on-site total to about 3,570 spaces.

Increased enrollment associated with the Master Plan will increase the demand for on-campus parking. However, because concurrent expansion of the on-site parking supply is planned, this is a ***less-than-significant*** impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.13-3: Pedestrian/Bicycle Activity near the Campus could create conflicts with automobiles.

Discussion/Conclusion: Implementation of the Master Plan with a concurrent increase in enrollment would increase the number of persons walking or riding bicycles to the campus. In turn, this may result in additional automobile/pedestrian/bicycle conflicts on the streets adjoining the campus, as well as the demand for additional bicycle parking. The Campus Master Plan 2004 provides the opportunity to relocate and/or reconfigure bicycle parking areas as part of the site development for new projects.

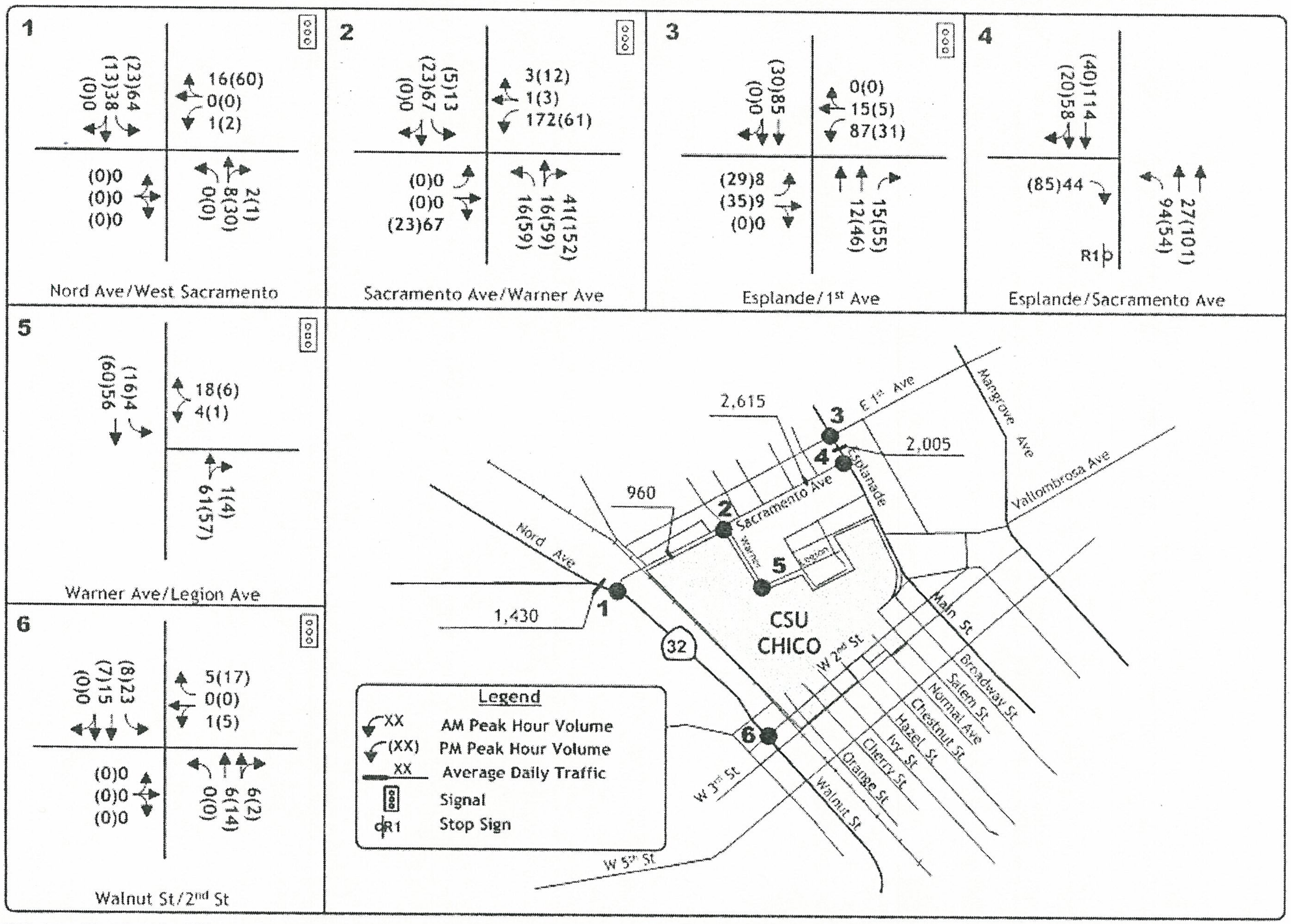
The CSU-Campus's location adjoining the downtown Chico area will result in increased pedestrian and bicycle traffic between the school, adjoining neighborhoods and the balance of the community as the master Plan is developed. For example, students /staff will need to cross 2nd Avenue when making use of the new parking structure. In those locations where the pedestrian / bicycle traffic is concentrated, safety problems could result. This is a ***potentially-significant impact.***

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact to a ***less-than-significant*** level.

Mitigation Measure #3.13-3:

Pedestrian/bicycle activity shall be addressed in the design of new parking facilities. Traffic controls devices needed to ensure crossing safety shall be provided as new facilities are developed.



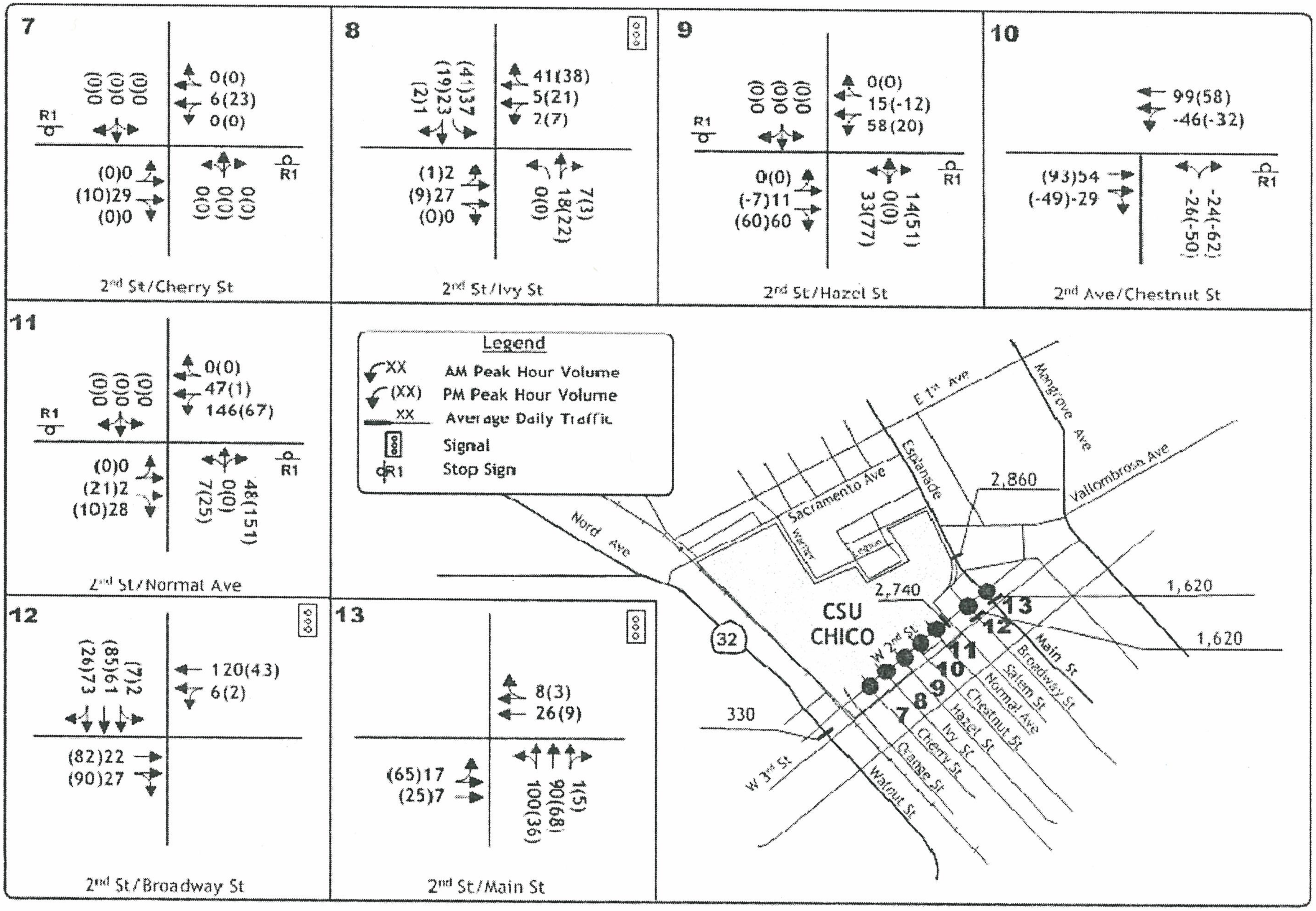
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

MASTER PLAN ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-2a

Job No.: 03496

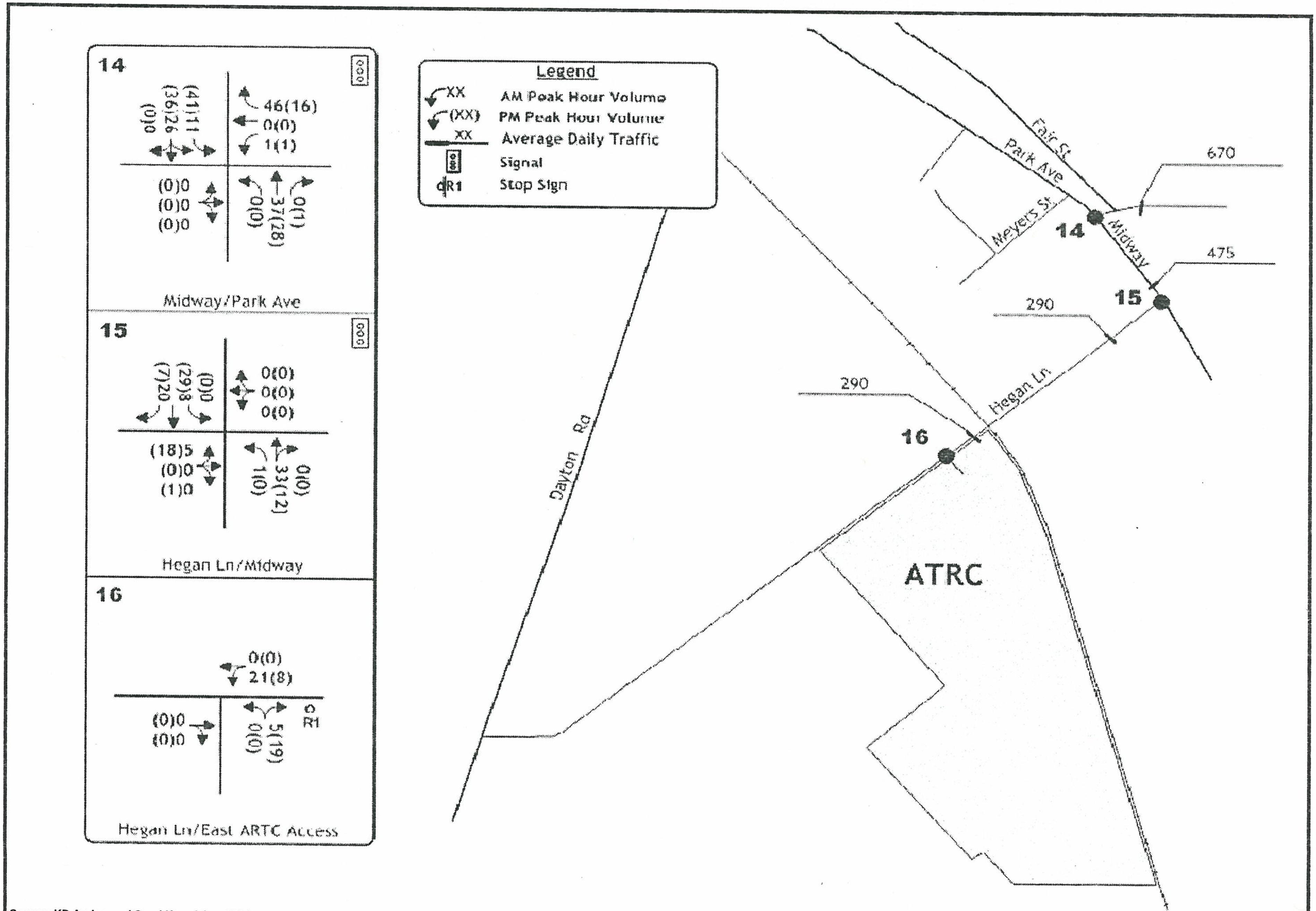


Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

MASTER PLAN ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-2b



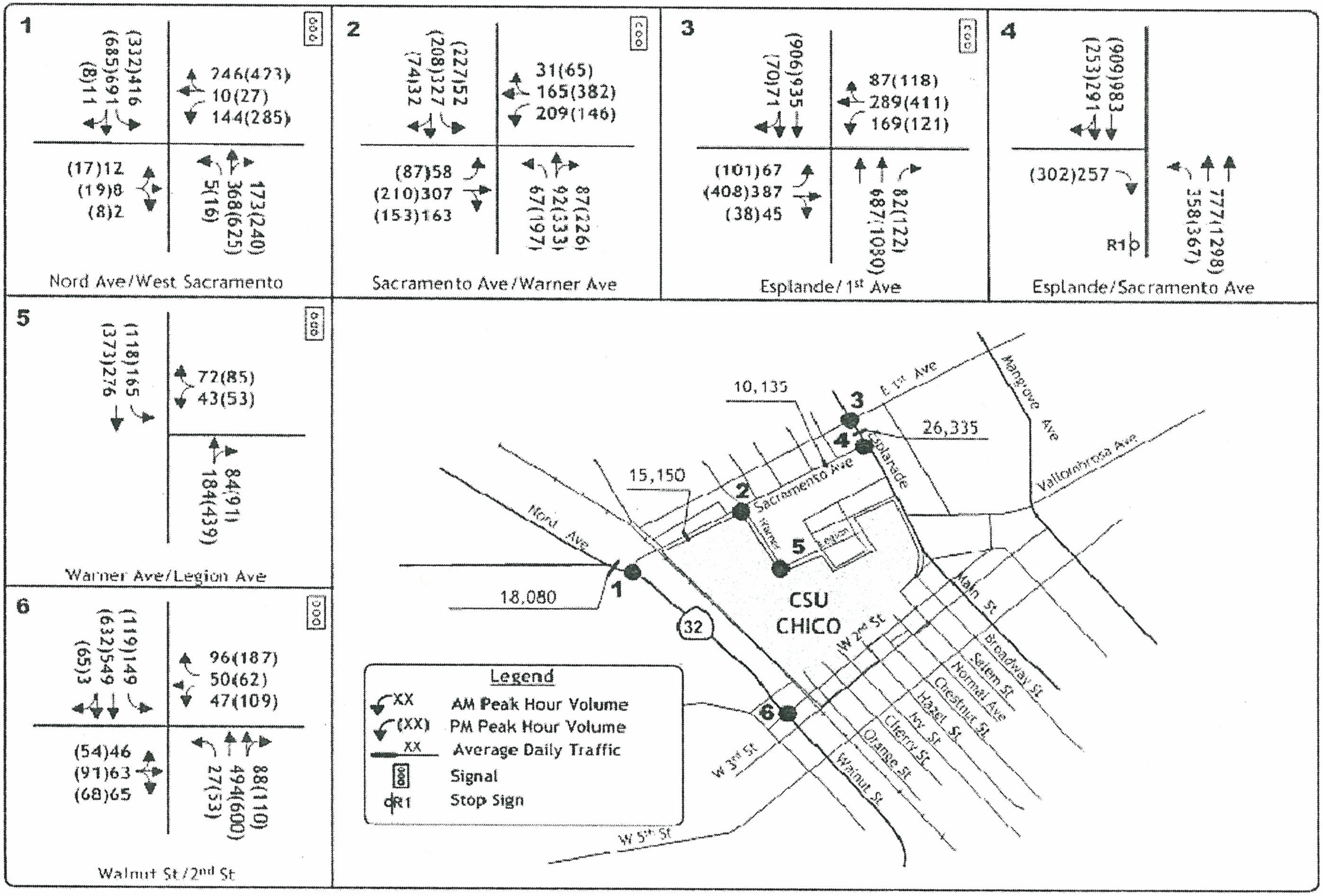
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

MASTER PLAN ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Figure 3.13-2c

Job No.: 03496



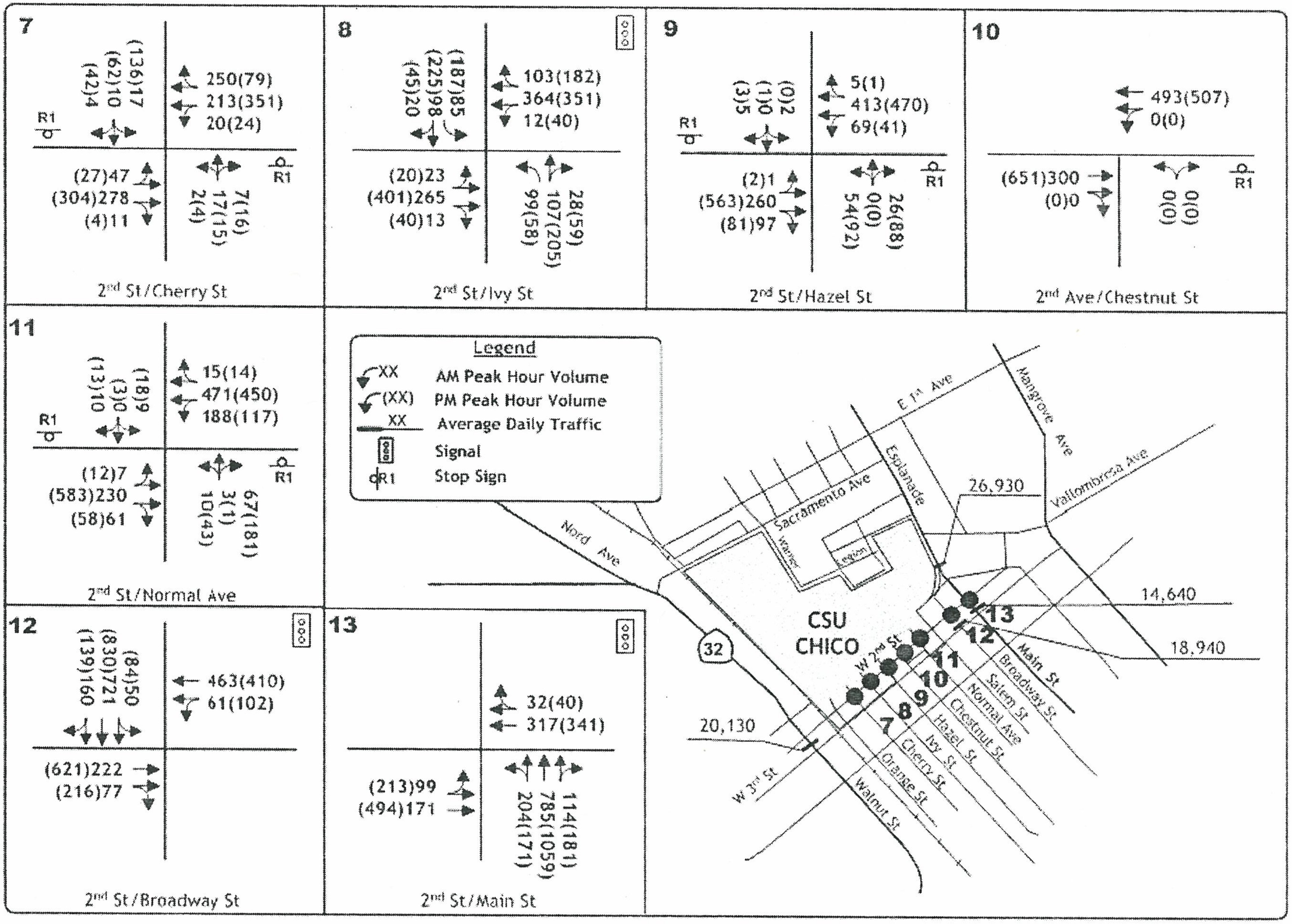
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING PLUS MASTER PLAN TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-3a

Job No : 03496



Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING PLUS MASTER PLAN TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-3b

Job No : 03496

Impact #3.13-4: Special Events at the ATRC will generate vehicle trips and parked cars.

Discussion/Conclusion: The Campus Master Plan 2004 envisions development of a 45,000 square-foot Events Center at the ATRC. This facility would have the capacity to seat up to 2,000 persons for a wide range of special events, including industry based farm equipment shows, equine events, 4H and Future Farmers of America activities, and other similar events. The existing + project traffic volumes are shown on Figure 3.13-4.

The trip generation associated with the use of the Events Center would vary greatly based on many factors, including the actual attendance, the operational schedule for particular events, the level of bussing provided, and average automobile occupancy. The schedule for these types of events would not necessarily result in traffic to and from the site during peak commute hours.

For this analysis a “worst case” p.m. peak hour event has been assessed. This analysis assumes that a maximum occupancy event was held with typical (i.e., 2.0 persons per vehicle) automobile occupancy that is indicative of limited bussing. This analysis assumes that 100 percent of attendees exit the site during the p.m. peak hour. Under these circumstances about 1,000 p.m. peak hour trips could be generated.

As noted earlier, the ATRC is planned to host special events. These events could be held at various times during the year and could result in traffic entering and exiting the site at various times during the day. As a worst case, an “existing plus Special Event” scenario was evaluated assuming full occupancy of the events center and traffic exiting after an event during the p.m. peak hour. This scenario assumes the trip generation presented earlier in Table 3.13-4 and the distribution pattern shown in Table 3.13-8.

Table 3.13-8
Special Event Trip Distribution

Route	Percent of Total Trips
North via Park Avenue	20%
East via Park Avenue	60%
South via Midway	10%
West via Hegan Road	10%
Total	100%

Resulting p.m. peak hour volumes are presented in Figure 3.13-5, and Table 3.13-9 presents “Existing Plus Special Event” p.m. peak hour Levels of Service at the study intersections near the ATRC. As shown, under these assumptions the Midway / Hegan Lane intersection is likely to operate at LOS F, as is the ATRC access onto Hegan Lane.

Measures to improve Level of Service at these locations have been considered. Temporary manual traffic controls would be needed at the ATRC access to deliver LOS D or better conditions during the p.m. peak hour with full occupancy. Widening the Hegan Lane/Midway intersection to accommodate dual eastbound left turn lanes would be needed to accomplish LOS D or better conditions at that location. Alternatively, reducing the size of an event ending during the p.m. peak hour would also improve conditions. Traffic following an 800-person event during the p.m. peak hour would result in LOS D.

Table 3.13-9
Existing Plus ATRC Special Event Peak Hour Intersection Levels of Service

		PM Peak Hour			
		Existing		Existing Plus Special Events	
Intersection	**Control**	**Average Delay**	**LOS**	**Average Delay**	**LOS**
14. Midway / Park Avenue	Signal	29.9 sec	C	47.9 sec	D
15. Midway / Hegan Lane	Signal	22.2 sec	B	227.0 sec	F
16. Hegan Lane / East ATRC Access (overall) WB left turn NB approach	NB Stop	(1.0 sec) 7.5 sec 9.5 sec	(A)	(119.4 sec) 7.7 sec 166.4 sec	(F)

The events center included in the ATRC will generate automobile traffic before and after events. An at-capacity event ending during the p.m. peak hour has the potential to result in LOS F conditions at the Midway / Hegan Lane intersection and at the ATRC access onto Hegan Lane. Full occupancy of the Events Center may result in the need to park up to 1,000 vehicles at the site. This is a ***potentially-significant impact***.

Mitigation Measures

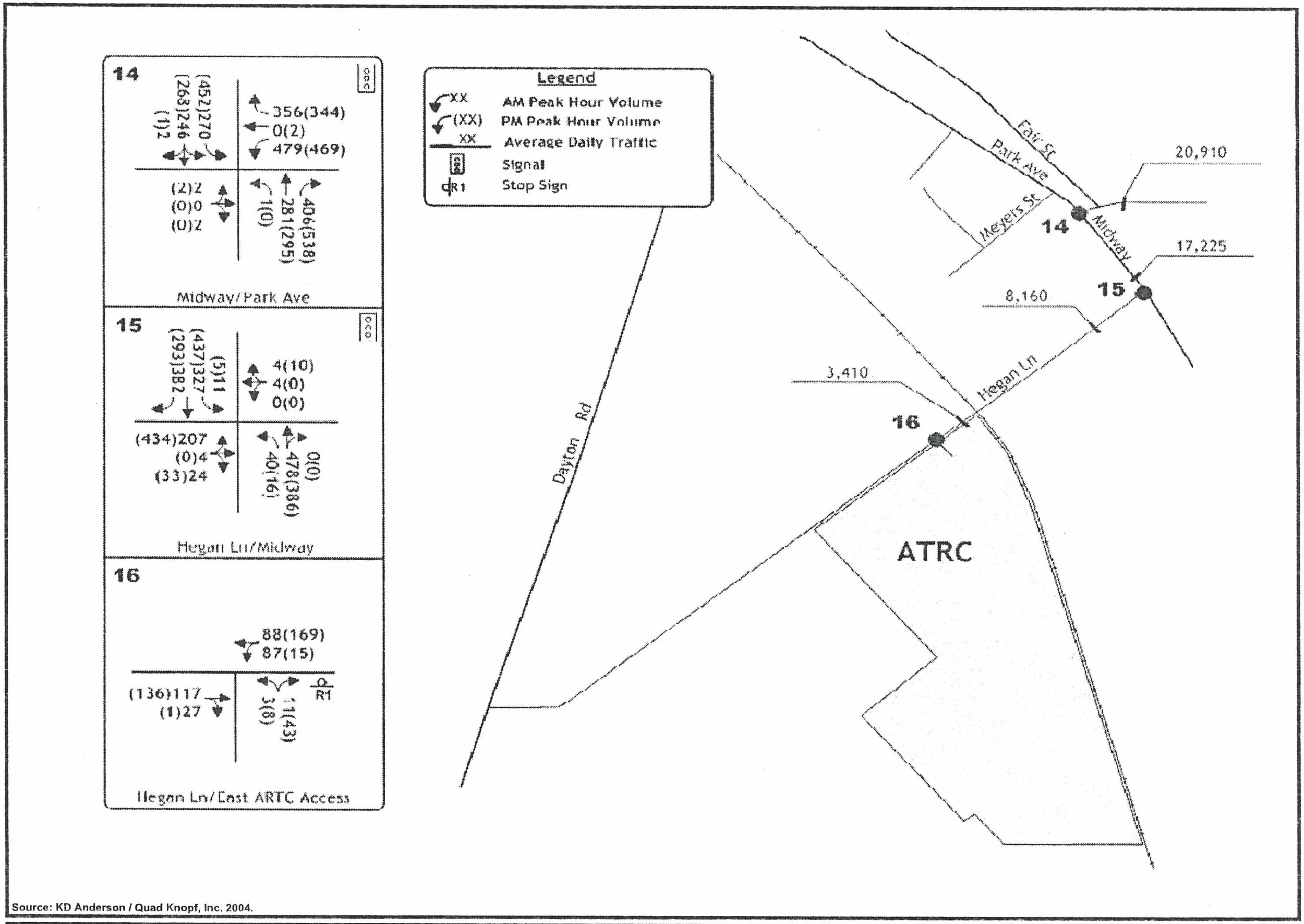
Implementation of the following mitigation measures will reduce this impact to a ***less-than-significant*** level.

Mitigation Measure #3.13-4a:

When the Events Center is constructed, the on-site parking supply shall be calculated. If the proposed supply fails to satisfy projected demands on-site, then a parking management plan shall be created. The plan shall delineate the location of and access to the on-site and off-site parking supply that will be made available when events are held at the Center. If appropriate, the plan shall link maximum ticket sales or the number of seats constructed to the number of parking spaces available near the Center. If necessary, the parking management plan shall incorporate other features to help reduce the demand for on site parking, including shuttle busses from satellite parking locations, and other measures necessary to ensure adequate parking for special events at the facility.

Mitigation Measure #3.13-4b:

An operational plan shall be developed for the Events Center which schedules travel to and from large events outside of peak commute hours. The plan shall identify the size and



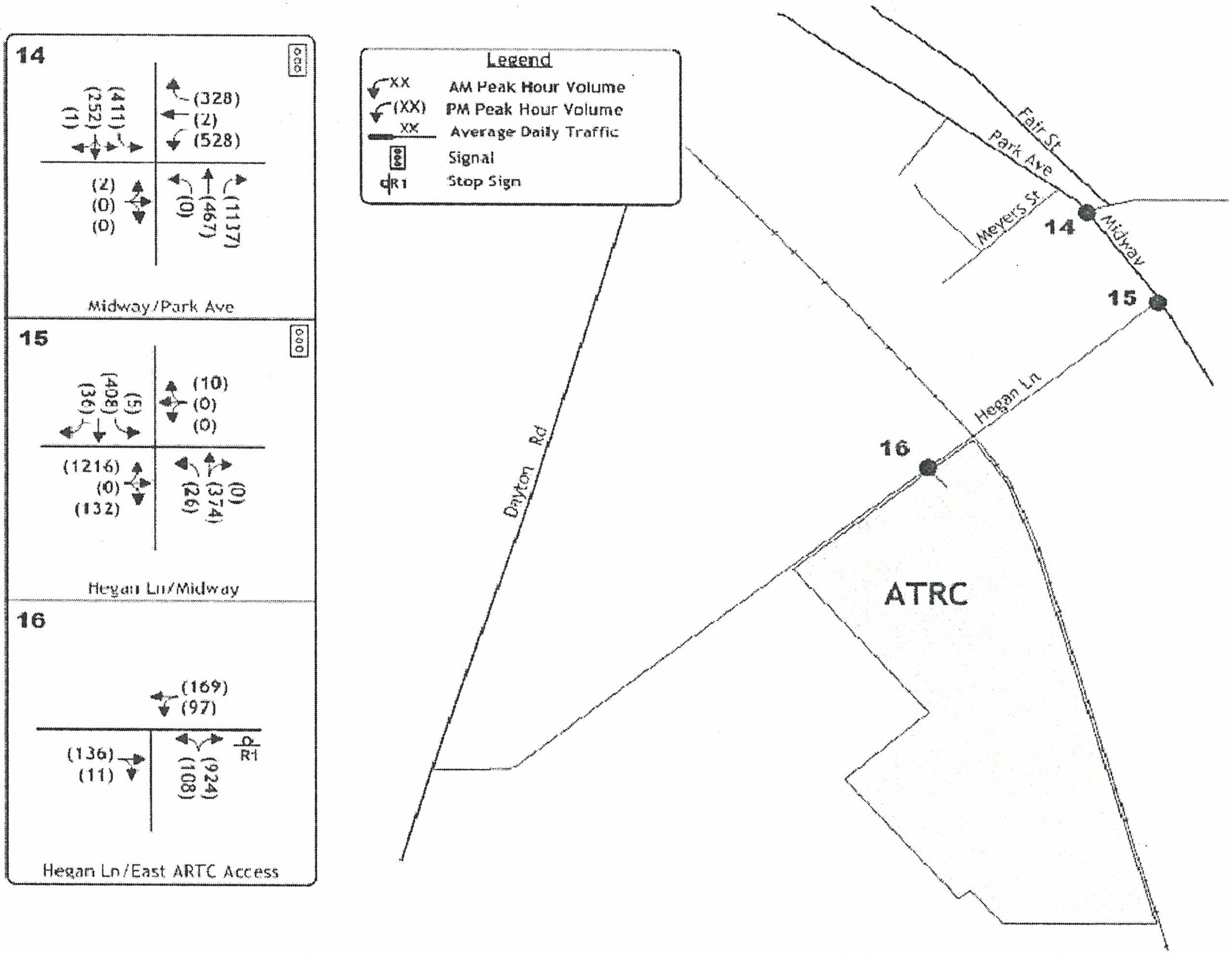
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING PLUS MASTER PLAN TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-4

Job No · 03496



Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

EXISTING PLUS ATRC SPECIAL EVENT TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-5

Job No.: 03496

schedule of events that necessitate manual traffic controls at affected intersections, as well as maximum attendance for events ending during the p.m. peak hour.

Mitigation Measure #3.13-4c:

When the Events Center is constructed, improvements shall be made to the ATRC's Hegan Lane access intersections to provide left turn lanes on Hegan lane and to provide adequate throat depth on exiting lanes.

Impact #3.13-5: Implementation of the Master Plan will increase the demand for CATS in the area of the Campus.

Discussion/Conclusion: Increasing the enrollment under the Master Plan would incrementally increase the demand for transit services in the area of the campus and in the Chico area as a whole. Assuming a proportionate increase in transit ridership as enrollment increases, current student ridership estimated at 250,000 annual and 1,000 daily riders could increase to 312,500 annual and 1,250 daily riders. Because the area is well served by existing transit routes, the incremental increase in ridership would not be expected to result in the need for new routes, however, increased ridership may eventually result in the need for additional capacity in terms of decreased headways during peak periods. Providing additional capacity along existing routes may require additional equipment/personnel and increased operational costs, although the extent of these additional needs is unknown.

Increased enrollment associated with implementation of the Master Plan will result in additional demands on CATS which may result in the need for expanded service along existing routes that serve the campus (i.e., Student Shuttle). While the extent of additional service needed to accommodate increased enrollment is unknown, potential increases in CATS operational costs represent a ***potentially-significant impact.***

Mitigation Measures

Implementation of the following mitigation measures will reduce this impact to a ***less-than-significant*** level.

Mitigation Measure #3.13-5:

CSU shall continue to work with CATS to subsidize student transit ridership. Should the need for expanded service on the "Student Shuttle" routes be identified, CSU shall work with CATS to develop an equitable funding mechanism that will ensure that adequate transit services are available to serve the anticipated student population.

3.13.3 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Analysis of Cumulative Scenarios

Background Traffic Volumes. To evaluate the impacts of the Campus Master Plan 2004 on traffic conditions in the project area in the future two additional scenarios were created and compared: Year 2025 With and Without Master Plan. Year 2025 Without Project conditions assume continuation of the existing Master Plan and an enrollment of 16,000. Year 2025 With Project conditions assume increased enrollment to 20,000 and the development of anticipated parking supplies.

Year 2025 Without Project traffic volume projections were developed based on information derived from the City of Chico regional travel demand forecasting model. The current model was reviewed to identify campus characteristics, and the student population/trip generation was adjusted to reflect continuation of current conditions (i.e., 16,000 students). Peak hour segment traffic volume forecasts were made for this scenario and were compared to the baseline model forecast in order to identify the amount of growth that can be anticipated.

Review of these forecasts revealed that background volumes in the areas near the CSU campus can be expected to increase by 30 percent by the year 2025. Slightly different relationships were discovered in the area of the Park Avenue/Midway intersection. At this location traffic on Park Avenue east of Midway was projected to increase by about 15 percent, while the volume on Midway south of Parkway Avenue was shown to increase by 60 percent.

These growth rates were applied to current peak hour and daily traffic volumes to create the Year 2025 Base conditions shown in Figure 3.13-5. Thus, it was again necessary to interpolate mid afternoon traffic volumes. Projected Cumulative Base traffic volumes are presented in Figure 3.13-6a – 3.13-6c.

Table 3.13-10
Year 2025 Daily Traffic Volumes

	Location			Daily Volume		
					2025	
Street	**From**	**To**	**Classification**	**2004**	**Base**	**Plus Master Plan**
Nord Avenue	West Sacramento Ave	East Sacramento Ave	Arterial	16,650	21,645	23,075
Sacramento Avenue	Nord Avenue	Warner Avenue	Minor Arterial	14,190	18,450	19,410
	Warner Avenue	Esplanade	Minor Arterial	7,520	9,775	12,390
Esplanade	East 1st Ave	Sacramento Ave	Arterial	24,330	31,630	33,635
	Vallombrosa Ave	West 1st Street	Arterial	24,070	31,290	34,150
Walnut Street	West 1st Street	West 2nd Street	Arterial	19,800	25,740	26,070
Broadway	West 2nd Street	West 3rd Street	Arterial	17,320	22,515	24,135
Main Street	West 2nd Street	West 3rd Street	Arterial	13,020	16,925	18,545
Park Avenue	Midway	SR 99	Arterial	20,240	24,290	24,960

Street	Location		Classification	Daily Volume		
				2004	2025	
	From	To			Base	Plus Master Plan
Midway	Park Avenue	Hegan Lane	Minor Arterial	16,750	26,800	27,275
Hegan Lane	Dayton Road	Railroad	Collector	3,120	5,930	6,220
	Railroad	Midway	Collector	7,870	14,950	15,240

Cumulative (Year 2025) Levels of Service

Year 2025 peak hour Levels of Service Without and With Master Plan are shown in Table 3.13-11. As shown, Levels of Service in excess of the City's LOS D standard are forecast at the following five intersections.

Nord Avenue (SR 32)/West Sacramento Avenue Intersection. The Nord Avenue (SR 32) / West Sacramento Avenue intersection is projected to operate at LOS F whether the Campus Master Plan 2004 is implemented or not. To improve conditions at this location, it would be necessary to widen the northbound Nord Avenue approach to provide a second northbound through lane. This improvement would deliver LOS E conditions during the p.m. peak hour with implementation of the Campus Master Plan 2004. However, previous traffic studies in this area have suggested that improvements to deliver LOS E or better conditions are not likely to be feasible due to existing development in this area.

2nd Street/Cherry Street Intersection. The 2nd Street / Cherry Street intersection is projected to operate at LOS F whether the Campus Master Plan 2004 is implemented or not. A traffic signal would be required to deliver LOS D or better conditions.

2nd Street/Normal Street Intersection. The 2nd Street / Normal Street intersection is projected to operate at LOS E if the Campus Master Plan 2004is implemented. This Level of Service is closely associated with development of a parking structure in the area of the 2nd Street / Chestnut Street intersection. While development of a traffic signal would deliver acceptable Level of Service, the need for a traffic signal is closely linked to decisions regarding the location and nature of access to the parking structure. Additional analysis of traffic conditions will be needed as the plans for the parking structure are developed.

Midway/Park Avenue. The Midway/Park Avenue intersection is projected to operate at LOS F whether the Campus Master Plan 2004is developed or not. To deliver LOS D or better conditions it will be necessary to widen the intersection to provide dual southbound left turn lanes and a separate through+right turn lane.

Midway/Hegan Lane Intersection. The Midway/Hegan Lane intersection is projected to operate at LOS E whether the Campus Master Plan 2004 is implemented or not. To deliver LOS D or better conditions it would be necessary to widen the eastbound Hegan Lane approach to provide second left turn lane. It would also be necessary to widen northbound Midway north of the intersection to receive the second left turn lane.

Table 3.13-11
Peak Hour Intersection Levels of Service for Year 2025 Scenarios

		A.M. Peak Hour				P.M. Peak Hour			
		2025 Base		2025 Plus Project		2025 Base		2025 Plus Project	
Intersection	Control	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
1. Nord Avenue / Sacramento Street	Signal	55.2 sec	E	69.3 sec	E	128.4 sec	F	150.2 sec	F
2. Sacramento Ave / Warner Avenue	Signal	31.4 sec	C	50.2 sec	D	37.6 sec	D	50.3 sec	D
3. Esplanade / East 1st Street	Signal	27.0 sec	C	35.6 sec	D	34.8 sec	C	40.5 sec	D
4. Esplanade / Sacramento Street (overall) NB left EB approach	EB Stop	(13.4 sec) 61.7 sec 70.0 sec	(A)	(46.8 sec) 231.6 sec 175.2 sec	(E)	(10.4 sec) 47.8 sec 60.0 sec	(B)	(24.7 sec) 115.0 sec 121.0 sec	(C)
5. Warner Avenue / Legion Avenue	Signal	10.7 sec	B	11.1 sec	B	9.6 sec	A	9.7 sec	A
6. Walnut Avenue / West 2nd Street	Signal	18.6 sec	B	18.9 sec	B	20.9 sec	C	21.3 sec	C
7. West 2nd Street / Cherry Street (overall) EB left WB left NB approach SB approach	NB/SB Stop	(2.6 sec) 9.3 sec 8.2 sec 27.6 sec 28.0 sec	(A)	(2.6 sec) 9.3 sec 8.3 sec 29.1 sec 29.5 sec	(A)	(66.0 sec) 8.8 sec 8.3 sec 21.6 sec 278.6 sec	(F)	(72.3 sec) 8.9 sec 8.3 sec 22.5 sec 313.3 sec	(F)
8. West 2nd Street / Warner Street / Ivy Street	Signal	12.2 sec	B	12.6 sec	B	14.9 sec	B	15.9 sec	B
9. West 2nd Street / Hazel Street (overall) EB left WB left NB approach SB approach	NB/SB Stop	(1.0 sec) 8.7 sec 8.3 sec 16.2 sec 13.3 sec	(A)	(3.1 sec) 8.7 sec 8.7 sec 28.3 sec 14.9 sec	(A)	(1.3 sec) 9.0 sec 9.7 sec 22.3 sec 18.4 sec	(A)	(24.5 sec) 8.9 sec 10.1 sec 194.2 sec 19.5 sec	(C)
10. West 2nd Street / Chestnut Street (overall) WB left NB approach	NB Stop	(1.6 sec) 8.4 sec 15.8 sec	(A)	Not applicable		(3.7 sec) 9.9 sec 36.7 sec	(A)	Not applicable	
11. West 2nd Street / Normal Avenue (overall) EB left turn WB left turn	NB/SB Stop	(1.4 sec) 8.9 sec 8.3 sec 13.6 sec	(A)	(3.6 sec) 9.1 sec 9.0 sec 18.9 sec	(A)	(2.9 sec) 9.0 sec 10.1 sec 33.2 sec	(A)	(40.4 sec) 8.9 sec 10.8 sec 177.7 sec	(E)

		A.M. Peak Hour				P.M. Peak Hour			
		2025 Base		2025 Plus Project		2025 Base		2025 Plus Project	
Intersection	**Control**	**Average Delay**	**LOS**	**Average Delay**	**LOS**	**Average Delay**	**LOS**	**Average Delay**	**LOS**
NB approach SB approach		18.7 sec		38.7 sec		37.5 sec		104.8 sec	
12. West 2nd Street / Broadway	Signal	14.4 sec	B	15.3 sec	B	16.9 sec	B	19.7 sec	B
13. West 2nd Street / Main Street	Signal	13.7 sec	B	14.4 sec	B	20.9 sec	B	26.1 sec	C
14. Midway / Park Avenue	Signal	82.6 sec	F	97.2 sec	F	103.8 sec	F	121.5 sec	F
15. Midway / Hegan Lane	Signal	29.7 sec	C	31.7 sec	C	67.2 sec	E	74.9 sec	E
16.. Hegan Lane / East ATRC Access (overall) WB left turn NB approach	NB Stop	(1.3 sec) 8.0 sec 10.8 sec	(A)	(1.6 sec) 8.0 sec 10.6 sec	(A)	(0.6 sec) 7.8 sec 10.8 sec	(A)	(1.0 sec) 7.8 sec 10.7 sec	(A)

Impact #3.13-6: Cumulative development in the study area by the Year 2025 will generate traffic on the planned street system.

Discussion/Conclusion: Background growth and Campus Master Plan 2004 implementation will result in conditions in excess of City of Chico standards at five intersections. The cumulative + project traffic volumes are shown on Figures 3.13-7a – 3.13-7c. These include Nord Avenue (SR 32)/West Sacramento Avenue, 2nd Street/Cherry Avenue, 2nd Street/Normal Street, Midway/Park Avenue and Midway/Hegan Avenue.

Mitigation Measures

Implementation of the following mitigation measures will reduce potential impacts, but not to a less-than-significant level. Cumulative impacts at Nord Ave. remain ***significant and unavoidable.***

The CSU Chico participation in the following mitigation measures shall be proportionate to the impact of the Campus Master Plan 2004.

Mitigation Measure #3.13-6a:

When plans for the 2nd Street parking structure proceed, CSU shall prepare a supplemental traffic study addressing site access and local circulation impacts. The study will address the need for signalization of adjoining intersections, including 2nd Street/Normal Street, and if traffic signals are found to be needed, CSU shall participate in the cost in proportion to the project's impact. The study shall also consider the issue of bicycle access along this *portion of 2nd Street, and applicable traffic control measures shall be included in the design of the project.*

Mitigation Measure #3.13-6b:

Future traffic conditions at the 2nd Street / Cherry Street intersection shall be monitored by CSU and the City of Chico. When a traffic signal is found to be warranted, CSU shall contribute its fair share to the cost of this improvement.

Mitigation Measure #3.13-6c:

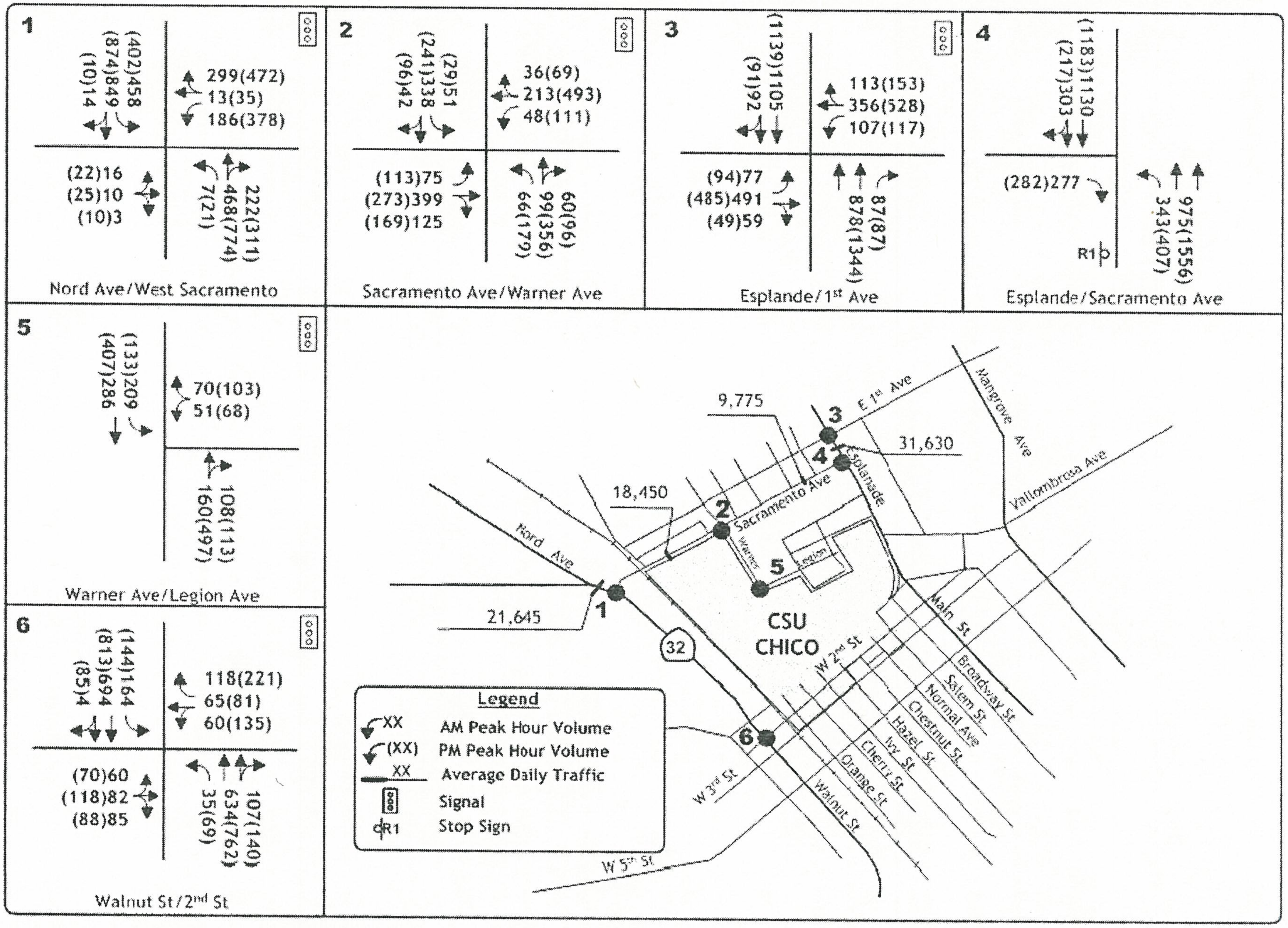
CSU shall work with Caltrans and the City of Chico to identify feasible improvements to the Nord Avenue (SR 32)/West Sacramento Avenue intersection. If it is determined that a feasible improvement project is available, then CSU shall contribute its fair share to the cost of this project based on its traffic impact. However, as no feasible project has yet been identified, this impact is considered to be significant and unavoidable.

Mitigation Measure #3.13-6d:

CSU shall contribute its fair share to the cost of widening the Midway/Park Avenue intersection to provide dual southbound left turn lanes and a separate northbound through lane. The CSU contribution shall be in proportion to the impacts of the Campus Master Plan 2004.

Mitigation Measure #3.13-6e:

CSU shall contribute its fair share to the cost of widening the Midway / Hegan Lane intersection to accommodate dual eastbound left turn lanes. The CSU contribution shall be in proportion to the impacts of the Campus Master Plan 2004.



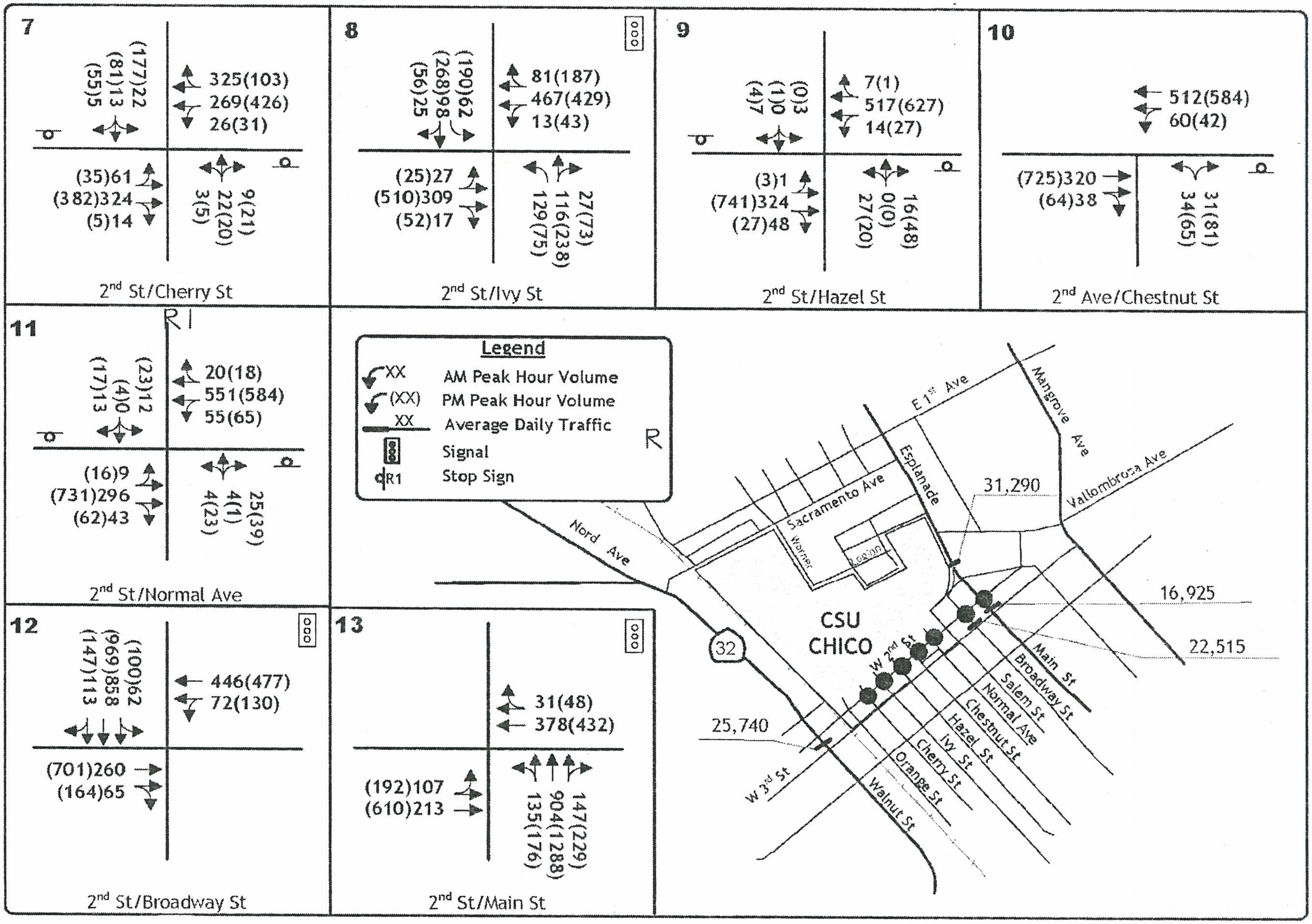
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

CUMULATIVE BASE TRAFFIC
VOLUME AND LANE CONFIGURATIONS

Figure 3.13-6a

Job No.: 03496



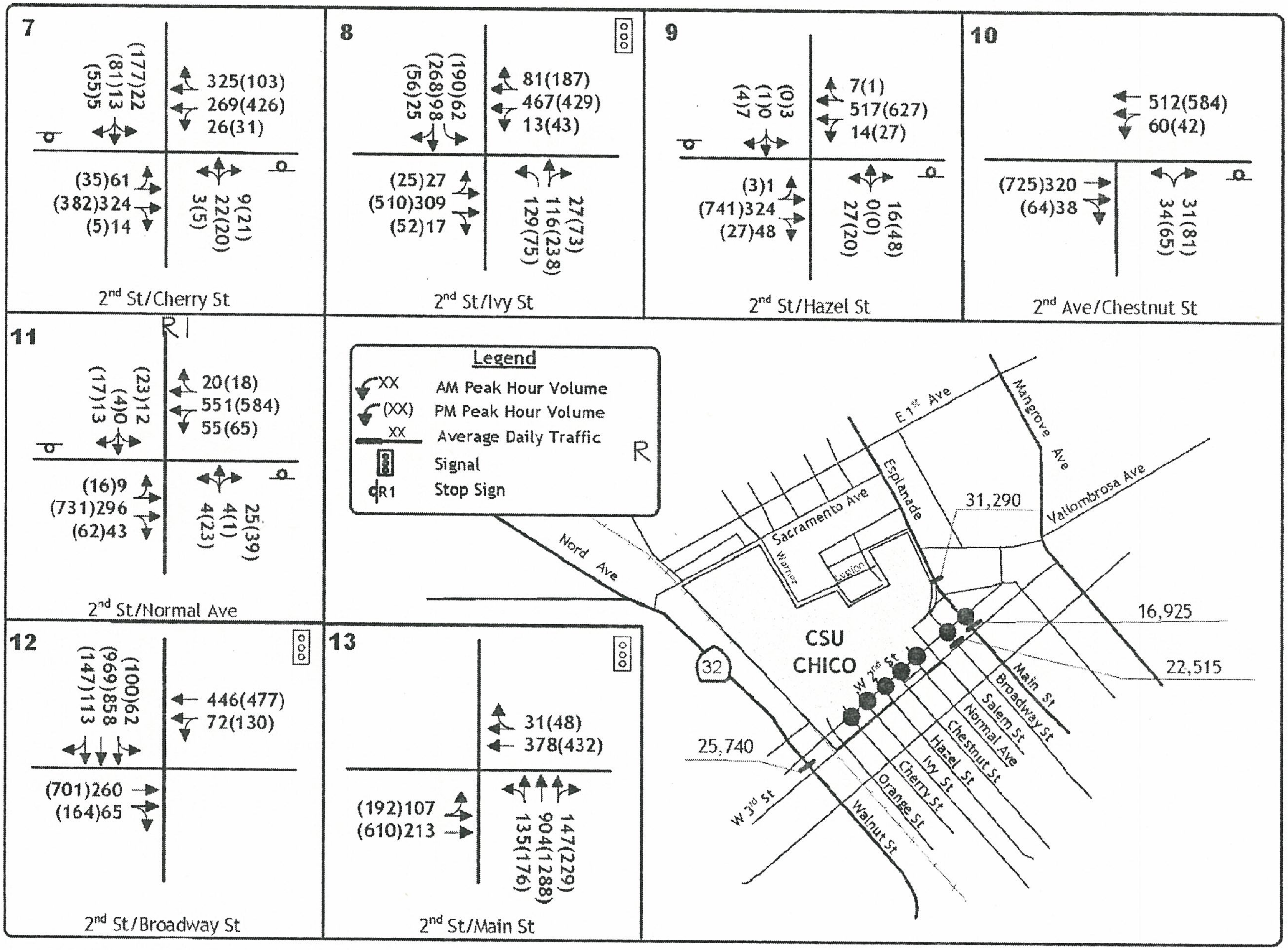
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

CUMULATIVE BASE TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-6b

Job No.: 03496



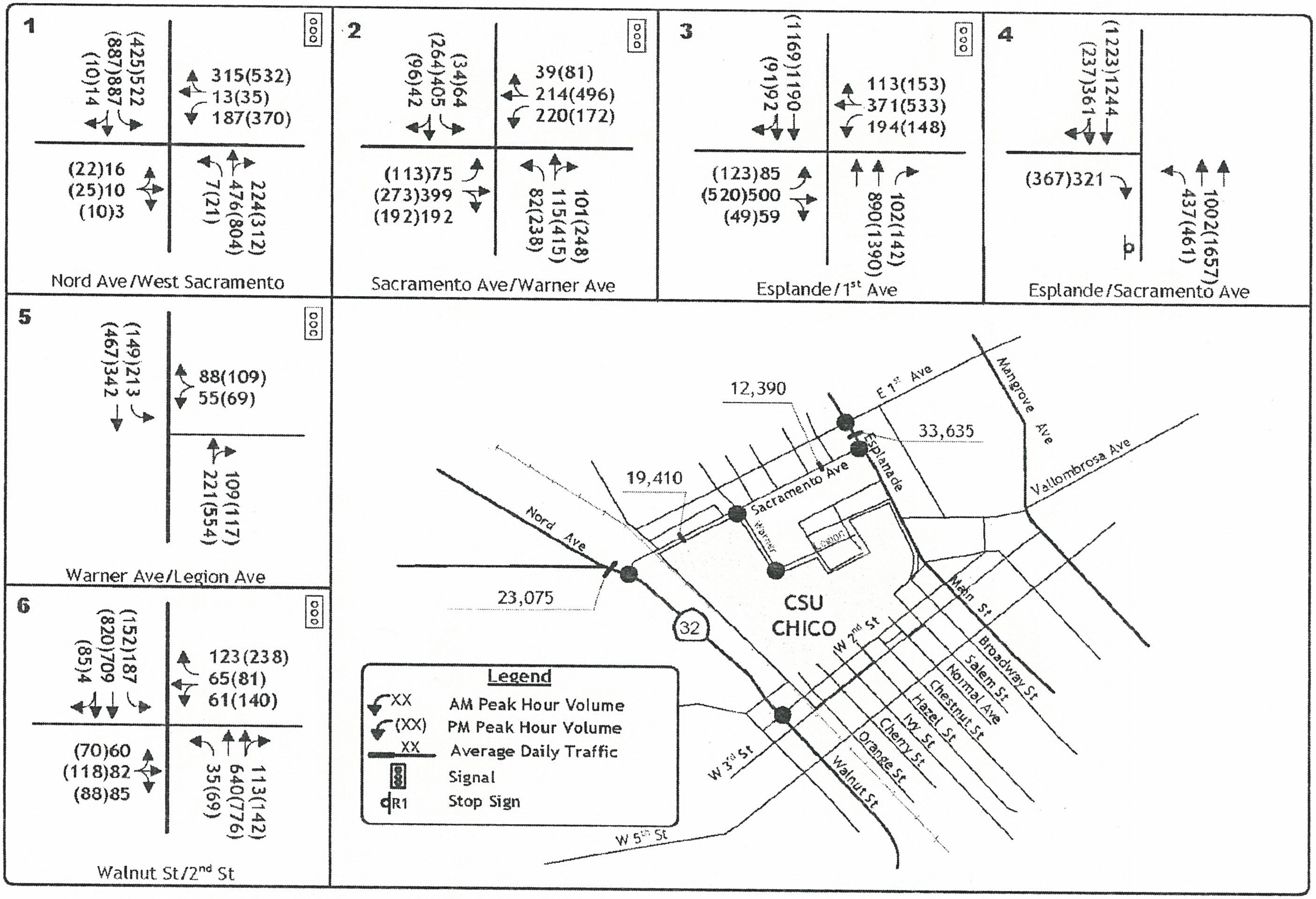
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

CUMULATIVE BASE TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-6c

Job No.: 03496



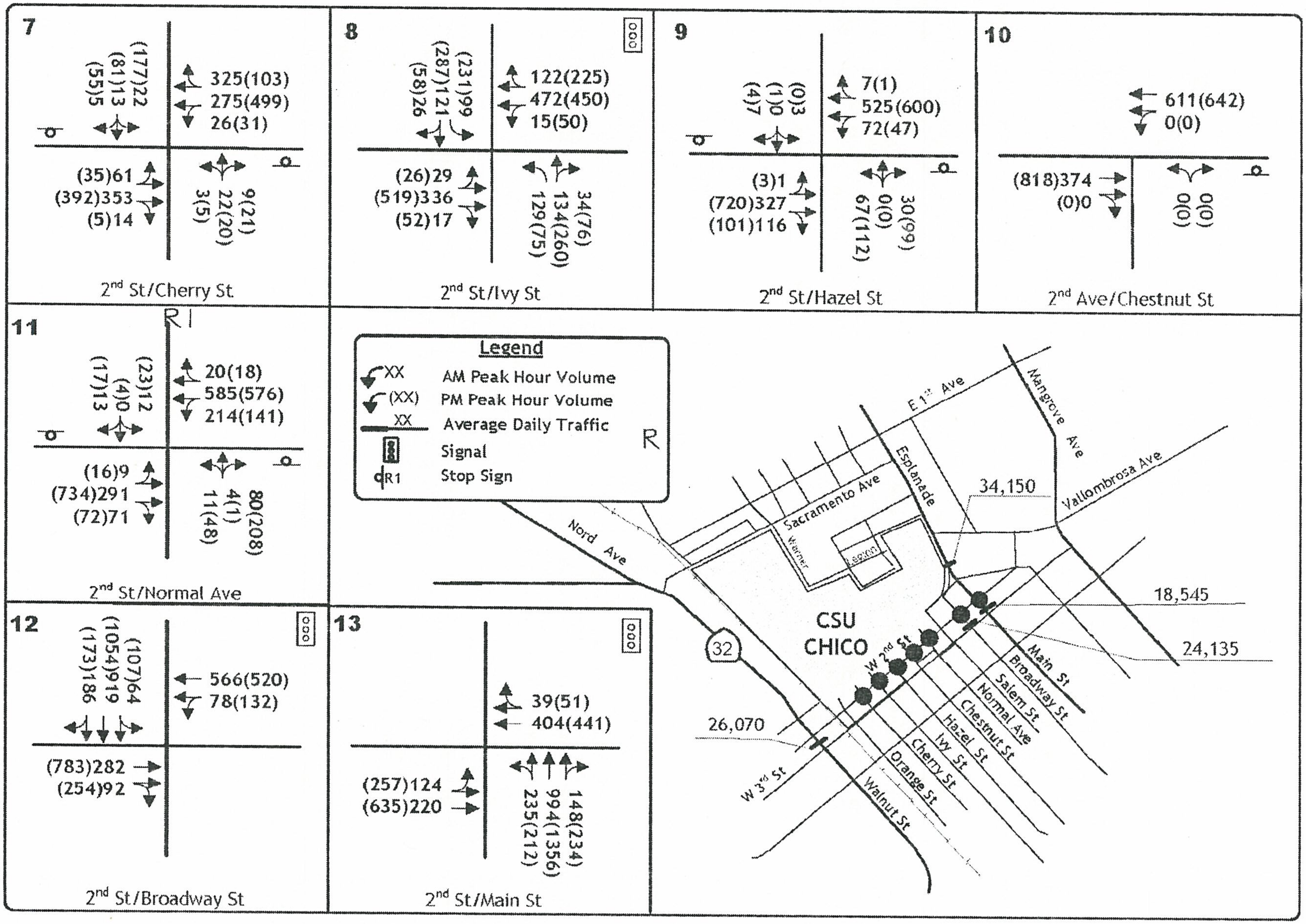
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

CUMULATIVE PLUS BASE TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-7a

Job No · 03496



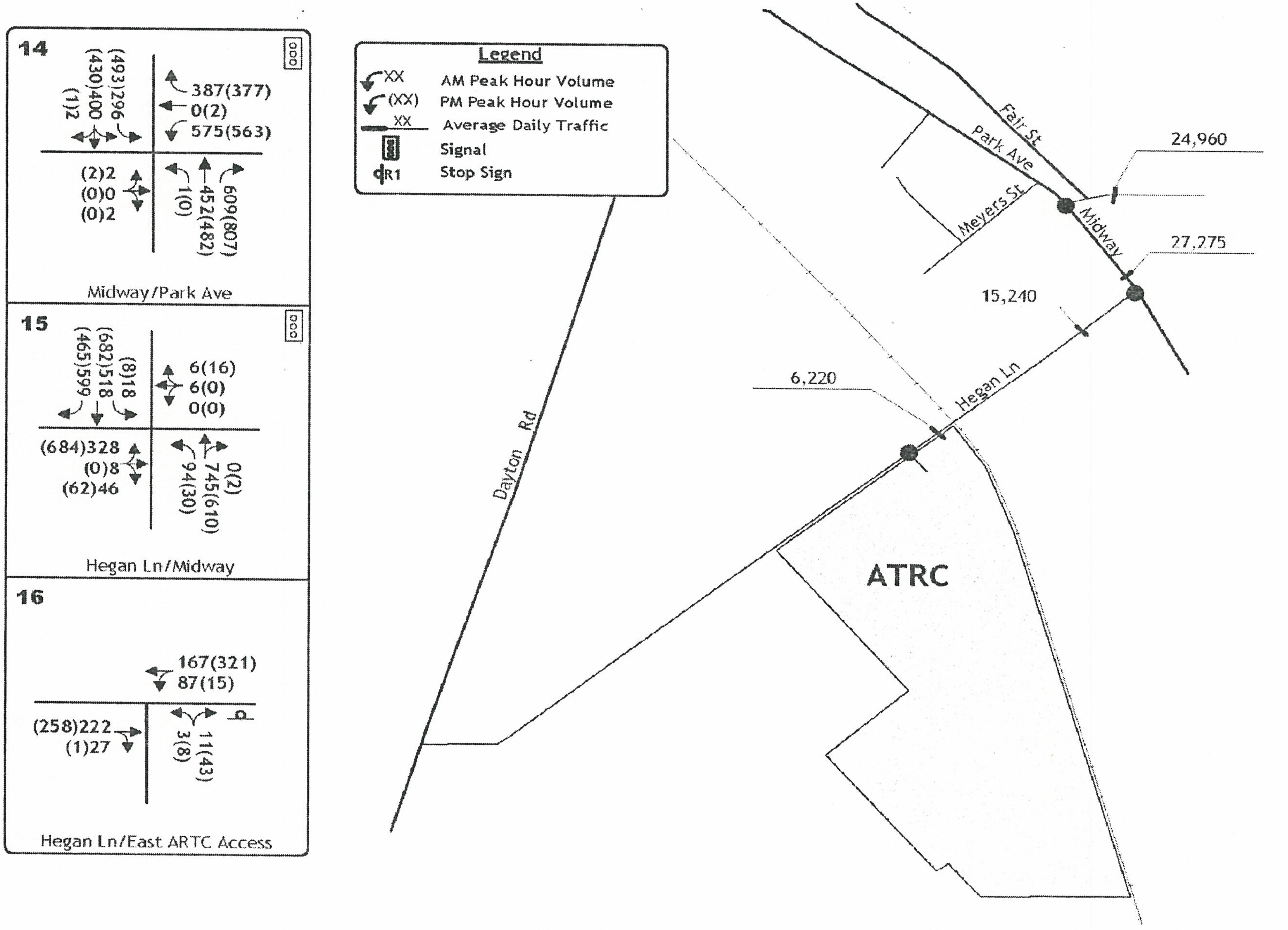
Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

CUMULATIVE PLUS MASTER PLAN TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-7b

Job No. 03496



Source: KD Anderson / Quad Knopf, Inc. 2004.

Quad Knopf

CUMULATIVE PLUS MASTER PLAN TRAFFIC VOLUME AND LANE CONFIGURATIONS

Figure 3.13-7c

Job No: 03496

CHAPTER FOUR

PROJECT ALTERNATIVES

CHAPTER FOUR
PROJECT ALTERNATIVES

4.1 DESCRIPTION OF PROJECT ALTERNATIVES

4.1.1 INTRODUCTION

The California Environmental Quality Act and the implementing CEQA Guidelines require that alternatives to the proposed project be discussed in the EIR. The value of such discussion is to inform public decision-makers of the differential environmental impacts that may be associated with each potential alternative, and to enable a reasoned judgment to be made as to which alternative to the proposed project may be environmentally superior. Section 15126.6 of the CEQA Guidelines provides the following description of what should be included in the alternatives discussion in an EIR:

> (a) Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.
>
> (b) Purpose. Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.
>
> (c) Selection of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly

explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

(d) Evaluation of Alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

(e) "No Project" alternative.

(1) The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (§ 15125).

(2) The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

(3) A discussion of the "no project" alternative will usually proceed along one of two lines:

(A) When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

(B) If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.

(C) After defining the no project alternative using one of these approaches, the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

(f) Rule of reason. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

(1) Feasibility. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

(2) Alternative locations.

> (A) Key question. The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
>
> (B) None feasible. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location.
>
> (C) Limited new analysis required. Where a previous document has sufficiently analyzed a range of reasonable alternative locations and environmental impacts for projects with the same basic purpose, the lead agency should review the previous document. The EIR may rely on the previous document to help it assess the feasibility of potential project alternatives to the extent the circumstances remain substantially the same as they relate to the alternative.

(3) An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

The sections of the Chapter that follow present a description of the alternatives considered and an analysis of the alternatives in the context of CEQA and the State CEQA Guidelines.

This EIR includes an evaluation of the following alternatives:

- No Project Alternative
- Unmet Needs Alternative
- Housing/Parking Alternative

Finally, this Chapter presents an analysis of the comparative environmental superiority of the various alternatives, as required by CEQA.

4.1.2 DESCRIPTION OF ALTERNATIVES

No Project Alternative

In accordance with Section 15126.6(e)(3)(B) above, the No Project alternative consists of an analysis of the circumstances under which the project does not proceed. In the case of the adoption of the Campus Master Plan 2004, the project site will remain guided by the existing Campus Master Plan (1990) ("No Project" alternative).

Unmet Needs Alternative

This alternative would allow those projects that are required to meet the existing unmet needs of the University. This alternative would include improvements to Butte Hall, Taylor II, an additional five acres of outdoor physical education facilities to meet current standards and a reduced scale Modoc II project designed to bring the building up to standard, but not increase the physical capacity. Improvements to the ATRC would be limited to those considered to be essential. These projects would include all of the ATRC Phase 1 and ATRC Phase III projects as well as the renovated swine unit. Eliminated from this alternative would be the new dairy unit, the Conference Center and the Events Center. Infrastructure improvements necessary to support these projects would be included.

Housing/Parking Alternative

This alternative would analyze a project that included only those facilities designed to accommodate additional and improved housing and parking facilities. This alternative would eliminate the planned recreational facilities as well as the natural history museum.

Improvements to the ATRC would be the same as for the unmet needs alternative above.

4.2 ANALYSIS OF ALTERNATIVES

No Project Alternative – 1990 Master Plan remains in effect

Under this scenario, the 1990 Master Plan would remain in effect and some of the additional projects designed to meet unmet current needs and serve the anticipated future enrollment would not occur. The following is a discussion of what would occur in the event that projects proceeded as outlined in the 1990 Master Plan.

Many of the facilities proposed in the Campus Master Plan 2004 are very similar to or identical to the facilities proposed under the 1990 Master Plan. Unlike the 1990 Master Plan, the Campus Master Plan 2004 includes provisions to serve the additional student population. Without those improvements, the project would not meet the University's objectives. The following discussion will focus on those areas of the plans that are different, and the corresponding environmental impacts associated with the different facilities.

Included in both the 1990 and 2004 master plans are the following facilities:

- Two land acquisition sites, including the Rio Chico area and the College Park area.
- Student Services Center (currently under construction).
- Modoc II (Demolition of the Aymer J. Hamilton Building).
- Taylor Hall. This was planned as a renovation project in the 1990 Master Plan (with 44,548 ASF) and is now proposed to be replaced with a 3-4 story building resulting in 76,000 ASF.
- Whitney Hall Expansion. The Campus Master Plan 2004 is a larger expansion than proposed in the 1990 Master Plan.
- Siskiyou Hall replacement.
- Parking. The 1990 Master Plan included plans for an additional 1,300 parking spaces, the Campus Master Plan 2004 includes facilities for 1,430 additional parking spaces.

New facilities proposed in the Campus Master Plan 2004 include the following:

- Butte Hall Rehabilitation.
- Rio Chico Physical Education Facilities
- Wildcat Activity Center
- Natural History Museum
- Improvements to the Agriculture Teaching and Research Center

Aesthetics

Under the "no project" alternative, impacts to aesthetic resources would be slightly less than the proposed project for the main campus, since the buildings under the Campus Master Plan 2004 are somewhat larger and greater in height. Aesthetic impacts related to the ATRC facility would be greater under the "no project alternative" since no improvements would be made to this facility.

Air Quality

Impacts to air quality would be slightly reduced under the "no project" alternative. There would be less construction activities, resulting in less exhaust emissions and fugitive particulate matter emissions. There would also be less traffic generated and reduced potential for carbon monoxide and other air pollutant emissions in the basin.

Biological Resources

The impacts to biological resources would be similar under this alternative. Each of the plans contains development and operations planning for the main campus and ATRC sites. The suitability of these sites for habitat of plant and animal species is compromised by the existence of urban uses, and thus the quality of the site is equivalent under each option. Impacts are considered similar.

Cultural Resources

The “no project” alternative would be likely to have greater impact on cultural resources, since it proposed demolition of houses in the Rio Chico area. The Campus Master Plan 2004 recommends that the historically significant houses in the Rio Chico area be relocated. Impacts on other cultural resources would be similar to the proposed project.

Geology and Soils

Impacts to geology and soils would be similar under both the 1990 Master Plan and the Campus Master Plan 2004. The Campus Master Plan 2004 would have a greater level of soil disturbance due to the increased number of buildings on the site, but no significant impacts would be expected to occur as a result. Impacts are similar under this alternative.

Hazards and Hazardous Materials

The “no project” alternative would have somewhat greater impacts related to hazards and hazardous materials since the proposed improvements to the ATRC would not take place.

Hydrology and Water Quality

The “no project” alternative would have similar impacts to hydrology and water quality as compared to the Campus Master Plan 2004. The Campus Master Plan 2004 would be more beneficial due to the improvements specified for the ATRC facility that will improve conditions related to the animal confining facilities.

Land Use and Planning

The “no project” alternative would have greater impacts with regard to land use and planning than the Campus Master Plan 2004 since it does not provide the facilities necessary to meet the needs of the campus and the community. The Campus Master Plan 2004 includes facilities that will benefit the community at-large.

Noise

There would be less increase in traffic noise under the “no project” alternative, since the campus would remain at current enrollment. Additionally, there would be less construction noise since fewer projects are anticipated under the existing Master Plan.

Population and Housing

Under the “no project” alternative, impacts related to population and housing would be reduced, as compared to the proposed project. The additional bed spaces called for in the project will allow more students to live on campus reducing related impacts to parking and circulation. Both plans recommend the acquisition of the same existing housing areas that would eliminate some housing in the City of Chico; however, this impact is likely to be minimal, since this acquisition is already taking place. The increase in student population associated with the project will result in growth inducing impacts beyond those considered in the previous plan. Therefore, impacts are reduced in this alternative.

Public Services

Impacts to public services under the "no project" alternative would be similar to the impacts under the proposed Campus Master Plan 2004. There will be a beneficial impact related to the proposed Campus Master Plan 2004, since the proposed plan outlines the services needed for the new facilities and specifies the improvements that need to be made to accommodate the new facilities.

Recreation

The "no project" alternative would have greater impacts than the Campus Master Plan 2004 on the construction of recreational facilities since there proposed plan calls for the construction of more recreational facilities than is required by the student population increase. Under the "no project" alternative, the beneficial impact of these new recreational facilities would not be realized.

Traffic and Circulation

The "no" project alternative would have slightly less impact on traffic and circulation since it would not accommodate the greater enrollment predicted under the proposed plan and would not include a new conference and events center at the ATRC. With regard to the issue of parking, the "no project" alternative would also have less impact than the proposed Campus Master Plan since there would be no increase in enrollment. An inadequate supply of parking on the campus has been recognized as a problem for many years by the University and the City of Chico. The proposed Campus Master Plan 2004 would have a similar impact related to parking as the 1990 Master Plan, since both plans include provisions for additional parking. Due to site constraints and limited land availability for parking, impacts would remain under both scenarios related to parking.

Unmet Needs Alternative

The following is a comparison of the proposed project and the Unmet Needs Alternative.

Aesthetics

Under this scenario, the impacts on aesthetics would be slightly reduced since some of the renovation projects would maintain the same building footprint and would be smaller in height, since they would not need to accommodate additional capacity. Impacts on aesthetics for the ATRC would be slightly increased since some of the improvements would not be undertaken.

Air Quality

Impacts to air quality would be slightly reduced under the “unmet needs” alternative. There would be less construction activities, resulting in less exhaust emissions and fugitive particulate matter emissions. There would also be less traffic generated and reduced potential for carbon monoxide and other air pollutant emissions in the basin.

Cultural Resources

Impacts on cultural resources would be the same under this alternative as under the proposed Campus Master Plan 2004.

Hazards

Impacts on hazards and hazardous materials would be the same (less than significant) under this alternative since the improvements specified for the ATRC facility would still occur.

Hydrology/Water Quality/Drainage

Impacts to hydrology would be reduced in this alternative. The reduced level of construction associated with the project would result in fewer changes to the existing site topography, and place less demand on stormwater drainage systems. The alternative would not vary significantly from the proposed project with regards to water quality or hydrology. The impacts are reduced in this alternative.

Land Use

Impacts from incompatibilities with existing or planned land uses in the vicinity are less than significant, as they are with the proposed Campus Master Plan 2004. Impacts are similar between the proposed project and this alternative.

Noise

There would be less increase in traffic noise under the “unmet needs” alternative, since the campus would remain at current enrollment. Additionally, there would be less construction noise since fewer projects are anticipated under the proposed Master Plan.

Parks and Recreation

Under this alternative there would be less recreational facilities developed, although there would be sufficient recreational facilities to serve the student population. Impacts from the development of the additional recreational facilities would not occur, although it is likely that the Rio Chico area would be developed with some other type of use. Because the additional student population is likely to occur under either scenario, the impacts to parks and recreation are greater under this alternative.

Transportation and Circulation

Impacts to the transportation and circulation system would be greater under this scenario. The reduction in improvements would result in fewer provisions for parking and street improvements designed not only to accommodate future enrollment growth, but also to address existing transportation and parking deficiencies. The impacts to transportation and circulation are considered greater under this alternative.

Housing/Parking Alternative

The following is a comparison of the Campus Master Plan 2004 and the Housing/Parking Alternative.

Aesthetics

Under this scenario, the impacts on aesthetics would be increased since many of the projects would not be built, and older buildings that are incompatible with the campus style would not be replaced. Impacts on aesthetics for the ATRC would be slightly increased since the some of the improvements that would enhance visual quality would not be undertaken.

Air Quality

Impacts to air quality would be similar under the “housing/parking” alternative. There would be construction activities associated with creating additional housing and parking facilities, resulting in similar exhaust emissions and fugitive particulate matter emissions. Since this alternative would result in similar traffic generation, the resulting carbon monoxide and other air pollutant emissions in the basin would also be similar.

Cultural Resources

Impacts on cultural resources would be reduced under this alternative as under the proposed Campus Master Plan 2004 since fewer projects would be undertaken. The reduction in construction would limit the amount of disturbed lands, and reduce the potential for construction activities to impact or destroy historic or cultural resources.

Hazards

Impacts on hazards and hazardous materials would be the same (less than significant) under this alternative since the improvements specified for the ATRC facility would still occur.

Hydrology/Water Quality/Drainage

Impacts to drainage would be reduced under this alternative. The alternative has fewer developments associated with buildout, and would limit additional runoff and stormwater drainage impacts caused by new construction. Impacts to hydrology and water quality would be expected to remain the same under the alternative. Therefore, impacts are reduced in this alternative.

Land Use

Impacts from incompatibilities with existing or planned land uses in the vicinity are would be reduced slightly as compared with the proposed Campus Master Plan 2004. More parking would be provided for the campus that would reduce the parking congestion downtown. More students would be housed on-campus, which would reduce the need for off-campus housing.

Noise

The impacts related to noise would essentially be the same as the proposed Campus Master Plan 2004 under the "housing/parking" alternative, since new facilities would be constructed on campus and additional parking would be added resulting in increased traffic noise. There would be less construction noise since fewer projects would be anticipated as compared to the proposed Campus Master Plan 2004.

Parks and Recreation

Under this alternative there would be less recreational facilities developed, although there would be sufficient recreational facilities to serve the student population. Impacts from the development of the additional recreational facilities would still be likely to occur since the Rio Chico site would be used to provide additional parking area. Overall, impacts are considered similar under this alternative.

Transportation and Circulation

Impacts to the transportation and circulation system would be greater under this scenario. The reduction in improvements would result in fewer provisions for parking and street improvements designed not only to accommodate future enrollment growth, but also to address existing transportation and parking deficiencies. The impacts to transportation and circulation are considered greater under this alternative.

4.3 CONCLUSIONS

In accordance with CEQA Guidelines, all reasonable project alternatives have been evaluated to determine their comparative environmental superiority. The environmentally superior alternative would be the "no project" alternative, since there would not be an increase in enrollment, resulting in fewer students and a corresponding reduction in impacts to traffic, circulation, and parking; however, the "no project" alternative would not meet the project objectives, particularly with regard to accommodating the predicted increase in enrollment.

Among the remaining alternatives, the housing/parking alternative would be the environmentally superior alternative, since very few changes would take place to the campus buildings resulting in fewer impacts on the physical environment. The housing/parking alternative does not meet several of the stated project objectives of accommodating the increase in enrollment predicted for the campus.

CHAPTER FIVE

CONSEQUENCES OF PROJECT IMPLEMENTATION (MANDATORY CEQA SECTIONS)

CHAPTER FIVE
CONSEQUENCES OF PROJECT IMPLEMENTATION (MANDATORY CEQA SECTIONS)

5.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the State CEQA Guidelines requires that an EIR contain a statement briefly indicating the reasons that various possible new significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the EIR. Some of those effects are discussed in the individual topics in Chapter Three. The effects listed below were determined to be less than significant based on the discussion contained in the Initial Studies/Notices of Preparation and Chapter Three of this Draft EIR:

- Have a substantial adverse effect on a scenic vista.

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

- Conflict with existing zoning for agricultural use, or a Williamson Act contract.

- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

- Disturbance of unique paleontological resources as a result of improvements identified for the main CSUS campus or the ATRC.

- Rupture of a known earthquake fault.

- Strong seismic ground shaking resulting in seismic ground failure, including liquefaction.

- Exposure of people to potential health hazards.

- Result in a safety hazard related to a private airport available for public use for people residing or working in the project area.

- Violation of water quality standards or degradation of water quality.

- Depletion of groundwater supplies or substantial interference with groundwater recharge.

- Drainage patter alteration, runoff increase creating flooding or polluted runoff.

- Flood hazard impacts on housing, project impedance of or redirection of 100-year flood hazard flows.

- Land use conflicts between the proposed project and existing and planned land uses in the vicinity of the project site.

- Conflict with any applicable habitat conservation plan or natural community conservation plan.

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

- Development of the proposed project would increase the population in the vicinity (growth inducing impact).

- The potential of the project to displace residents currently living in College Park and Rio Chico.

- The potential impact on the City of Chico's vacancy rate as a result of the increased enrollment enabled by the proposed Master Plan.

- Maintenance of public facilities, including roads.

- Result in the need for new systems for power or natural gas.

- Result in the need for additional solid waste disposal.

- Result in the need for additional sewage treatment.

- Generation of vehicle trips due to increased enrollment and the development of parking structures will increase traffic on the adjacent street system.

- Implementation of the Master Plan will result increased demand for on-campus parking.

5.2 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Since the phrase "significant effect on the environment" occupies such a critical role in the preparation and review of an EIR, the following definition, as contained in Section 15382 of the State CEQA Guidelines, is provided for reference:

> "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area

> affected by the project including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Section 15126.2(b) of the State CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

The following effects were found to be significant project impacts for which mitigation measures are either not available or would not reduce the impacts to a less than significant level:

- **Impact #3.4-2:** Disturbance of archaeological or historical resources as a result of improvements identified for the main CSU Chico campus.

- **Impact #3.13.6:** Cumulative development in the study area by the Year 2025 will generate traffic on the planned street system

Other unavoidable impacts attributable to implementation of the proposed project have either been determined to be less than significant, or are capable of being mitigated to less than significant levels by measures recommended in this EIR. Notwithstanding the above-described unavoidable impacts, the Chico Campus Master Plan is being proposed to achieve the objectives outlined in Section 2.3 of this EIR.

5.3 IRREVERSIBLE IMPACTS

The following excerpt from Section 15126.2(c) of the State CEQA Guidelines defines the nature of this analysis:

> Uses of non-renewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse there after unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Implementation of the CSU Chico Campus Master Plan 2004 would commit non-renewable resources, including open space, energy resources, and building materials. During construction and operation the use of energy resources and materials would essentially be irreversible and irretrievable. Energy and other natural resources would be consumed throughout the life of the Campus Master Plan 2004.

5.4 CUMULATIVE IMPACTS

Cumulative impacts are two or more affects that, when combined, are considerable or compound other environmental effects. Each cumulative impact is determined to have one of the following levels of significance: less than significant, significant, or significant and unavoidable.

Section 15130 of the State CEQA Guidelines calls for the following discussion of the cumulative impacts of a proposed project:

> (a) An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in Section 15065(c). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.
>
> (1) As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.
>
> (2) When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the lead agency's conclusion that the cumulative impact is less than significant.
>
> (3) An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.
>
> (4) An EIR may determine that a project's contribution to a significant cumulative impact is de minimus and thus is not significant. A de minimus contribution means that the environmental conditions would essentially be the same whether or not the proposed project is implemented.
>
> (b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not

provide as great a detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impacts. The following elements are necessary to an adequate discussion of significant cumulative impacts:

(1) Either:

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency;

(2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are an issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.

(3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

(4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

(5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

(c) With some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis.

(d) Previously approved land use documents such as general plans, specific plans, and local coastal plans may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and project EIRs. No further cumulative impacts analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or area wide cumulative impacts of the proposed project have already been adequately addressed, as defined in section 15152(f), in a certified EIR for that plan.

(e) If a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact as provided in Section 15183(j).

The current CEQA Guidelines were recently challenged (*Communities for a Better Environment, et al. v. California Resources Agency*: Case No. 00CS 00300) as they pertained to the treatment of cumulative impacts, as well as other subjects. The Guidelines have not yet been updated to reflect the Court's decision; however, in performing analysis related to cumulative impacts, this EIR does not rely on any of the invalidated sections.

This EIR has considered the potential cumulative effects of the proposed CSU Chico Master Plan 2004 and has discussed them in Chapter Three of this EIR. For purposes of the analysis in Chapter Three, lists of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency have been used. Lists may vary between topical areas due to the different area of potential impact related to each topic. For example the area of cumulative impact for roadways would be different than that utilized for water quality. Generally, the area of impact for discussion of cumulative effect is the City of Chico.

Based on the evaluation in Chapter Three, cumulative impacts that cannot be fully mitigated, or otherwise avoided include:

- **Impact #3.13.6:** Cumulative development in the study area by the Year 2025 will generate traffic on the planned street system

  Background growth and Campus Master Plan 2004 implementation will result in conditions in excess of City of Chico standards at five intersections. These include Nord Avenue (SR 32) /

West Sacramento Avenue, 2nd Street / Cherry Avenue, 2nd Street / Normal Street, Midway / Park Avenue and Midway / Hegan Avenue.

Implementation of Mitigation Measures 3.13.6a-3.13.6e will reduce potential impacts, but not to a less-than-significant level. Cumulative impacts at Nord Ave. will remain ***significant and unavoidable.***

5.5 GROWTH INDUCING IMPACTS

Section 15126.2(d) of the State CEQA Guidelines provides the following direction regarding analysis of growth-inducing impacts:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

The Campus Master Plan 2004 is designed to serve an expected increase in enrollment to 17,900 AY FTES, a 2,900 increase over the 15,000 AY FTES goal of the 1990 Master Plan. This enrollment increase will be accommodated by the construction of five new major academic buildings, various recreational and support facilities, and 1,298 new bed-spaces. The capacity of the University will be increased and the student body population will continue to grow over the next 20 years. Therefore, the project is considered growth inducing.

APPENDICES

APPENDIX A

NOTICE OF PREPARATION

TO: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

SUBJECT: **Notice of Preparation of a Draft Environmental Impact Report**
California State University, Chico – Campus Master Plan 2004

FROM: California State University, Chico
Office of Facilities Planning
Chico, CA 95929

CONTACT: Greg Francis, Executive Dean and Director of Facilities Planning

California State University, Chico will be the Lead Agency and will prepare an Environmental Impact Report for the project identified below. We need to know your views as to the scope and content of the environmental information that is germane to your interests or statutory responsibilities in connection with the proposed project. If you represent an agency, your agency may need to use the EIR prepared by our agency when considering a permit or other approval for the project.

The Initial Study, project description, brief description of the probable environmental effects, project application, vicinity plan and site plan are contained in the attached materials. The regional location of the proposed project is shown in Figure 1; the project vicinity is shown in Figure 2.

Please be advised that a Scoping Meeting will be held to allow individuals and agencies to learn more about the project and to comment on the scope and content of the EIR. The meeting will be held on Wednesday, September 29, 2004 from 4 p.m. to 6 p.m. on the California State University, Chico campus, Kendall Hall, Rooms 207 and 209.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but **not later than October 15, 2004.**

Please send your response to Kim Hansen at Quad Knopf, One Sierragate Plaza, Suite 270C, Roseville, CA 95678. We request the name of a contact person for your agency.

PROJECT TITLE: Environmental Impact Report for California State University, Chico 2004 Master Plan

PROJECT APPLICANT: California State University, Chico

9/8/04
Date

Signature

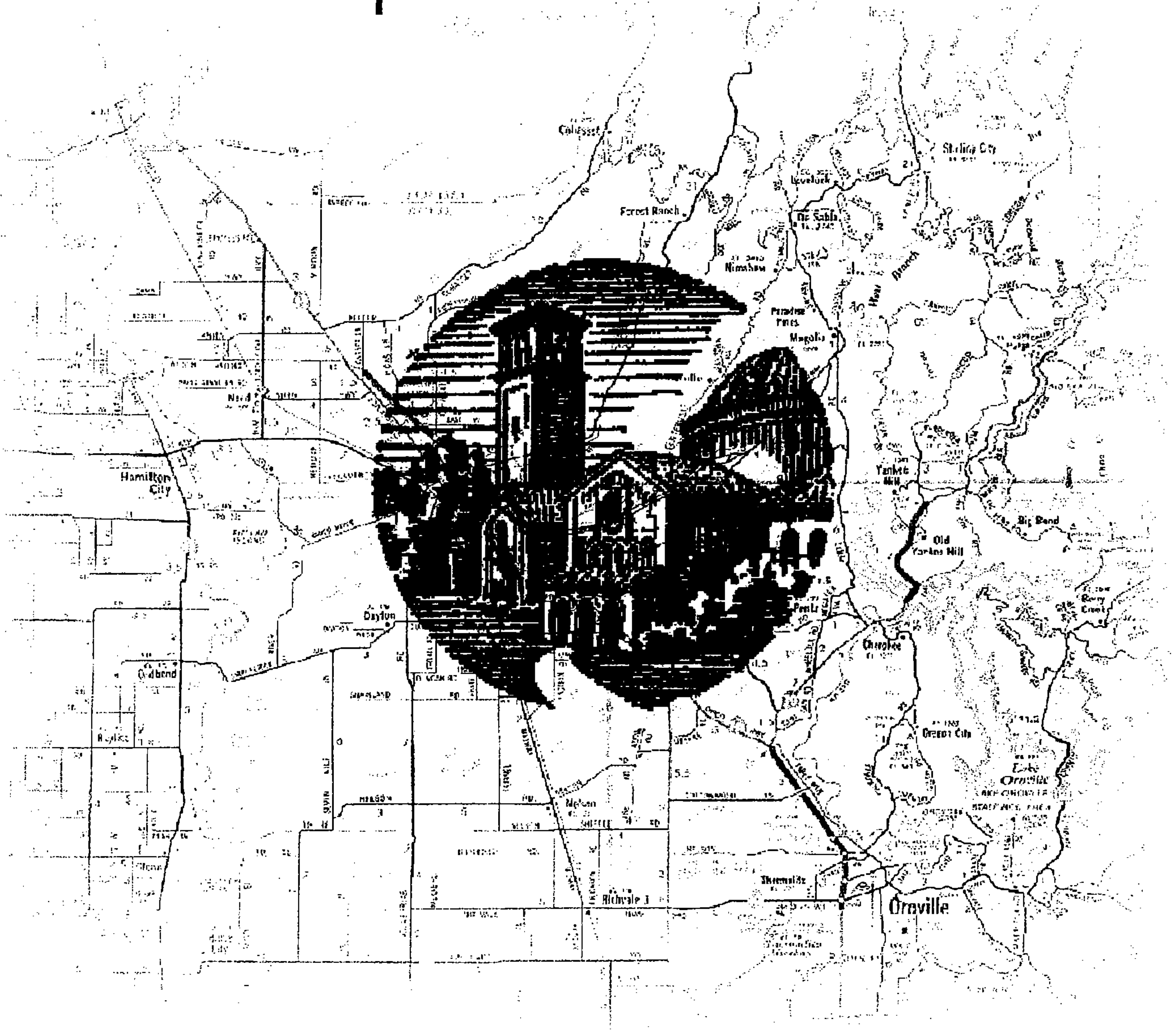
Executive Dean and Director of Facilities Planning
Title

Reference: *California Code of Regulations, Title 14 (CEQA Guidelines) Sections 15082(a), 15103, 15375*

Initial Study

California State University, Chico

Campus Master Plan 2004



September, 2004

Quad Knopf

Submitted to:
Greg Francis, Director
Office of Facilities Planning
California State University, Chico
Chico. CA 95929-0025

Submitted by:
Quad Knopf, Inc.
One Sierragate Plaza, Suite 270C
Roseville, CA 95678
(916) 784-7823

Initial Study

for

California State University, Chico

Campus Master Plan 2004

Submitted to:

Greg Francis, Director
Office of Facilities Planning
California State University, Chico
Chico, CA 95929-0025

Submitted by:

Quad Knopf

One Sierragate Plaza, Suite 270C
Roseville, CA 95678
(916) 784-7823

September, 2004

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Initial Study
California State University, Chico
Campus Master Plan 2004

1.0 INTRODUCTION

1.1 Purpose and Authority

This document is the Initial Study for the proposed California State University, Chico Campus Master Plan 2004. A regional location map is included as Figure 1. Figure 2 is a Vicinity Map and shows the main campus location within the City of Chico and Figure 3 shows the location of the Agricultural Teaching and Research Center (ATRC) in relation to the main campus.

The proposed project is the adoption and implementation of an updated Campus Master Plan (see Figure 4 and Figure 5). The existing Campus Master Plan was developed in 1990 and adopted in 1991. A Final Environmental Impact Report (EIR) was prepared and certified in January, 1991 for the California State University, Chico Campus Master Plan (SCH# 89030164). The proposed Campus Master Plan 2004 provides for a campus building plan that includes the construction of five new major academic buildings, two recreational facilities, a natural history museum, a child care center, approximately 1,300 bed-spaces of student housing, upgrades and expansion of the existing Agricultural Teaching and Research Center (ATRC), and two parking structures. The Plan also calls for the demolition of several outdated and obsolete buildings. Other large building and infrastructure renovation projects are also identified. Implementation of various projects will require acquisition of additional properties adjacent to the campus. The Campus Master Plan 2004 identifies the closure of three street segments in the southern part of the campus that would enhance the pedestrian nature of the campus. These include the full or partial closure of First Street between Ivy Street and Orange or Cedar Streets, creating a westward extension of the First Street pedestrian mall. The second proposed street segment closure would occur on Chestnut Street between Second and Third Streets from the north side of the existing alley to Second Street to allow for the development of a new parking structure. Third, Rio Chico Way would most likely be eliminated as part of the proposed Rio Chico Academic and Aquatic Center projects identified below in the Campus Master Plan 2004. These street closures were also identified in the 1990 Master Plan.

The Campus Master Plan 2004 also identifies improvements to the existing landscape and hardscape to address current visual and functional weaknesses. The Campus Master Plan 2004 also includes Design Guidelines that set forth a context for ensuring that the design of new buildings contributes to a consistent architectural vocabulary for the campus. The Campus Master Plan 2004 is designed to accommodate a student enrollment of 15,800 FTES (full time equivalent students) in physical capacity, which equals an academic year capacity of 17,900 FTES, an increase of 2,900 over the current capacity. This equals a head count of 20,000 individual students. Also to be included are 1,500 to 2,000 faculty and staff.

The California State University Trustees are the lead agency pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050, and the California State University CEQA Guidelines of the State University Administrative Manual (SUAM, Sections 9820-9827.02). Consistent with these Guidelines, this Initial Study identifies and discusses less than significant and potentially significant environmental impacts.

This document is an Initial Study, the purpose of which is to examine the potential impacts and the appropriate type of environmental document that is required pursuant to the CEQA Guidelines. The recommended document is a Program EIR.

This Initial Study and Notice of Preparation of a Program Environmental Impact Report will be circulated for agency and public review for 30 days, pursuant to CEQA Guidelines, Section 15073(d).

Organization of the Initial Study

This Initial Study is organized into the following sections.

Section 1.0: Introduction: Provides background information about the proposed Campus Master Plan 2004, including the purpose and conclusion of the analysis.

Section 2.0: Project Description: Describes the proposed Campus Master Plan 2004 location, individual components of the proposed Campus Master Plan 2004, and surrounding land uses.

Section 3.0: Environmental Checklist: Contains the Environmental Checklist form. The Checklist Form is used to describe the impacts of the proposed Campus Master Plan 2004. A discussion of each entry follows the Checklist, referenced to the Checklist sections.

Section 4.0: Persons and Sources Consulted: Lists documents and persons consulted for the analysis.

Section 5.0: List of Preparers: Lists the persons assisting in the preparation of this Initial Study.

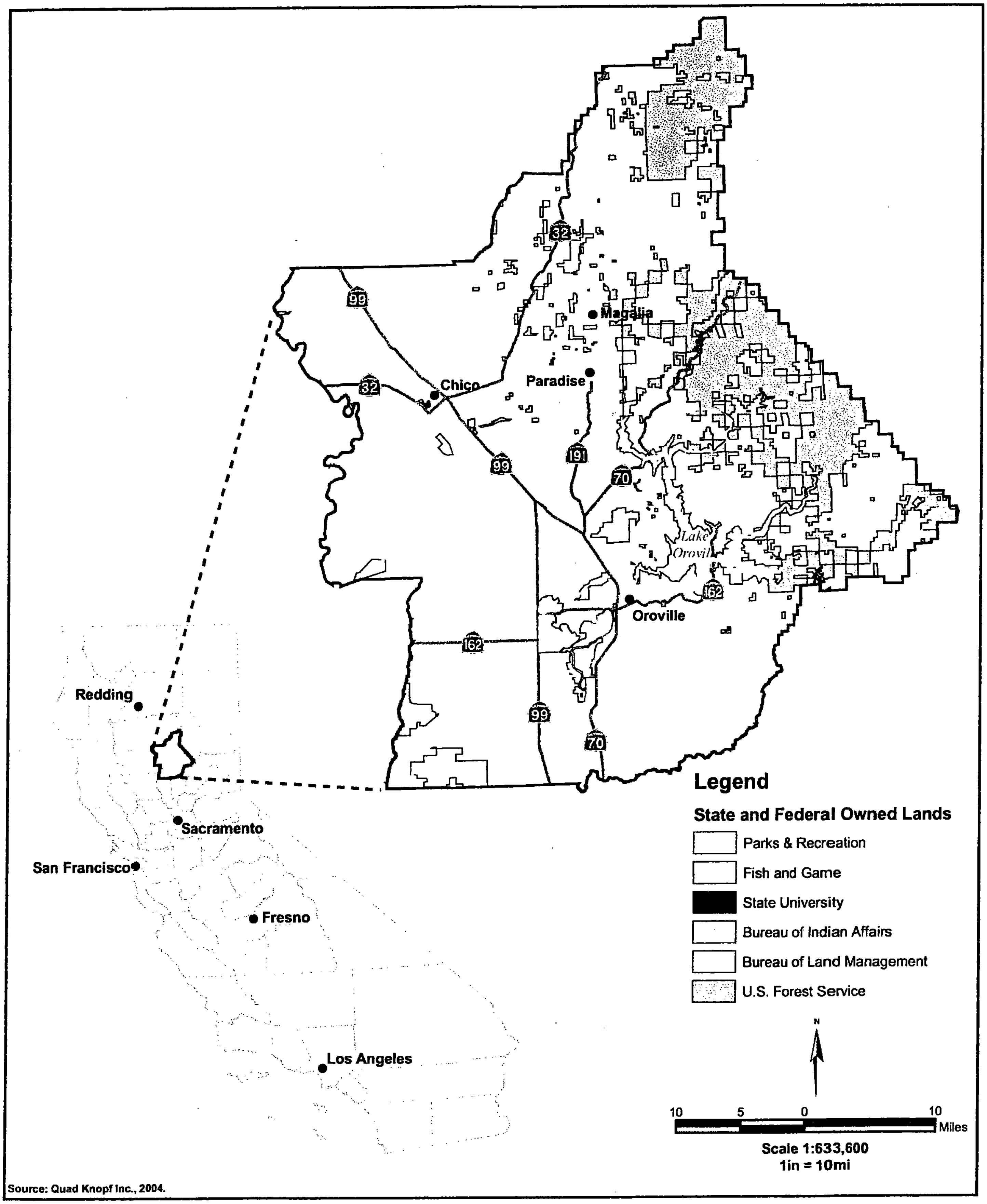
1.2 Determination

Based on the information in this Initial Study, it is concluded that the project will require further evaluation in an Environmental Impact Report. Preparation of a Program EIR is recommended.

2.0 PROJECT LOCATION AND DESCRIPTION

2.1 Location and Environmental Setting

California State University, Chico (CSU Chico) is located in the City of Chico, California, in Butte County in the northern Sacramento Valley (see Figure 1). The main campus presently encompasses 119 acres, in an area roughly bounded by the Union Pacific Railroad right-of-way on the west; by West Sacramento, Legion and Mansion Avenues on the north; by the Esplanade,



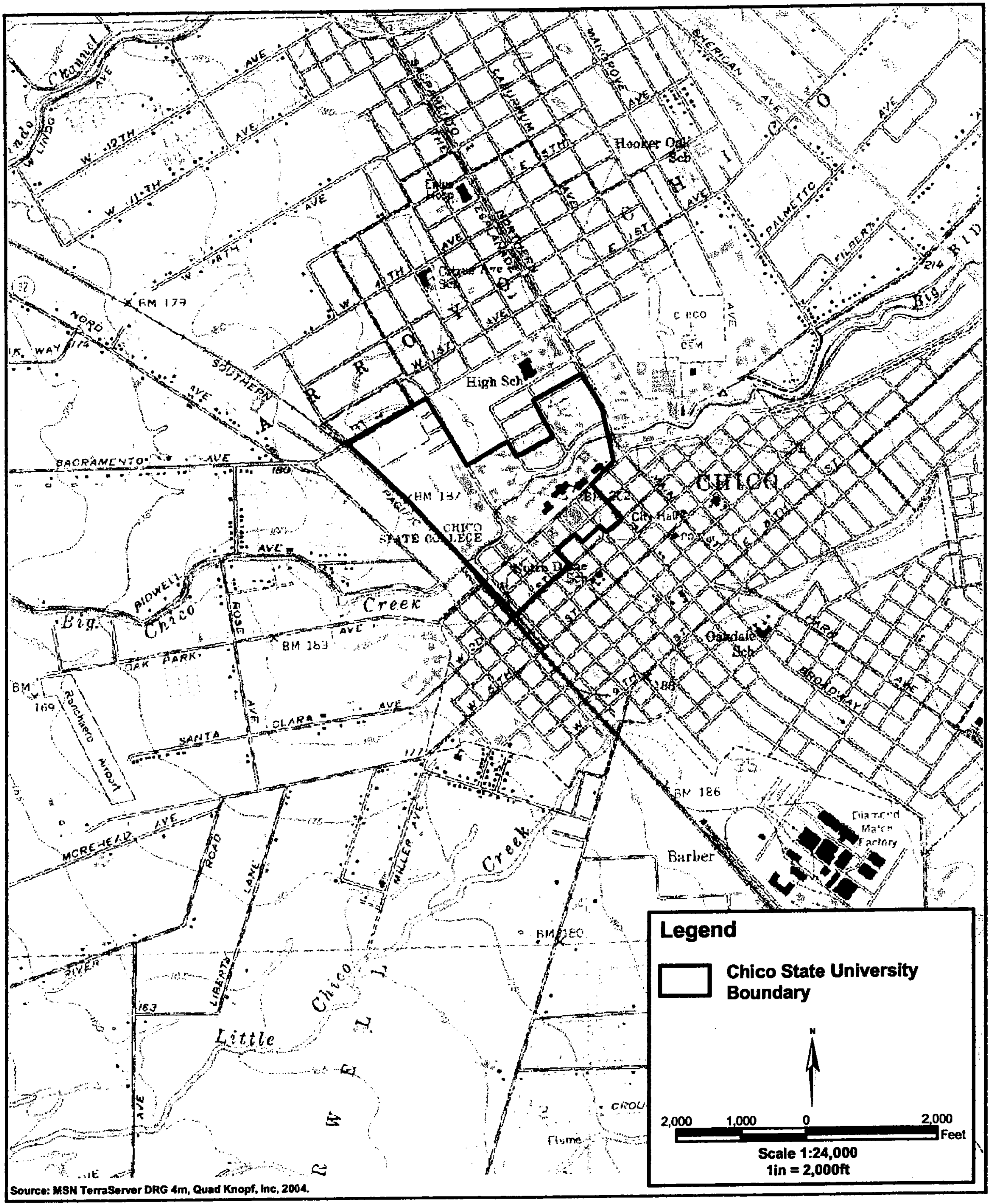
Source: Quad Knopf Inc., 2004.

Quad Knopf

REGIONAL LOCATION MAP

Figure I

Job No.: 03496

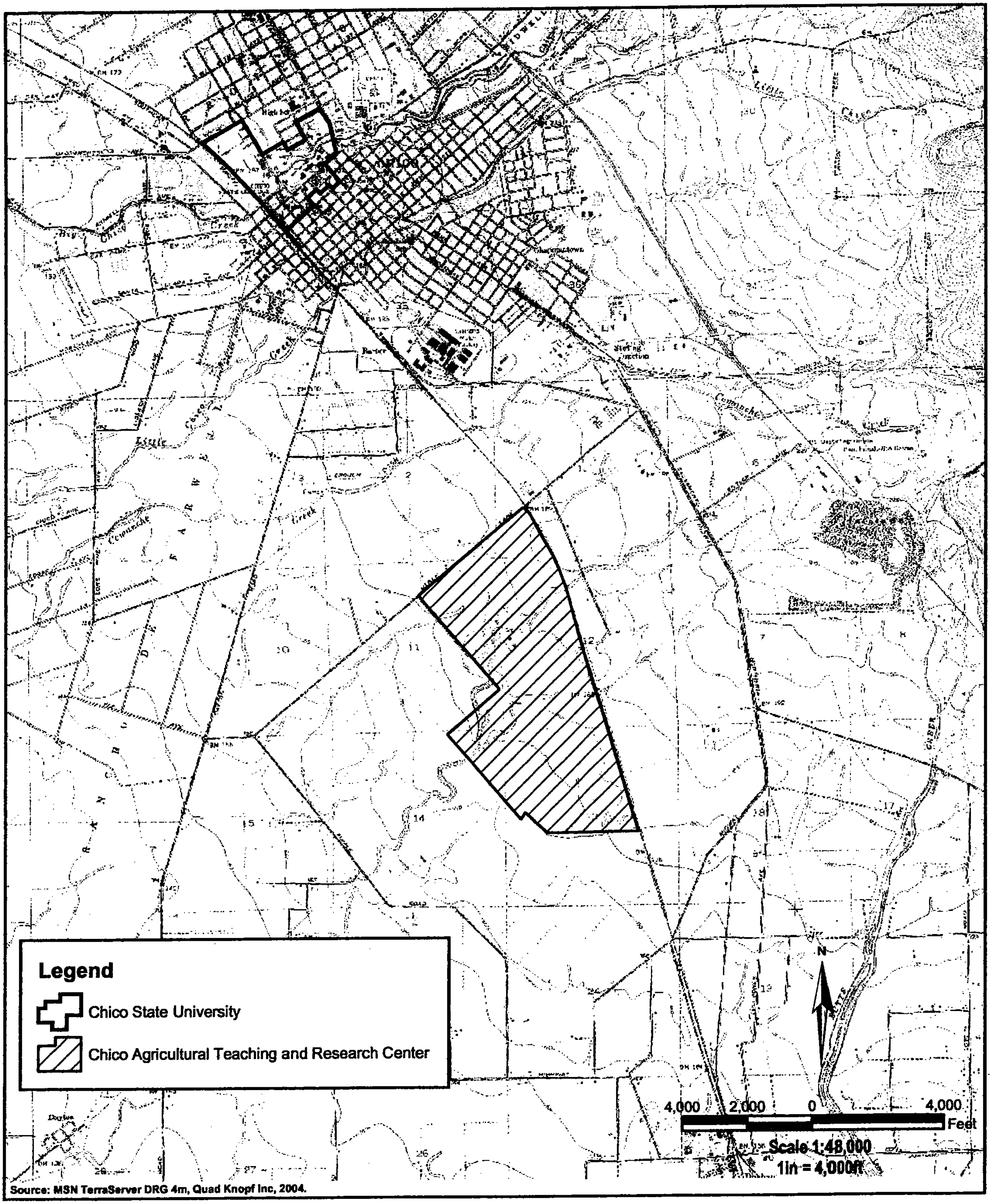


Source: MSN TerraServer DRG 4m, Quad Knopf, Inc, 2004.

Quad Knopf

MAIN CAMPUS LOCATION MAP

Figure 2



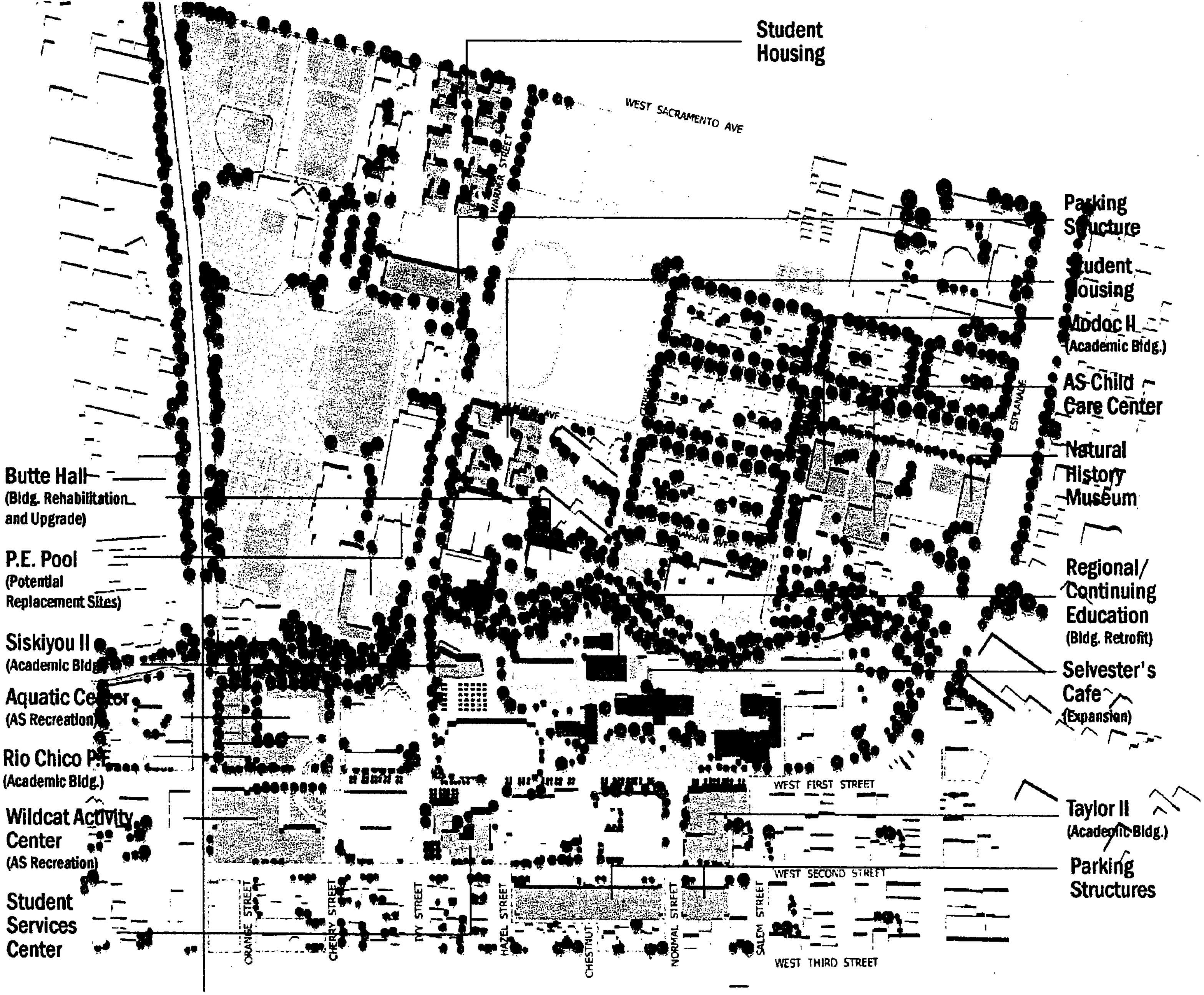
Source: MSN TerraServer DRG 4m, Quad Knopf Inc, 2004.

Quad Knopf

ATRC LOCATION

Figure 3

Job No.: 03496

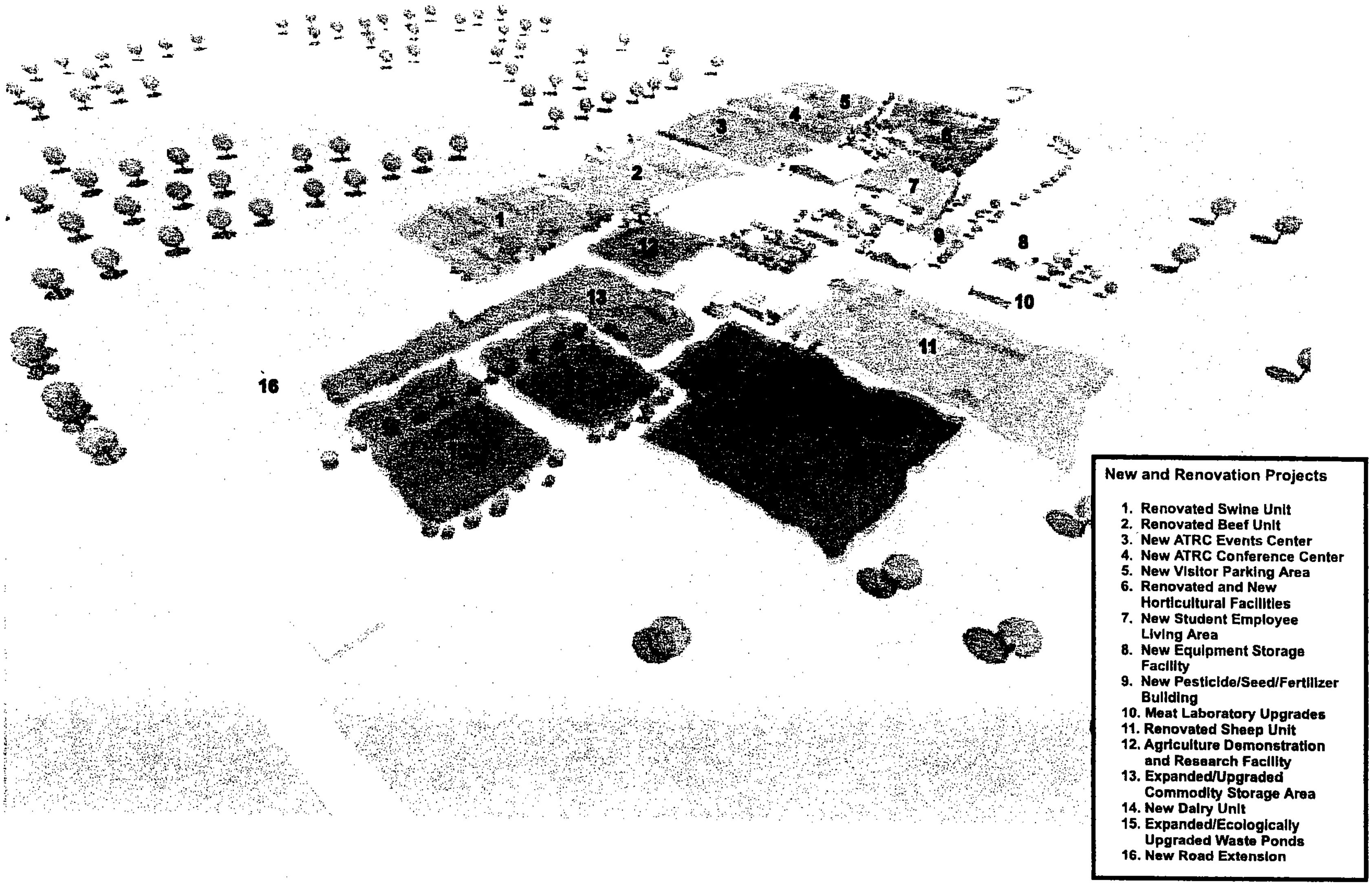


Source: AC Martin and Partners / Quad Knopf, Inc. 2004

Quad Knopf

CHICO STATE UNIVERSITY
MASTER PLAN 2004

Figure 4



Source: AC Martin and Partners / Quad Knopf, Inc. 2004

Quad Knopf

ARTC MASTER PLAN OF FACILITIES

Figure 5

Job No.: [illegible]

Children's Park, Salem and Normal Streets on the east; and by West Second and West Third Streets on the south (see Figure 2). The Campus Master Plan 2004 also proposes upgrades and expansion of the Agricultural Teaching and Research Center, an 800 acre site located approximately 2 miles from the main campus (see Figure 3). Approximately 95 acres are considered the core area of the ATRC and contain several working animal and plant crop farm units, administrative and teaching areas, public gathering, maintenance, storage and agricultural by-product facilities. The campus is situated in Township 22 North, Range 1 East, Mount Diablo Base and Meridian.

2.2 Project Description

The proposed project is the adoption and implementation of an updated Campus Master Plan 2004. The existing Campus Master Plan was developed in 1990 and adopted in 1991. The proposed Campus Master Plan 2004 provides for a campus building plan that includes the construction of five new major academic buildings, two recreational facilities, a natural history museum, a child care center, approximately 1,300 bed-spaces of student housing, two parking structures, and improvements to the Agricultural Teaching and Research Center (ATRC) located approximately 2 miles from the main campus. The Plan also calls for the demolition of several outdated and obsolete buildings. Other large building and infrastructure renovation projects are also identified. Implementation of various projects will require acquisition of additional properties adjacent to the campus. The Campus Master Plan 2004 also identifies improvements to the existing landscape and hardscape to address current visual and functional weaknesses. The Campus Master Plan 2004 also includes Design Guidelines that set forth a context for ensuring that the design of new buildings contributes to a consistent architectural vocabulary for the campus. The Campus Master Plan 2004 is designed to accommodate a student enrollment of 17,900 (AY) FTES (academic year full time equivalent students) physical capacity, an increase of 2,900 FTES over the current capacity.

The proposed project will meet several University strategic plan goals through accommodating the array of educational, support and cultural facilities maintained by and for the University, and supports the primary educational mission of California State University, Chico. In particular, the Campus Master Plan 2004 supports the five major goals of the CSU Chico Strategic Plan for the future:

1. Develop high-quality learning environments in and outside the classroom;
2. Invest in faculty and staff development;
3. Wise use of new technologies in learning and teaching environments;
4. Serve the educational, cultural and economic needs of Northern California;
5. Accountable to the people of the State of California, diversify revenue resources and manage the resources entrusted to the University.

One of the principal forces behind the Campus Master Plan 2004 is the need to accommodate current and anticipated growth. By Fall 2000, CSU Chico had reached its growth capacity of 14,000 FTES (full time equivalent students) physical capacity, which represented an academic year count of 14,908, and enrollment was expected to increase based upon the predicted state-wide rise in the number of college-age students seeking to enter the California State University system. After considerable University discussion, and in conjunction with the California State University Chancellor's office, campus leadership proposed a CSU Chico role of accommodating a small portion of the state-wide enrollment demand by increasing its growth capacity to 15,800 FTES physical capacity or approximately a total of 17,900 academic year (AY) FTES and 20,000 individual students.

In addition to the growth pressures placed upon the University that will necessitate the construction of new classrooms and laboratories, there is a need to replace several aging campus buildings, a need to update other facilities, and a need to accommodate several expanded academic programs. The Campus Master Plan 2004 addresses these basic needs as well as various specific facility needs including: the need to expand CSUC-sponsored student housing and the need for additional parking and outdoor recreation space. These new academic facilities, expanded student housing, outdoor recreation fields, recreation center, or additional parking will, in some form, require intensification of uses on-site and/or acquisition of additional property.

The Campus Master Plan 2004 also addresses a number of other issues related to the campus functional and visual environment. As the campus is noted for its elegant architecture, mature landscaping, human scale and pedestrian orientation, a major goal of the Plan is to maintain and enhance those qualities of the campus. The Campus Master Plan 2004 addresses campus architecture, landscaping, open space, signage, lighting, bicycle storage and campus benches and trash receptacles. Further, just as the Plan identifies the location and describes the essential characteristics of the new and updated buildings for the campus, it also discusses updates and expansions to essential campus infrastructure that supports those buildings.

Accommodating campus growth in the context of achieving a balance between any enrollment increases and the quality of life at CSU Chico is an important cornerstone goal of the Campus Master Plan 2004. Specific goals for the Campus Master Plan 2004 include:

- Use open space as an organizational element
- Promote a strong expression of landscape including a range of sizes and appropriate species of trees
- Promote a walkable campus that provides a logical progression of spaces linking destinations
- Preserve the natural characteristics of Big Chico Creek while permitting visual enjoyment of them as viewed from the campus
- Emphasize a scale of facilities that is compatible with human activities and perceptions
- Promote facilities that are part of a recognizable "family" of related structures, hardscape and other environmental elements identified with CSU Chico
- Discourage the presence of the automobile and other motorized vehicles while encouraging pedestrian and bicycle modes of movement
- Promote built systems that respect, maintain and work with the natural environment

With the anticipated increase in campus physical capacity growing from approximately 15,000 (AY) FTES to 17,900 (AY) FTES, an additional 134,850 ASF (Assignable Square Feet) of instructional space (2,900 x 46.5 ASF/FTES) will be needed to serve its students. The total additional facility need for the campus would be an average of 115 GSF per FTES or a need of 333,500 gross square feet. Most of this new net instructional space would be needed for classrooms (lecture), laboratories and offices. This will be accomplished through removal of substandard facilities and minor reassignments of existing space categories. The Campus Master Plan 2004 proposes the development of four new State-supported facilities, one major renovation project and two future land acquisition projects. The acquisition projects are identified as a future "reserve sites" for a future academic facility (Rio Chico area) and for additional campus student housing and parking (College Park area). Table 2-1 lists the proposed Campus Master Plan 2004 projects.

Table 2-I
Proposed Campus Master Plan 2004 Projects

Project	**Description**
Butte Hall - Rehabilitation	48,538 ASF (88,874 GSF)
Taylor II – Demolition/Replacement	76,000 ASF (116,900 GSF)
Student Services Center (In process)	79,960 ASF (122,422 GSF)
Modoc II –Demolition/Replacement	37,980 ASF (58,400 GSF)
Siskiyou II - Demolition/Replacement	38,200 ASF (58,800 GSF)
Rio Chico Physical Education/Aquatic Center - Acquisition	46,200 ASF (71,000 GSF)
Outdoor Physical Education Facilities	5 acres
Whitney Hall - Demolition/Replacement College Park – Acquisition	1,298 new bed spaces
Whitney Hall – Food Service	23,000 GSF (6,500 meals/day, 2,200 meal plans)
Outdoor Recreation	38 acres
Wildcat Activity Center	124,658 – 133,400 square feet
Indoor Child Care Facilities	137,600 ASF (172,000 GSF)
Outdoor Child Care Areas	177,200 square feet
Automobile Parking	1,430 additional parking spaces
Bikeways & Bike Parking	Relocate and add new bike parking facilities
Northern California Natural History Museum	11,000 square feet
Utility Infrastructure	Upgrades & Expansion
Agriculture Teaching & Research Center	Renovated swine, beef & sheep units Demonstration & research facility (10,400 GSF) ATRC events center (45,000 GSF) Expanded commodity storage area (75,000 GSF) Expanded, ecologically updated waste ponds New dairy unit ATRC conference center (7,000 GSF) Renovated and new horticulture facilities New student housing New equipment storage facility (15,000 GSF) New pesticide seed fertilizer building (5,875 GSF) Meat laboratory upgrades

Butte Hall. Butte Hall, built in 1972, is in need of extensive modifications related to asbestos removal and mitigation, HVAC renovation, and electrical systems. Since the extensive nature of this rehabilitation project will affect all seven floors and multiple building systems, temporary academic space will be needed during the construction period to house the displaced academic programs. The proposed rehabilitation project will result in 48,538 ASF (88,874 GSF).

Taylor Hall Replacement (Taylor II). This project was originally planned as a renovation; however, the current Taylor Hall (constructed in 1965) exhibits numerous building system deficiencies, including those related to electrical, mechanical, ADA accessibility and fire life safety. Taylor Hall is occupied by the College of Humanities and Fine Arts that, as the largest program on campus, is programmed for continued growth and has many special needs that its current program space does not provide. Many offices and classrooms related to these programs are currently situated in temporary modular buildings. To address these inadequacies it is proposed to replace the obsolete Taylor Hall with a new 3 and 4 floor 76,000 ASF (116,900 GSF) building forming a courtyard, fore court and entry court spaces around the perimeter. The new Taylor Hall will provide additional faculty office, lecture/instructional laboratory and instructional activity space that will include dance and music practice, recording studio, and recital hall space. Taylor Hall may also include an art gallery for University use.

Student Services Center. A new 4-floor Student Services Center (79,960 ASF/122,422 GSF) is currently in design that would consolidate the student services functions on the one block site immediately south of the Meriam Library and west of the Bell Memorial Union. A Mitigated Negative Declaration (State Clearinghouse #2003102041) was adopted for the Student Services Center in November 2003. The building layout will feature a courtyard oriented towards the Meriam Library/First Street Mall, as well as an entry court where the structure forms a natural south entry to the University along Ivy Street

Modoc II. This facility will replace the existing Aymer Jay Hamilton facility (AJH) that was originally completed in 1950 as a public school structure. The AJH facility is located in the northeastern end of the campus, and is a relatively small, inefficiently configured one-story building in poor condition. The building was planned for demolition in the 1990 Master Plan. The Campus Master Plan 2004 calls for removal of the structure to create a site for a two to three floor modern classroom laboratory facility (37,980 ASF/58,400 GSF). The site created by the removal of the AJH facility would also create additional space for the first phase of a child care center (118 children capacity) potentially constructed in association with the adjacent existing Modoc Hall. The site, when coupled with adjacent open space and parking lot facilities, would also provide space for a proposed Natural History Museum.

Siskiyou II. The existing Siskiyou Hall was built in 1957 as an industrial arts instruction facility. The 1990 Master Plan showed this building as a temporary facility to be removed. The building is nondescript and does not efficiently utilize the site, and is also more expensive to maintain per square foot than a modern, efficient multi-story building. The Siskiyou II replacement facility is a four-floor classroom/laboratory building with a ground floor campus police facility (38,200 ASF/58,800 GSF). A minimum of 12 parking places screened from public view would also be placed at the north end of the building tied into the service road.

Rio Chico Physical Education and Aquatic Center Facility. This site is currently occupied by a small residential neighborhood known as Rio Chico and is surrounded by land owned by the University. It has been considered a prime site for acquisition to provide needed land for University programs. The Rio Chico neighborhood contains several single-family residences of historic value. Any historic structures are proposed to be relocated to nearby residential neighborhoods as part of any acquisition and development concept for the site. The site lies adjacent to the planned Wildcat Activity Center and is connected by pedestrian bridge directly to the campus physical educational fields and facilities. There has been considerable interest from the Chico Unified School District and the greater Chico community in a swimming pool that could serve both the instructional and recreational needs of these groups. In addition to the pool itself, the pool facility would need to have bathrooms, showers, locker rooms and other related facilities. The CSU Chico owned surface parking lot to the west of the site would also be part of this development that would consist of 46,200 ASF/71,100 GSF, in the following configuration:

- A physical education facility that would accommodate additional basketball, multipurpose and specialized indoor courts, aerobics, dance and fitness rooms as well as showers, small classroom and office spaces

- A recreationally oriented aquatic center with pool and outdoor areas suitable for gatherings. The aquatic center would include a 25-50 meter pool (5-7 lanes) and associated facilities totaling approximately 15,000 square feet

- Open space plaza at the southeast corner of First Street and Cherry Street

Outdoor Physical Educational Facilities. The recently constructed Yolo Hall Physical Education II project used a portion of the existing outdoor instructional physical education space. The outdoor physical education space needed for playfields and other facilities has fallen below the State standard allotment of 34 acres for a CSU campus of an enrollment of 15,000. Additional outdoor field space will be lost with the future expansion of the Central Plant facility that lies at the south end of the field area. The Campus Master Plan 2004 proposes acquisition of approximately five acres in proximity to the existing physical education facility. The most appropriate sites lie west of the railroad tracks along Highway 32, but no specific site has been selected at this time. A CSU Chico administration and faculty task force has projected that facilities totaling 38 acres consisting of additional athletic and recreational-related open space are needed beyond the standard State allotment discussed above. This Master Plan does not specify where these facilities would be located; however, some of the land may be purchased in the Highway 32 corridor or other nearby locations.

Non-State Supported Facilities

The California State University system does not provide direct funding support for various University facilities that are primarily for non-academic or community use. Important University facilities in this category include University-sponsored student housing, student recreational facilities, child care and parking facilities. These are of growing importance to CSU Chico since the University is both a residential campus and one that seeks to provide the types of facilities that attract students from outside its core service area.

Housing. The Campus Master Plan 2004 proposes a significant expansion of University-sponsored housing, due to the existing levels of unmet demands coupled with the inadequacy of the Whitney Hall dormitory that has a capacity of 496 students and the only kitchen and dining facilities for all on-campus students. Currently, approximately 1,731 students are accommodated in University-sponsored residence halls and apartments. A suite-cluster design is proposed in order to create small-scale residential communities on the sites identified for expanded University-sponsored student housing. The housing would include common space (lounge, kitchen, toilet facilities) shared by groups of 20 students in single and double sleeping rooms.

The Campus Master Plan 2004 has identified the re-use of the Whitney Hall site either by renovation of Whitney Hall, or replacement of it with a new housing facility, and further development of the College Park site, adjacent to Esken, Meechoopda and Konkow Halls as the most appropriate way to accommodate additional housing. The University proposes to remove the residence hall recreation center and use the site to replace the Whitney Hall kitchen facility and construct additional housing as part of the new dining hall structure.

The College Park development will require the University to acquire additional existing residential properties in the neighborhood totaling approximately 8 acres. Parking capacity for residential needs is included in the development vision for the College Park site. The Campus Master Plan 2004 recommendations provide for up to 1,298 new bed-spaces on the two sites, which would bring the campus total to 3,029 rentable bed-spaces. The Plan would be developed in four phases, and each phase incorporates both housing and adjacent open space for informal recreation activities.

Housing buildings are four stories high to maximize the capacity of the sites and to make the best use of existing and newly acquired properties on a campus where land is scarce. Buildings are limited to four stories to provide housing built to a human scale and for effective program management.

Food Service. The Campus Master Plan 2004 recommends a new 23,000 GSF food service facility on the ground floor of the first new 4-story residential building recommended for the Residence Hall site, to be constructed in Phase 1 of the Housing Master Plan. The facility is sized and equipped to prepare and serve up to 6,500 meals per day to a maximum of 2,200 meal plan participants and cash customers.

Outdoor Recreation. Chico's outdoor athletic/physical education facilities are essentially dedicated to instructional purposes and are not generally available to students and faculty for recreational use. This lack of dedicated recreation-oriented facility space at CSU Chico represents a weak link in the provision of quality of life at the campus. The needed facilities include various outdoor intramural (now referred to as "recreational sports") fields, indoor intramural courts and indoor recreational courts, fitness facilities and a recreational pool. Table 2-2 lists the facilities, totaling over 38 acres, needed to address CSU Chico's recreational needs.

Table 2-2
Outdoor Recreational Needs/Preliminary Program

Facility	**Acres**
Intramural Fields (15 fields) and Jogging Path	20.3 acres
Pavilion/Locker Rooms/Administrative Offices/Restrooms	0.4 acres
Sports Fields (6 fields) and Outdoor Skating	8.7 acres
Open Recreation (new and expanded needs)	9.3 acres
TOTAL	**38.7 acres**

Source: Campus Master Plan 2004.

Wildcat Activity Center. The current student recreation center concept is envisioned as a two-level 124,568 to 133,400 square foot indoor recreation center to be placed on a University-owned site, bordered by First Street, Cherry Street, Second Street and the railroad right-of-way on the north, east, south and west, respectively. This location is close to the existing CSU Chico parking structure and to the Rio Chico site, programmed for future acquisition for development of physical education facilities and a recreational Aquatic Center. The funding for this building will come from student fee assessments. It will displace the current warehouse buildings that house the shipping and receiving operation, the mailroom, and storage. New facilities will need to be provided to house these functions when the current buildings are removed.

Child Care. The current child care facility (Associated Students Children's Center) is located in the Aymer Jay Hamilton building (AJH) at the outer northeast edge of the campus. As discussed previously, the AJH building is slated for demolition. The center has a licensed capacity of 55 children. This facility only meets a fraction of the current and projected demand for child care. In a 1997 study prepared by Lionakis-Beaumont Design Group, it was estimated that a new 118 child capacity facility would serve approximately 25 percent of the total campus demand that equates to a demand for facilities able to accommodate 472 children. The 118 child capacity facility proposed in 1997 would require approximately 43,000 square feet of building and a slightly larger amount of outdoor space including outdoor parking. A first phase requiring 21,500 square of building and an equal amount of outdoor open space was proposed and has been included as a component of the proposed Modoc II building project. Table 2-3 lists the total estimated child care center space needed.

Table 2-3
Child Care Center Space Needs

Areas	**Square Feet**
Estimated Total Campus Need (472 children), Building Indoor Area	172,000 SF/137,600 ASF
Estimated Total Campus Need (472 children), Outdoor Areas	177,200 SF
Estimated Minimum Project Need for Child Care, Building (AS, Modoc II site)	21,500 SF/17,210 ASF
Estimated Minimum Project Need for Child Care, Outdoor Area (AS, Modoc II site)	22,150 SF

Source: Campus Master Plan 2004

Circulation and Parking. Currently there are approximately 2,195 non-motorcycle parking spaces primarily distributed at the periphery of the CSU Chico campus. The largest two concentrations are located north of the campus in the vicinity of the College Park neighborhood, with over 700 spaces, and in the southwest margin of the campus, with over 900 spaces. Many of the northern spaces are associated with students who stay in CSU Chico sponsored campus housing who do not drive to school but use their auto occasionally. In the fall of 2003, Kaku Associates developed a parking needs assessment that found that in addition to the total number of 2,210 on-campus parking spaces, there were at least 305 curbside and off-campus spaces that CSU Chico users utilize. To accommodate the future campus enrollment target of 17,900 (AY) FTES, a total of 3,220 spaces would be needed. Approximately 420 spaces will be lost as a result of the Campus Master Plan 2004 projects and relinquishing the leased parking facility at West Sacramento Avenue and Warner Street. An increase of 1,430 parking spaces will be needed to serve the future demand for the campus. Addressing the need for parking will involve the following strategies:

- Acquisition/leasing of additional land for parking facilities
- Intensification of parking through the development of parking structures
- Alternative transportation strategies that reduce the need for campus parking

The Campus Master Plan 2004 promotes the acquisition of industrial land to the southwest of the campus along the rail line for use as surface parking or other campus use. The Campus Master Plan 2004 includes the development of two parking structures in separate peripheral areas of the campus, each separated from the existing parking structure. These proposed structures could serve future users in the southeast and north campus areas. The locations explored and incorporated into the Campus Master Plan 2004 include a 4 level structure in the southern portion of the future College Park area of campus, and a 3 level structure along Second Street built on campus land.

The Campus Master Plan 2004 identifies the closure of three street segments in the southern part of the campus that would enhance the pedestrian nature of the campus. These include the full or partial closure of First Street between Ivy Street and Orange or Cedar Streets, creating a westward extension of the First Street pedestrian mall. The second proposed street segment closure would occur on Chestnut Street between Second and Third Streets from the north side of the alley to Second Street to allow for the development of a new parking structure. Third, Rio Chico Way would most likely be eliminated as part of the proposed Rio Chico Academic and Aquatic Center projects identified below in the Campus Master Plan 2004.

Bikeways and Bike Parking Areas. Approximately 30 percent of CSU Chico students use bicycles as their primary form of travel to the campus, only slightly fewer than use the automobile (35 percent). The Spring 2000 CSU Chico Bicycle Survey recorded 4,934 bicycle parking spaces on the CSU Chico campus. The parking spaces are distributed throughout the campus and are generally associated with classroom facilities and other major student destinations like the Library and the Student Union. With implementation of the Campus Master Plan 2004 projects, there will be opportunities to relocate and reconfigure bicycle parking as part of the site development of almost every proposed project. For example, the First Street "mall" improvements and the Siskiyou II building project will involve the reconfiguration of large numbers of bicycle parking areas. The Wildcat Activity Center, Rio Chico Academic/Aquatic Center projects and the Whitney Hall site student housing projects also represent significant opportunities to create new bike parking facilities and areas.

Northern California Natural History Museum. CSU Chico has identified the benefit of creating an 11,000 square foot facility to be used by CSU Chico students, public schools, and the larger community. The Museum would serve as display space for existing University collections and for traveling exhibits of interest to the University scientific program and the general public. The facility would provide tours for local primary and secondary schools, as well as visits by the general public and tourists. A site for the facility has been identified on University-owned land adjacent to the Bidwell Mansion Historic Park, accessible from the Esplanade. The museum would be built in two phases.

Infrastructure Plan

New infrastructure will be needed to serve planned new buildings and other facilities. Upgrades will be needed to meet evolving needs, such as telecommunications and classroom technology, and to achieve cost savings related to maintenance and energy savings. Specific modifications and improvements to the utility infrastructure include the following:

- Expand cooling capacity (chilled water generation and storage) by improving building efficiencies
- Expand central plant to accommodate additional chillers, towers, and a chilled water storage tank
- Extend the campus-wide underground distribution system to areas that are not adequately served and to serve planned new facilities
- Extend, upsize and repair the campus-wide underground steam distribution system to serve planned new facilities

- Extend the campus-wide 12 KV power distribution system to load centers not presently served

- Re-allocate buildings to different 12KV circuits to balance the load and make power available for areas master planned for new construction

- Provide emergency power for buildings currently without service

- Increase the capacity of existing emergency systems to support building critical functions

- Correct fuel and air pollution issues for existing generators

- Repair and upgrade the antiquated and undersized natural gas distribution system to provide additional capacity

The CSU Chico Central Plant facility located in the southwest corner of the athletic fields area of campus will be the site of new and upgraded equipment needed to serve campus growth and achieve energy efficiency and savings. An area to the north of the existing Central Plant is indicated as the logical area for Central Plant expansion.

Land Acquisition

CSU Chico is the second smallest campus by acreage in the CSU system. In order to continue to prosper and attract qualified students, the campus must obtain additional land in order to meet a variety of student needs. These would include such things as parking, housing, green space and recreation. The Campus Master Plan 2004 revision proposes the acquisition of the College Park and Rio Chico neighborhoods, as approved in the previous Master Plan.

Agricultural Teaching and Research Center (ATRC)

The ATRC is a specialized and separate activity area of the CSU Chico campus operating as a teaching laboratory of the CSU Chico College of Agriculture. The ATRC represents a unique working farm facility demonstrating agricultural practices for use in the Northern California region. The majority of the projects identified in the Campus Master Plan 2004 for the ATRC are eligible for state funding as part of the standard College of Agriculture academic requirements. There are some projects that will be augmented by or provided by non-state funding.

Agricultural Demonstration and Research Facility. The ATRC will accommodate research and demonstration activities that support instruction in Agricultural classes. Existing facilities are old temporary buildings that are becoming increasingly difficult to maintain and cannot accommodate the need to effectively demonstrate new technological advances. The new demonstration facility is estimated to be 10,400 Gross Square Feet (GSF). Major program components in the Campus Master Plan 2004 include:

- 24-station computer laboratory
- Small conference room
- Open laboratory for classroom related student research
- Two instructional activity areas
- Restrooms and shower facilities

New Dairy. This project is designed to upgrade and relocate the dairy facility next to the new lagoon waste water system, a better location for the unit with the highest waste management needs. Major program components include:

- Free-stall system, traditional milk production facility
- Demonstration 50-acre grass-fed organic dairy
- Self-locking stanchions to facilitate artificial insemination and embryo transfer
- Two separate milking systems comprising 12 state-of-the-art, computerized, automated milking machines
- Bulk tank milk storage units
- New well, pump, fencing, and a set-sprinkler system integrated with the ATRC Supervisory Control and Data Acquisition (SCADA) system to support organic milk production

Commodity, Grain and Hay Storage. The ATRC does not have adequate feed storage facilities, and efficient use of the current facilities is not possible. The Campus Master Plan 2004 recommends construction of a larger, more efficient and integrated, covered concrete drive-through commodity storage building (75,000 GSF) with eight storage bays. The specific program components include:

- Eight 25-foot wide and 30-foot deep storage bays
- Dump pit where grain can be unloaded and moved by auger
- Eight 75 ton grain bins with dryer devices
- Open-span, covered concrete slab for hay storage
- Uncovered concrete slab for silage bag storage

Pesticide, Seed and Fertilizer Building. This project would replace the existing chemical storage building with a combined pesticide and fertilizer storage complex. Increased regulations concerning storage, handling, and use reporting of agri-chemicals dictates the need for this facility. The project would consist of:

- 500 gallon capacity dry sump for collecting and re-circulating spilled spray material
- 12-inch stem wall to insure containment in case of a spill
- Covered slab for parking spray equipment
- Lockers, safety showers and eye washes
- Structure with cement flooring for fertilizer and seed storage

Equipment Storage Facility. This facility will consist of a 30 ft x 500 ft pole barn structure with mounded gravel floor designed to protect valuable research and farm equipment.

Swine Facility. The Campus Master Plan 2004 calls for a comprehensive swine facility renovation project with significant new facility expansions to include the following:

- 40 sow (group pen) gestation/breeding barn with attached small lab for artificial insemination and breeding facilities (renovate existing buildings and expand by 1,040 square feet)
- 12-crate farrowing barn with attached office and associated two-bedroom student apartment with one kitchen and bath unit, laundry room with shower (renovate Building 21 and expand by 1,215 square feet)
- Develop environmentally controlled nursery barn (renovate Building 22 and expand by 180 square feet).
- Automated gutter flush for waste management
- Automatic feeding system
- Automatic watering and waste removal system
- Tenderfoot flooring and stainless steel construction

The proposed facility will be constructed to current industry standards with regard to space requirements, animal comfort and bio-security.

ATRC Conference Center. The conference center will facilitate professional meetings ranging from 30 to 300 persons. The major program components include:

- Multi-use, divisible meeting room
- Full kitchen
- Offices
- Farm marketing facility for ATRC agricultural products
- Reception area
- Full restroom facilities

ATRC Events Center. The ATRC Events Center is proposed to have a capacity of 2,000 persons, approximately 45,000 GSF.

- Portable bleachers with an announcer's booth centrally located above the bleachers
- Concession stands and restrooms
- Large foyer for ticket sales or registration
- Appropriate lighting and a sprinkler systems
- Sound system, staging and portable pens

Meats Laboratory Upgrade. The corral/pen structure behind the existing meats laboratory will be replaced with an updated product-safe facility that will provide a site for quarantine of all off-site livestock needed for FFA and 4H field days. The improvements include:

- A wall between the front entrance and the stairwell to the conference room
- Replacement of the existing air conditioning unit (including ducting and vents)
- Modern refrigeration unit in processing room

Waste Management System. The existing agricultural by-product ponds will be enlarged and sealed to facilitate greater water handling capacity to prevent ground water contamination, to meet EPA regulations, and to more efficiently recycle farm produced nutrients. The major components of the project are:

- Agitator and pump, to feed the irrigation system for each lagoon
- Suitable waste-water capturing system for each unit
- Anaerobic digester for each unit
- A covered storage facility and additional pad space for composting

Beef Unit Additions and Upgrade. The existing preparation area in the Beef Show Barn will be expanded to hold 24 students. The existing limited artificial insemination barn will be upgraded with new artificial insemination/embryo transfer building. Pastures will be enhanced with new well pump, sprinkler and fencing improvements. This will be accomplished with the following project components:

- Renovate Building 23 by remodeling the existing student apartment to accommodate two large bedrooms
- Upgrade preview barn with upgraded meeting rooms, office facility, electrical system and lighting
- Demonstration site for assisted animal reproduction
- Upgrade feeding facility for recipient/donor cows
- Research area with bull collection unit, artificial insemination breeding boxes, donor flushing facility and a dustproof, environmentally controlled embryo handling room
- Holding pens with a cement, nonskid floor
- New water well and pump to support irrigation of 100 acres of pasture
- New sprinkler set systems connected to the ATRC SCADA irrigation control systems for 14 pasture acres
- New fencing for irrigated pasture

Sheep Unit Additions and Upgrade. The Campus Master Plan 2004 calls for a complete renovation and upgrade of corrals, gates, and fencing to accommodate 300 head as well as rebuilding and expanding the maternity barn. The major components of this project include:

- Renovate student apartment
- Convert utility room into artificial insemination/embryo transfer room
- Renovate corrals, gates, and fencing
- New electrical wiring throughout
- Computer and networking infrastructure
- Rebuild and expand maternity barn (approximately 925 square feet)
- Mechanical feeding system with feed mixer
- Improvements to Sheep Management Center

Ornamental Horticulture Unit Additions and Upgrade. The Horticulture Headhouse (Building #7) will be renovated and the horticultural area will be reorganized. Two new greenhouses will replace existing deteriorated facilities. These improvements include:

- New conservatory-type glasshouses
- New walk-in cold boxes
- Two new offices
- State-of-the-art environmental controls for greenhouses

3.0 ENVIRONMENTAL CHECKLIST FORM

1. Project Title:

CSU Chico Campus Master Plan 2004

2. Lead Agency Name and Address:

Trustees of California State University
Office of the Chancellor
401 Golden Shore
Long Beach, CA 90802-4210

3. Contact Person and Phone Number:

Greg Francis, Director
Office of Facilities Planning
California State University, Chico
Chico, CA 95929-0018
(530) 898-6235

4. Project Location:

California State University, Chico (CSU Chico) is located in the City of Chico, California, in Butte County in the northern Sacramento Valley (see Figure 1). The main campus presently encompasses 119 acres, in an area roughly bounded by the Union Pacific Railroad right-of-way on the west; by West Sacramento, Legion and Mansion Avenues on the north; by the Esplanade, Children's Park, Salem and Normal Streets on the east; and by West Second and West Third Streets on the south. The Campus Master Plan 2004 also proposes upgrades and expansion of the Agricultural Teaching and Research Center (ATRC), an 800 acre site located approximately 2 miles from the main campus. Approximately 95 acres are considered the core area of the ATRC and contain several working animal and plant crop farm units, administrative and teaching areas, public gathering, maintenance, storage and agricultural by-product facilities. The campus is situated in Township 22 North, Range 1 East, Mount Diablo Base and Meridian.

5. Project Sponsor's Name and Address:

California State University, Chico
Office of Facilities Planning
Chico, CA 95929-0025

6. General Plan Designation:

The City of Chico General Plan designates the California State University, Chico main campus as "Public Facilities and Services." The ATRC facility is designated Orchard and Field Crops (OFC) in the Butte County General Plan.

7. Zoning

The affected site on the CSU Chico Campus is designated as P-Q (Public or Quasi-Public) under the City of Chico Zoning Ordinance. The Agricultural Teaching and Research Center is zoned A-20 (Agriculture, 20 acre minimum) in the County of Butte.

8. Description of Project:

The proposed project consists of the adoption of the Campus Master Plan 2004 for the California State University, Chico campus. The existing Campus Master Plan was developed in 1990 and adopted in 1991. The proposed Campus Master Plan 2004 provides for a campus building plan that includes the construction of five new major academic buildings, two recreational facilities, a natural history museum, a child care center, approximately 1,300 new bed-spaces of student housing, two parking structures, and improvements to the Agricultural Teaching and Research Center (ATRC) located approximately 2 miles from the main campus. The Plan also calls for the demolition of several outdated and obsolete buildings. Other large building and infrastructure renovation projects are also identified. Implementation of various projects will require acquisition of additional properties adjacent to the campus. The Campus Master Plan 2004 also identifies improvements to the existing landscape and hardscape to address current visual and functional weaknesses. The Campus Master Plan 2004 also includes Design Guidelines that set forth a context for ensuring that the design of new buildings contributes to a consistent architectural vocabulary for the campus. The Campus Master Plan 2004 is designed to accommodate a student enrollment of 17,900 (AY) FTES (academic year full time equivalent students), an increase of 2,900 FTES over the approved Master Plan capacity.

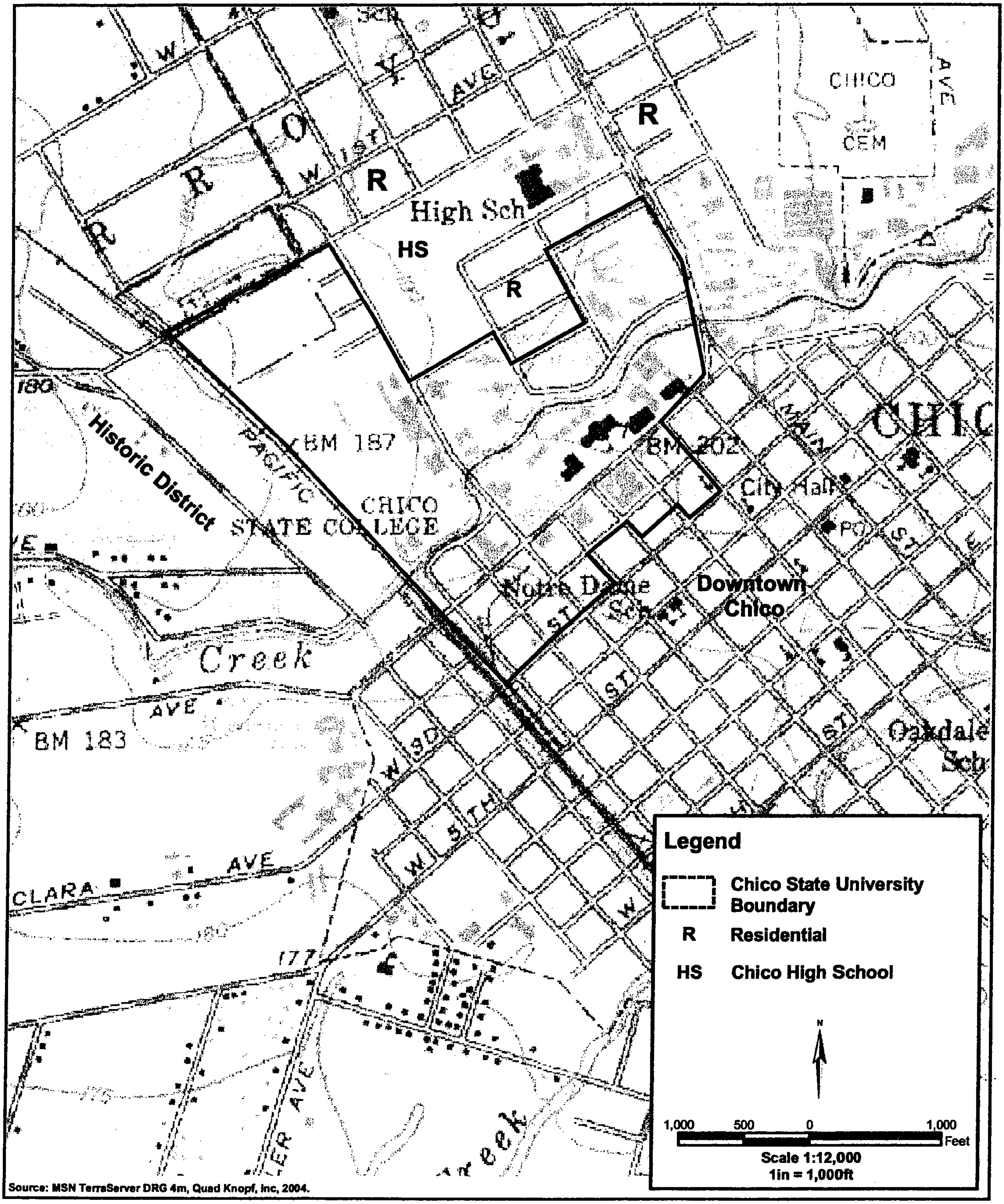
9. Surrounding Land Uses and Setting:

The CSU Chico campus lies within the City of Chico, located in the northern portion of California's Central Valley, six miles east of the Sacramento River. The main campus is located north and west of the City of Chico's downtown. Surrounding land uses include several residential neighborhoods and Chico High School to the north, mixed residential and railroad industrial area to the south and southwest, downtown Chico to the southeast and the Historic District of Chico to the southwest (see Figure 6). The general topography of the area including and surrounding the campus is relatively flat on both sides of Big Chico Creek, which bisects the campus, with a predominantly southwesterly slope. Big Chico Creek also serves as the backbone of Bidwell Park, a large natural and recreational area that stretches for eleven miles along the creek immediately east of the campus. The elevation of the City of Chico is approximately 195 feet above mean sea level. Figure 7 depicts an aerial view of the main campus.

The ATRC is an 800 acre farm facility located two miles south of the main campus and is surrounded by agricultural land (see Figure 8).

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

The Trustees of California State University will act as lead agency. No other public agencies whose discretionary approval for the adoption of the Campus Master Plan 2004 is required have been identified. As provided by California Government Code Section 53094, because the lead agency is the Chancellor's Office of the California State University, City of Chico approval is not necessary for the Campus Master Plan 2004. In the event that implementation of the plan results in road closures and abandonment of City roads, City of Chico approval will be required. The proposed project will need to connect to the City sanitary sewer and storm drainage systems and this will also require approval of the City. Implementation of projects in the Campus Master Plan 2004 may also result in the need for permits from the Regional Water Quality Control Board.

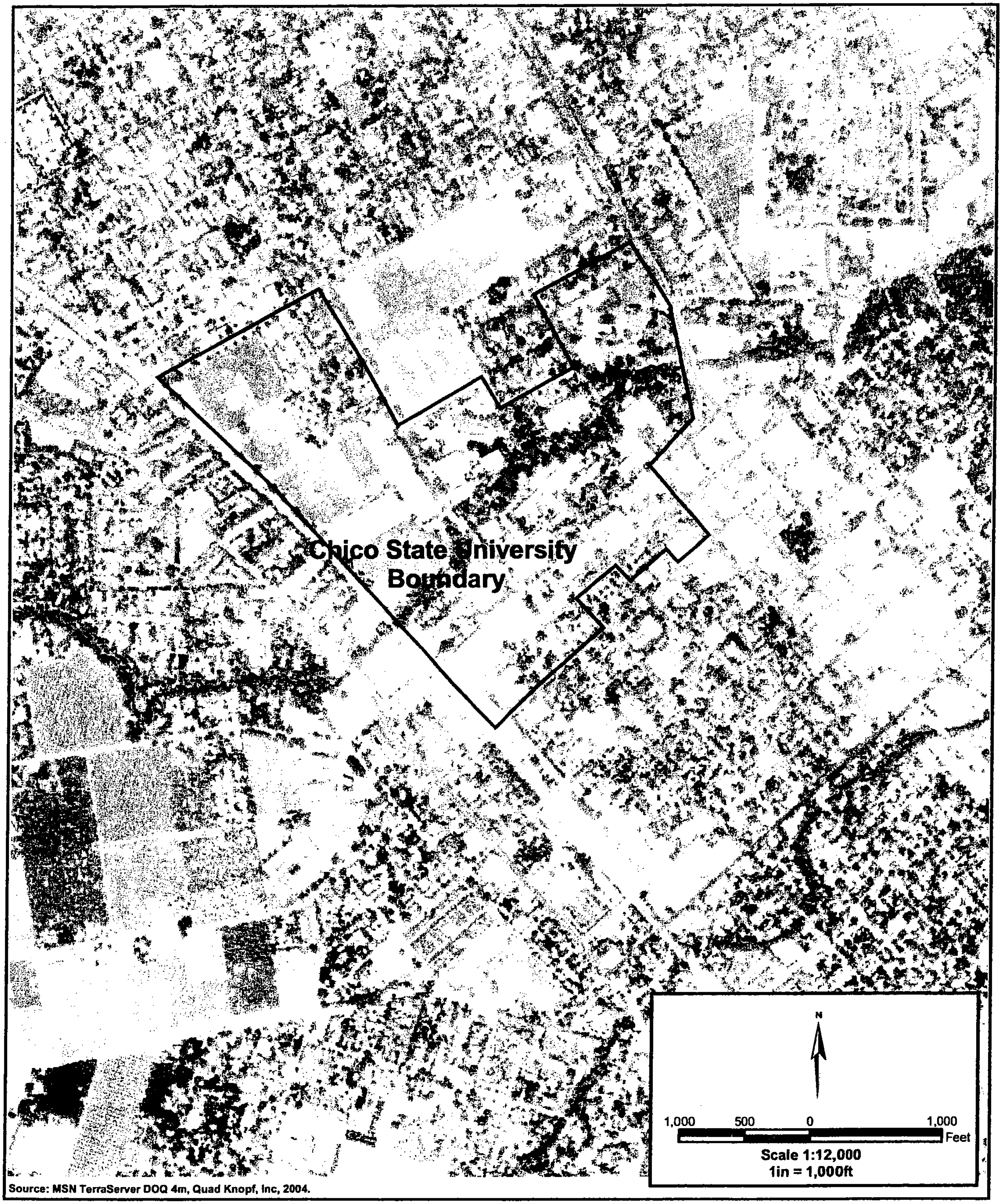


Source: MSN TerraServer DRG 4m, Quad Knopf, Inc, 2004.

Quad Knopf

SURROUNDING LAND USE

Figure 6



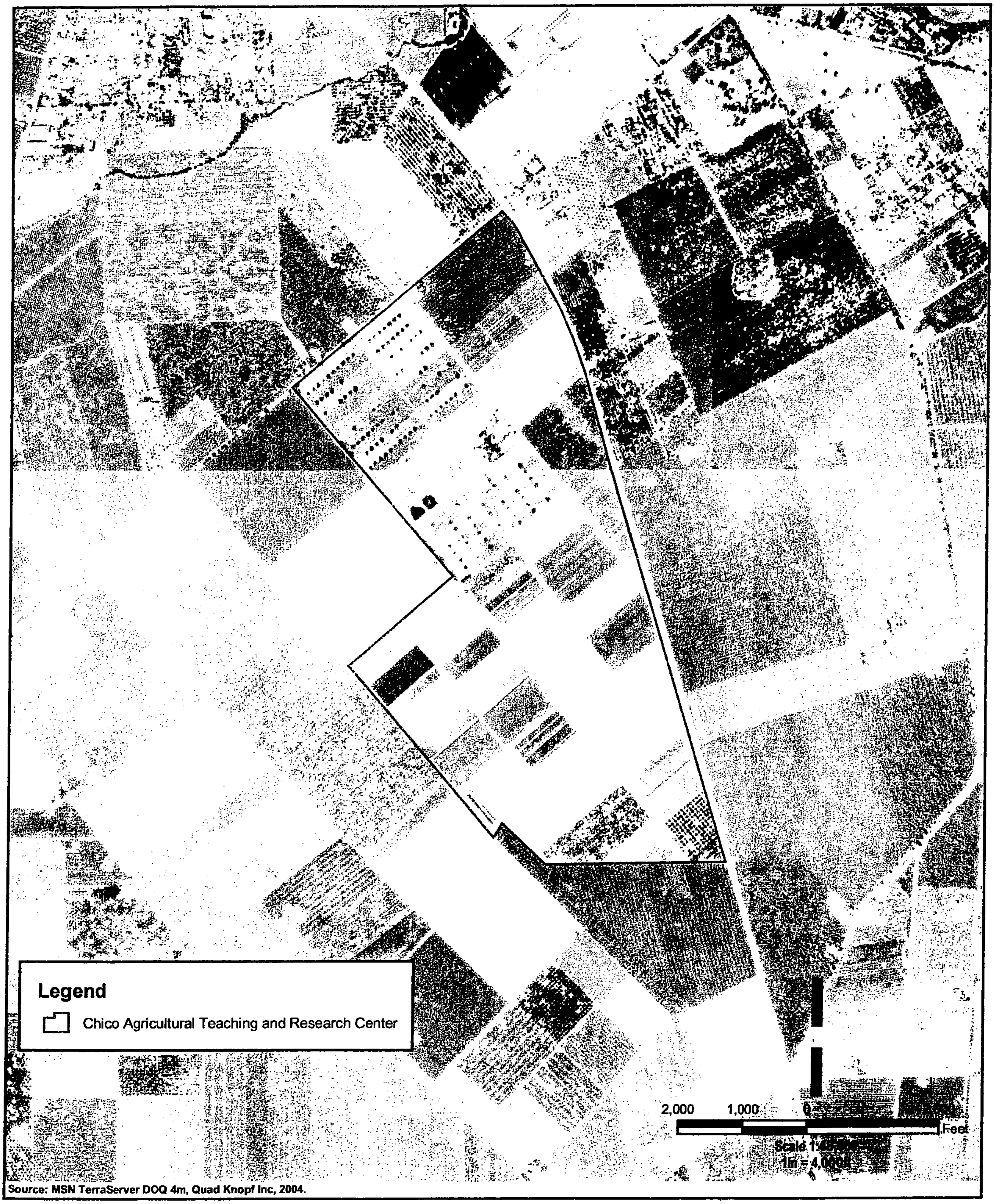
Source: MSN TerraServer DOQ 4m, Quad Knopf, Inc, 2004.

Quad Knopf

AERIAL PHOTO

Figure 7

Job No.: 03496



Source: MSN TerraServer DOQ 4m, Quad Knopf Inc, 2004.

Quad Knopf

AERIAL PHOTO OF ATRC

Figure 8

Job No 03436

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The Initial Study identified a number of potentially significant environmental impacts. The various environmental issue areas are discussed in detail in the Checklist.

DETERMINATION:

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

____ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

_X_ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

____ I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards. and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a potentially significant impact or potentially significant unless mitigated. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

____ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

9/8/04
Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?			x	
b) Substantially degrade the existing visual character or quality of the site and its surroundings?	x			
c) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	x			
II. AGRICULTURAL RESOURCES. *Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			x	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			x	
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?			x	
III. AIR QUALITY. *Would the proposal:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	x			
b) Violate any air quality standards or contribute substantially to an	x			

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
existing or projected air quality violation?				
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	x			
d) Expose sensitive receptors to substantial pollutant concentrations?	x			
e) Create objectionable odors affecting a substantial number of people?	x			
IV. BIOLOGICAL RESOURCES. ***Would the project:***				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	x			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	x			
c) Have a substantial adverse effect on federally protected wetlands as	x			

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
defined by Section 404 or the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	x			
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				x
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				x

V. CULTURAL RESOURCES. *Would the project:*

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	x			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	x			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	x			

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?	x			
VI. GEOLOGY AND SOILS. ***Would the project:***				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a know fault? Refer to Division of Mines and Geology Special Publication 42.	x			
ii) Strong seismic ground shaking?	x			
iii) Seismic-related ground failure, including liquefaction?	x			
iv) Landslides?	x			
b) Result in substantial soil erosion or the loss of topsoil?	x			
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	x			
d) Be located on expansive soil, as defined in Table 18-1-B of the	x			

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Uniform Building Code (1994), creating substantial risks to life or property?				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	x			
VII. HAZARDS AND HAZARDOUS MATERIALS. ***Would the project:***				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	x			
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	x			
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	x			
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	x			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a				x

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
safety hazard for people residing or working in the project area?				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				x
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	x			
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildands are adjacent to urbanized areas or where residences are intermixed with wildlands?			x	
VIII. HYDROLOGY AND WATER QUALITY. ***Would the project:***				
a) Violate any water quality standards or waste discharge requirements?	x			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	x			
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a	x			

Issues :	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	x			
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	x			
f) Otherwise substantially degrade water quality?	x			
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			x	
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			x	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			x	
j) Inundation by seiche, tsunami, or mudflow?				x

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. LAND USE AND PLANNING. ***Would the project:***				
a) Physically divide an established community?	x			
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	x			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?			x	
X. MINERAL RESOURCES. ***Would the project:***				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				x
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				x
XI. NOISE. ***Would the project result in:***				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	x			
b) Exposure of persons to or generation of excessive	x			

Issues :	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
groundborne vibration or groundborne noise levels?				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	x			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	x			
e) For a project located within an airport land use plane or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				x
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				x
XII. POPULATION AND HOUSING. ***Would the project:***				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	x			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	x			

Issues :	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	x			
XIII. PUBLIC SERVICES. ***Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:***				
a) Fire protection?	x			
b) Police protection?	x			
c) Schools?	x			
d) Parks?	x			
e) Other public facilities?	x			
XIV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			x	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	x			
XV. TRAFFIC/CIRCULATION. ***Would the project:***				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the	x			

Issues :	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	x			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				x
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	x			
e) Result in inadequate emergency access?	x			
f) Result in inadequate parking capacity?	x			
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?			x	
XVI. UTILITIES AND SERVICE SYSTEMS. *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	x			
b) Require or result in the construction of new water or wastewater treatment facilities, the construction of which could	x			

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
cause significant environmental effects?				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	x			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	x			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	x			
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	x			
g) Comply with federal, state, and local statutes and regulations related to solid waste?	x			
XVII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal	x			

Issues :	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory?				
b) Does the project have impacts that are individually limited, but cumulatively considerable? (cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	x			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	x			

I. AESTHETICS

I a

The CSU Chico campus is located on land that is flat, and has been developed with a variety of multi-story buildings, parking areas, roadways and walkways. The campus is surrounded by developed areas. The Agriculture Research and Teaching Center is located within an agricultural area and is an agricultural use. There are no designated scenic vistas in the vicinity of the campus or the ATRC. This impact is less than significant.

I b

The CSU Chico campus is considered one of the most beautiful and pleasant campuses in the CSU system. The impact of the proposed campus changes on the visual environment is a potentially significant impact. A number of buildings are proposed for demolition and replacement. Some of the one story buildings proposed for demolition are being replaced with multi-story structures. Two parking structures are also proposed as part of the Campus Master

Plan 2004. All of these changes will alter the visual character of the campus. The Campus Master Plan 2004 includes visual analysis graphics as well as a discussion of the important architectural themes on the campus. The buildings that are being replaced are not representative of the campus theme and are outdated, and in some cases unsightly. The CSU Chico campus has been developed over the years of its existence with a variety of non-native landscaping. There are a large number of elegant specimen trees. The Campus Master Plan 2004 includes a Landscape Improvement Plan. Landscape design and planning principles are specified and several landscape improvement areas are described. The Campus Master Plan 2004 contains a discussion of the campus visual environment as well as design guidelines for new facilities. An aesthetics and visual analysis should be undertaken to identify if there are any provisions in the Campus Master Plan 2004 that could result in degrading the visual character of the site and its surroundings. The changes to the ATRC facility are anticipated to improve the visual quality of the site by replacing older buildings with new structures and landscaping. The improvement concepts call for selected landscaping improvements to visually strengthen the entry drive experience, to screen unattractive areas, to shade parking facilities and to otherwise enhance the appearance of the facility. The beautification concept plan also calls for the standardization of corral fencing to help visually unify the ATRC facility. The details of the beautification plan are not yet specified in the Campus Master Plan 2004. This impact is potentially significant.

I c

The proposed project includes a number of new buildings, larger buildings, and other facilities that will increase the ambient nighttime lighting and may also increase glare including a conference center and events center at the ATRC. Glare related impacts may result from headlights and certain types of building materials. The Campus Master Plan 2004 includes guidelines for lighting that states that all primary and critical pedestrian routes need to be illuminated and lighting levels need to correspond to minimum standards and be designed to illuminate active areas. The guidelines also state that fixture selection and light placement will be required to minimize light pollution and shall be shielded to reduce glare into buildings and neighboring areas. The impact on residential uses around the campus and cumulative impacts due to the increase in ambient nighttime lighting on the night sky are potentially significant.

II. AGRICULTURAL RESOURCES

II a-c

The main campus, including the area surrounding the campus, consists primarily of developed urban uses. There are no agricultural uses currently on or in the vicinity of the project site, and no portion of the campus is subject to a Williamson Act land contract. The Campus Master Plan 2004 includes improvements to the Agricultural Teaching and Resource Center (ATRC) that is located approximately 2 miles south of the main campus. The ATRC consists of approximately 800 acres and contains extensive acreage devoted to field, tree crops, pasture and a core working "farm" area with a comprehensive array of plant and animal facilities, including those dedicated to support farm equipment and maintenance, storage, processing, propagation, teaching, training and research activities. The ATRC serves a variety of functions, including hosting agricultural events of interest to the larger Northern California agricultural community, serving as an educational site to K-12 schools desiring to expose students to the fields of agriculture and serving as a site for various third party research. As the ATRC has grown over a period of years from its founding in 1960, a number of the existing facilities have reached their useful life span, are inadequate in today's agricultural environment, are inadequate for today's instructional requirements, and are in a location that is less than optimal from a functional perspective. The improvements specified for the main campus buildings will have no impact on any agricultural resources or operations, and it is anticipated that the improvements and additions to the ATRC will result in a beneficial impact on agricultural resources. This impact is considered less than significant.

III. AIR QUALITY

III a-c

The proposed project is located in the Sacramento Valley Air Basin (SVAB), which extends from Sacramento and Solano Counties on the south to Shasta County on the north. The air basin is generally situated in the northern portion of the Central Valley and is bounded on the west by the Coastal Range, on the north and east by the Cascade-Sierra Nevada and Siskiyou foothills and mountains, and on the south by the San Joaquin Valley Air Basin. The Northern Sacramento Valley Air Basin is a natural closed basin, often with poor air circulation and high atmospheric stability. The area is subject to frequent temperature inversions preventing dispersion of pollutants.

There are air quality monitoring stations for Butte County located in Chico (ozone, carbon monoxide [CO] and particulate matter less than 10 microns in diameter [PM10]). Air quality standards are established by both the federal and State governments. State standards, set through the California Air Resources Board, are generally more stringent than federal standards. The attainment status of Butte County for criteria pollutants under State standards as reported by the Butte County Air Quality Management District (BCAQMD) is nonattainment transitional for ozone, attainment for CO, and nonattainment for PM10. The attainment status for criteria pollutants under federal standards is nonattainment for ozone, unclassified/attainment for CO, and unclassified for PM10.

The BCAQMD regulates air quality through its permit authority and through its planning and review activities over most types of stationary emission sources. The BCAQMD is responsible for implementing emissions standards and other requirements of federal and State laws.

The BCAQMD publishes the Indirect Source Review Guidelines (1997). According to this document, throughout the Northern Sacramento Valley Air Basin (NSVAB), the major contributor to air pollution is the motor vehicle. In recognition of this contribution, the State Legislature adopted the California Clean Air Act (CCAA). This legislation requires local air districts to develop measures to reduce emissions from mobile sources. These measures encourage a cooperative effort between employers, developers and government to minimize emissions of mobile sources associated with development. The Indirect Source Review Guidelines seek to reduce emissions resulting from vehicular activity. This includes measures to reduce dependency on the automobile for mobility and to mitigate the air quality impacts of new development. The mitigation measures in these guidelines encourage walking, bicycling, transit use and other alternative travel modes by making them more convenient and safe to use. The air districts in the Northern Sacramento Valley Air Basin jointly prepared and adopted the 1997 Air Quality Attainment Plan.

It is anticipated that additional vehicle trips will be generated due to implementation of the Campus Master Plan 2004. Student enrollment is projected to increase from 14,000 FTES (full time equivalent students) physical capacity to 15,800 FTES that equals an academic year capacity of 17,900 FTES, an increase of 2,900 over the current capacity. This equals a head count of 20,000 individual students. Also to be included are 1,500 to 2,000 faculty and staff. The proposed parking structures and improvements specified for the ATRC will attract vehicle trips. Carbon monoxide impacts related to new trip generation and an analysis of whether these trips will result in exceeding state and/or federal standards needs to be undertaken. There is a potential for an increase in regional emissions due to increased vehicle trips. Additionally, air quality impacts associated with construction activities will need to be evaluated. Energy efficiency programs/projects and bicycle/pedestrian programs outlined in the Campus Master Plan 2004 may affect the type and amount of air quality impacts. The impacts are considered potentially significant.

III d, e

The CSU Chico Campus is located in an urban area, and residents on campus are exposed to pollutant concentrations to the same extent as those living and working in the general area. The proposed Campus Master Plan 2004 would not result in exposure levels in excess of those experienced in the community in general.

The adoption and implementation of the Campus Master Plan 2004 for the main campus will not generate objectionable odors. The buildings that may be constructed at some point in the future are academic buildings and facilities and will not have objectionable odors associated with them. The improvements to the ATRC may result in objectionable odors due to the replacement dairy and other expanded and upgraded animal facilities. These impacts are potentially significant.

IV. BIOLOGICAL RESOURCES

IV a-d

The proposed project is located on a site that is already substantially covered with structures and pavement. Big Chico Creek flows through the center of the campus and the creek, and its related riparian habitat occupies approximately 12 acres of land. CSU Chico hosts the Bidwell Environmental Institute, which manages several land preserves for the primary purposes of protection, enhancement, research, and education, including the Big Chico Creek Ecological Reserve. The Campus Master Plan 2004 provisions support the conservation of natural resources and the protection of Big Chico Creek. Big Chico Creek has been designated by the City of Chico as a Resource Conservation Area (RCA), and the City of Chico General Plan requires a 100-foot protective buffer/non-development set-back zone from the top of creek banks to ensure open space corridors. These corridors would permit low-impact recreational use activities such as bike and pedestrian pathways. Much of this habitat has been altered by the invasion of non-native species, a situation that is being slowly addressed through a restoration project of non-native species removal and replacement with appropriate native plantings. The creek connects the campus with the Sierra foothills to the east, with the Sacramento River and ultimately with the Pacific Ocean to the southwest. Among the better known species that may directly or indirectly depend upon the health of Big Chico Creek are the bald eagle and the winter run Chinook salmon. The adoption of the Campus Master Plan 2004 will not disturb Big Chico Creek or its riparian habitat; however, some low impact activity may occur within the 100 foot buffer zone.

The campus contains extensive landscaping and many non-native trees and shrubs. There are also several street trees within the public right-of-way, most notably two large black walnut trees along Ivy Street. It is not known how implementation of the Campus Master Plan 2004 may affect these resources. Additionally, a current records search of the California Department of Fish & Game's (CDFG) California Natural Diversity Data Base must be undertaken. The biological resources impacts, including impacts to Big Chico Creek, are potentially significant.

I-V e, f

The project would not conflict with any University policies or ordinances protecting biological resources, nor would it conflict with the provisions of any local, regional, or state habitat conservation plan. There will be no impact as a result of the adoption of the Campus Master Plan 2004 with regard to conflicts with plans, policies or ordinances.

V. CULTURAL RESOURCES

V a-d

The Campus Master Plan 2004 has identified a number of potential archeological issues and impacts. The Campus Master Plan 2004 identifies a number of proposed activities that have the potential to affect both prehistoric and historic period cultural resources. The California State University, Chico Campus is situated in an area that has witnessed thousands of years of human occupation. The native Konkow people, specifically the Mechoopda Tribe, were known to have lived in the general vicinity of the campus during the prehistoric period. With the arrival of European settlers, and the establishment of John Bidwell's Ranchero, historic period activities also occurred within the confines of the present day campus. Subsequent to the development of the Chico Normal School, a number of buildings and structures were also erected, many of which may require evaluation as historic period structures (any building or structure greater than 45 years in age). The California State University Chico Campus thus has a rich history of human settlement and activities. When physical evidence remains, these previous human imprints become cultural resources that will need to be evaluated prior to any finalization of plans.

Specific archeological research has already been conducted for portions of the CSU Chico Campus. Data concerning these previous investigations are housed at the Northeast California Information Center of the California Historical Resources Information System, located within the CSU Chico facilities. For those portions of the campus that have not been previously investigated by archeologists, including the ATRC facility, a field reconnaissance of the proposed project area would need to be conducted. The field reconnaissance will identify any cultural resources within the proposed project area and then record the resources to current California Office of Historic Preservation standards. The resources may be as varied as prehistoric period Native American remains (interments), to historic period buildings that were constructed prior to 1959. The implementation of the Campus Master Plan 2004 may require relocation of historic structures. This impact is potentially significant.

VI. GEOLOGY AND SOILS

VI a-d

A Geotechnical Engineering Investigation was recently prepared for the approved Student Services Center (Krazan & Associates, Inc., August 2003) on the CSU Chico campus. Information in this section is excerpted from that study.

The project site is located in the Sacramento Valley, within the northern portion of the Great Valley Geomorphic Province of California. Formation of the valley occurred by tectonic shifting of the Sierran Block; the western side dropping to form the valley and the eastern side being uplifted to form the Sierra Nevada. The valley has been filled with a relatively thick deposit of heterogeneous marine and lacustrine sediments, and surficial alluvial materials derived from erosion of the adjacent Sierra Nevada to the east and the Coast Ranges to the west. The sedimentary rocks are mainly Cretaceous. The depth of the sediments varies from a thin veneer at the edges of the valley to depths in excess of 50,000 feet.

The Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California (Helley and Harwood, 1985: 1:62,500) indicates that the near-surface deposits in the vicinity of the campus consist of the upper member of the Modesto Formation. These deposits generally consist of fine-grained sand, silt and clay derived from the same sources of modern alluvium. The thickness of the basin deposits ranges from a few feet along the valley perimeter to as much as 200 feet in the center of the valley.

Numerous small to moderate earthquakes have affected the area of the campus within historic time. Based on the proximity of several dominant active faults and seismogenic structures, as well as the historic seismic record, the campus is considered subject to relatively low seismicity.

The seismic hazard most likely to impact the site is groundshaking due to a large earthquake on one of the major active regional faults. The Foothills Fault Zone is the nearest active fault to the site and is located approximately 3 miles east of the project site. The Great Valley, Battle Creek, and Bartlett Springs Fault Zones are located approximately 24, 49, and 59 miles from the site, respectively. Because of the proximity to the campus and the maximum probable events for these faults, it appears that a maximum probable event along these fault zones could produce a peak horizontal acceleration of approximately 0.16g (DBE-design basis earthquake) and 0.19 (UBE-upper bound earthquake) at the project site.

The purpose of the Alquist-Priolo Geologic Hazards Zones Act, as provided in DMG Special Publication 42 (SP 42), is to "prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." Review of current Fault-Rupture Hazard Zone mapping indicates that the campus is not within a Fault-Rupture Hazard Zone. The nearest mapped Fault-Rupture Hazard Zones are located approximately 70 miles from the site and are associated with the Dunnigan Hills Fault Zone.

The California Seismic Hazard Mapping Act (1990) requires that the State Geologist delineate various seismic hazards zones on Seismic Hazards Zones Maps. The maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. The campus is not included on any of the Seismic Hazard Zone Maps released to date. It is not known whether the campus will be within a Seismic Hazard Zone on future maps.

The potential for erosion or expansive soils on the areas that will be affected by the improvements specified in the Campus Master Plan 2004 is not known at this time. These impacts are potentially significant.

VI e

The project is the adoption of an updated Master Plan for the CSU Chico campus. The main campus is served by a full range of urban services, including sewer service. Improvements to the main campus will not involve the installation or use of onsite wastewater disposal systems. The Campus Master Plan 2004 also specifies a number of improvements and upgrades at the ATRC that could impact the existing septic system. This impact is potentially significant.

VII. HAZARDS AND HAZARDOUS MATERIALS

VII a-c

The adoption of the Campus Master Plan 2004 will not directly result in the use or disposal of any hazardous materials. The adoption of the Plan will not result in any hazardous emissions or hazardous materials or waste. Construction, landscaping and use of facilities that may result through implementation of the Campus Master Plan 2004 could possibly require relatively small quantities of hazardous materials, consisting primarily of landscaping chemicals and cleaning agents. Hazardous materials that could be used for landscaping purposes include pesticides, some fertilizers, and herbicides. These chemicals are regulated by federal and state agencies, and would be stored and handled per regulatory requirements.

Construction activities will involve the use of petroleum-based fuels for maintenance and construction equipment, which would be transported to the site periodically by vehicle and would be present on the site for short periods of time. None of these materials would be stored on the site. All hazardous materials would be used, stored and transported according to applicable federal, state and University requirements. The project is not included on any federal, state, or local list of hazardous materials sites, and would not create a significant hazard to the public or the environment. Therefore, impacts associated with the transport, use, or disposal of hazardous materials, the release of hazardous materials into the environment, and the possibility of hazardous emissions into the environment near existing or proposed schools is considered less than significant.

Improvements at the ATRC facility include a new pesticide seed and fertilizer building. Currently, the ATRC lacks a pesticide storage facility that meets current Safe Drinking Water and Toxic Enforcement Act (Proposition 65) standards. The Campus Master Plan 2004 calls for replacement of the existing pesticide building, relocation to a more suitable site, and consolidation of the seed and fertilizer storage into the same facility. These improvements are designed to bring the facility into compliance with current regulations and best practices related to on-farm chemical use. These improvements will need to be studied in more detail in order to ensure that they do not result in any potential impacts. This component of the Campus Master Plan 2004 is a potentially significant impact.

VII d

It is not known at this time whether the campus is included in any list of hazardous materials sites pursuant to Government Code Section 65962.5. This impact is potentially significant.

VII e, f

The campus is not within two miles of a public airport or public use airport, nor is it within the vicinity of a private airstrip.

VII g

The project consists of the adoption of an updated Master Plan for the CSU Chico campus. Alternative routes for emergency access or evacuation exist in the vicinity of the campus and the adoption of the Plan would not create an obstacle to any evacuation plan or emergency vehicle access. The Plan proposes closure of three street segments in the southern portion of the campus. These changes are not anticipated to interfere with any emergency response plan or emergency evacuation plan; however, this issue should be further studied. This impact is potentially significant.

VII h

The project site is a developed University campus. Wildlands are not present in the vicinity of the site. Existing and proposed landscaped areas on the main campus are irrigated and urban in nature. The landscaping plan for the project would primarily include fast growing, low water, low maintenance plants and trees. The ATRC facility is located on the outskirts of the City and is surrounded by irrigated farmland. The adoption of the Campus Master Plan 2004 would not expose people or structures to significant loss, injury or death involving wildland fires since the area is not in proximity to wildlands. Therefore, because the campus is in an urbanized area with fire hydrants and an urban fire protection system, and the ATRC is located adjacent to irrigated farmland, any project impact associated with wildland fires would be less than significant.

VIII. HYDROLOGY AND WATER QUALITY

VIII a-f

The adoption of the Campus Master Plan 2004 will not directly result in impacts to hydrology, water quality, drainage patterns, or runoff; however, construction that may occur as a result of implementation of the Campus Master Plan 2004 could have impacts on hydrology and water quality, particularly since the campus is located in proximity to Big Chico Creek. Additionally, the expansion and improvements to the ATRC could result in water quality impacts. Existing swine, beef, sheep, and dairy units are all proposed for upgrade and/or expansion. The dairy unit is proposed to be relocated. The waste management system is proposed to be upgraded in order to minimize impacts to water quality; however, the potential impacts are not known at this time. These impacts are potentially significant.

VIII g-i

The closest water source to the project site is Big Chico Creek, which runs through the main campus. Section 3.9.4 of the Master Plan EIR reports that flood flows in the City of Chico are controlled under a flood management program. Water is diverted around the City, fully protecting the campus area. Since floodwater has been previously diverted in order to protect the general area, the adoption of the Campus Master Plan 2004 does not have any potential to alter the course or flow of floodwater. The City of Chico General Plan (1999) confirms that almost all land in the Planning Area subject to flooding hazards is beyond the boundary of the urban development shown on the General Plan Land Use Diagram. The ATRC facility is not located in an area subject to flooding. This impact is less than significant.

VIII j

There is no potential for seiche or tsunami due to the lack of a significant water body near the project site. The site has less than 1 percent slope, thus eliminating the possibility for a mudflow.

IX. LAND USE AND PLANNING

IX a, b

The proposed project is located on the CSU Chico campus, and is an update of an existing Campus Master Plan. There are a number of new facilities proposed as well the replacement of single story buildings with multi-story structures. The Campus Master Plan 2004 is designed to accommodate an increase in student enrollment from the current 14,000 full time equivalent students (FTES) physical capacity to 15,800 FTES which equals an academic year capacity of 17,900 FTES, an increase of 2,900 over the current capacity. This equals a head count of 20,000 individual students. Also to be included are 1,500 to 2,000 faculty and staff. Although this growth target represents only an 1,800 FTES increase over the current physical capacity, the campus is planning a significant number of new student support type facilities such as student housing, recreation, child care and parking to address unmet current demand as well as the needs of the additional student population. The Campus Master Plan 2004 is also proposing a number of improvements and new facilities at the ATRC facility including a conference center and an events center. The impact of these changes on surrounding land use, affordable housing, and growth inducement is not known at this time. These impacts are potentially significant.

IX c

The City of Chico has designated Big Chico Creek as a Resource Conservation Area (RCA) and created the Big Chico Creek Ecological Preserve that is managed by the Bidwell Environmental Institute. The Ecological Preserve encompasses a total of 3,950 acres. Approximately 12 acres are located on the campus. The City of Chico General Plan calls for 100 foot protective buffer/non-development set-back zones from the top of creek banks to insure space for open space corridors. These corridors would permit low-impact recreational use activities such as bike and pedestrian pathways in these corridors. The proposed Campus Master Plan 2004 is designed to be consistent with the City of Chico General Plan and policies for the Resource Conservation Area; therefore, this impact is less than significant.

X. MINERAL RESOURCES

X a, b

No known mineral resources exist below the surface. Extraction of minerals in this urbanized setting, if any did exist, would result in significant land use conflicts. No impact has been identified.

XI. NOISE

XI a-d

The adoption of the Campus Master Plan 2004 will not directly result in noise impacts; however, construction that may occur as a result of implementation of the Campus Master Plan 2004 could have impacts on noise, both during and after construction. The impacts of construction noise, increases in traffic noise due to the project, and noise levels due to new on-site activities have not been evaluated. Potential on-site activity noise associated with the Campus Master Plan 2004 include parking lot noise levels, the Wildcat Activity Center, two new parking structures, and the ATRC Events Center. This impact is potentially significant.

XI e, f

The site is not within two miles of a public airport or public use airport, nor is it in proximity to a private airstrip.

XII. POPULATION AND HOUSING

XII a-c

The update of the Campus Master Plan is intended to accommodate existing and planned enrollment and campus activities due to the substandard and inadequate condition of some existing facilities as well as an anticipated increase in enrollment. The Plan recommends acquisition of the College Park and Rio Chico areas that contain a number of residential homes. The Rio Chico homes with historic value would need to be relocated as a result of implementation of the Campus Master Plan 2004. The campus has significant unmet demands for on-campus housing. An additional 1,298 bed spaces are proposed, along with new food service facilities. The Campus Master Plan 2004 includes additional recreational facilities that may be used by the community-at-large. There may be impacts that would occur with regard to existing population projections, growth within the campus community, and existing housing conditions. This impact is potentially significant.

XIII. PUBLIC SERVICES

XIII a-e

The proposed project is located on the CSU Chico campus, and is an update of an existing Campus Master Plan. There are a number of new facilities proposed as well the replacement of single story buildings with multi-story structures on both the main campus and at the ATRC facility. The Campus Master Plan 2004 is designed to accommodate an increase in student enrollment from the current 14,000 full time equivalent students (FTES) physical capacity to 15,800 FTES which equals an academic year capacity of 17,900 FTES, an increase of 2,900 over the current capacity. This equals a head count of 20,000 individual students. Also to be included are 1,500 to 2,000 faculty and staff. Although this growth target represents only an 1,800 FTES increase over the current physical capacity, the total additional growth may impact demand for additional public services, including law enforcement, fire protection, sewer and water service, and solid waste disposal. This impact is potentially significant.

XIV. RECREATION

XIV a

There are extremely limited opportunities for both indoor and outdoor student recreation at CSU Chico. Currently, students must utilize indoor court and outdoor Physical Education field facilities during limited times when these facilities are not being used for academic programs. The CSU Chico Campus Master Plan 2004 proposes the construction of a student recreation center and the long-term acquisition of nearby properties to address the lack of accessible recreational resources available to CSU Chico students. The proposed Campus Master Plan 2004 is designed to accommodate the anticipated increase in student population as well as address current unmet needs. The Campus Master Plan 2004 includes a number of new recreational facilities designed to serve both the student population and the community-at-large. The Plan proposes to acquire the Rio Chico area and construct a physical education and aquatic center facility. The site lies adjacent to the planned Wildcat Activity Center and is connected by pedestrian bridge directly to the campus physical educational fields and facilities. There has been considerable interest from the Chico Unified School District and the greater Chico community for a swimming pool that could serve both the instructional and recreational needs of these groups. In addition to the pool itself, the pool facility would need to have bathrooms, showers, locker rooms and other related facilities. The CSU Chico-owned surface parking lot to the west of the site would also be part of this development that would include 46,200 ASF/71,100 GSF, in the following configuration:

- A physical education facility that would accommodate additional basketball, multipurpose and specialized indoor courts, aerobics, dance and fitness rooms as well as showers, small classroom and office spaces

- A recreationally oriented aquatic center with pool and outdoor areas suitable for gatherings. The aquatic center would include a 25-50 meter pool (5-7 lanes) and associated facilities totaling approximately 15,000 square feet

- Open space plaza at the southeast corner of First Street and Cherry Street

In addition to the Rio Chico Physical Education and Aquatic Center Facility, the Plan calls for additional outdoor physical education facilities. The outdoor physical education space needed for playfields and other facilities has fallen below the State standard allotment of 34 acres for a CSU campus of an enrollment of 15,000. Additional outdoor field space will be lost with the future expansion of the Central Plant facility that lies at the south end of the athletic field area. The Campus Master Plan 2004 proposes acquisition of approximately five acres in proximity to the existing physical education facilities. The most appropriate sites lie west of the railroad tracks along Highway 32. A CSU Chico administration and faculty task force has projected that facilities totaling 38 acres consisting of additional athletic and recreational-related open space are needed beyond the standard State allotment discussed above. This Master Plan does not specify where these facilities would be located; however, some of the land to be purchased in the Highway 32 corridor or other nearby locations.

The Campus Master Plan 2004 also includes the Wildcat Activity Center. This student recreation center concept is envisioned as a two-level 124,568 to 133,400 square foot indoor recreation center to be placed on University-owned sites, bordered by First Street, Cherry Street, Second Street and the railroad right-of-way on the north, east, south and west, respectively. This location is close to the existing CSUS parking structure and to the Rio Chico site, programmed for future acquisition for development of physical education facilities and a recreational Aquatic Center. The Campus Master Plan 2004 contains adequate additional recreation facilities to accommodate the projected student population. This impact is less than significant.

XIV b

As discussed under Impact XIVa above, the proposed Campus Master Plan 2004 contains a number of new and expanded recreational facilities. Construction of these facilities as a result of implementation of the Campus Master Plan 2004 could result in adverse physical effects on the environment. This is a potentially significant impact.

XV. TRAFFIC/CIRCULATION

XV a, b, d, e

The CSU Chico campus, with the principal exception of Warner Street, exists as an island of campus land accessible from the periphery by the City of Chico public street grid. Major access streets include West Second Street along the southern portion of the campus, and the Esplanade running north and south that provides major access from the east. Highway 32 acts as a major north/south route serving the western portions of the campus, and West Sacramento Avenue is used to access northern parts of the campus and as a link to Warner Street, the other major north/south street providing access to the campus. The Plan anticipates minor effects upon the general vehicular circulation system that serves the campus. The Campus Master Plan 2004 identifies the closure of three street segments in the southern part of the campus that would enhance the pedestrian nature of the campus. These include the full or partial closure of First Street between Ivy Street and Orange or Cedar Streets, creating a westward extension of the First Street pedestrian mall. The second proposed street segment closure would occur on Chestnut Street between Second and Third Streets from the north side of the alley to Second Street to allow for the development of a new parking structure. Third, Rio Chico Way would most likely be eliminated as part of the proposed Rio Chico Academic and Aquatic Center projects identified in the Campus Master Plan 2004.

In addition to the changes proposed for the main campus, the Campus Master Plan 2004 includes a new conference center and events center at the ATRC facility. The proposed changes to the campus identified in the Campus Master Plan 2004 could result in impacts to traffic and circulation. Any abandonment or street closures of City streets will require approval by the Chico City Council. This is a potentially significant impact.

XV c

There are no airport facilities on the CSU Chico campus. Because the project site is not located near any aviation facilities, it is not anticipated that development of the proposed project would result in a change in air traffic patterns that would result in any safety risks. Therefore, no impact would occur.

XV f

Currently there are approximately 2,195 non-motorcycle parking spaces primarily distributed at the periphery of the CSU Chico campus, with the largest two concentrations lying north of the campus in the vicinity of the College Park neighborhood (with over 700 spaces) and in the southwest margin of the campus (with over 900 spaces). Many of the northern spaces are associated with students who stay in CSUS-sponsored campus housing who do not drive to school but use their auto occasionally. In the fall of 2003, Kaku Associates developed a parking needs assessment that found that in addition to the total number of 2,210 on-campus parking spaces (including motorcycle parking), there were at least 305 curbside and off-campus spaces that CSUS users utilize. To accommodate the future campus enrollment target of 15,800 FTES, a total of 3,220 spaces would be needed. Approximately 420 spaces will be lost as a result of the Campus Master Plan 2004 projects and as a result of relinquishing the leased parking facility at West Sacramento Avenue and Warner Street. An increase of 1,430 parking spaces will be needed to serve the future demand for the campus. Addressing the need for parking will involve the following strategies:

- Acquisition/leasing of additional land for parking facilities
- Intensification of parking through the development of parking structures
- Alternative transportation strategies that reduce the need for campus parking

The Campus Master Plan 2004 promotes the acquisition of industrial land to the southwest of the campus along the rail line for use as surface parking or other campus use. The Campus Master Plan 2004 includes the development of two parking structures in separate peripheral areas of the campus, each separated from the existing parking structure. These two proposed structures would primarily serve future users in the southeast and north campus areas. The locations explored and incorporated into the Campus Master Plan 2004 include a 4 level structure in the southern portion of the future College Park area of campus, and a 3 level structure along Second Street to be built on campus land. The Campus Master Plan 2004 includes provisions for parking, and a parking study is underway in order to determine a more definitive number of parking spaces that will be needed to serve the anticipated increase in enrollment. After completion of the parking study, it will be possible to further evaluate the impact of the Campus Master Plan 2004. This impact is potentially significant.

XV g

The primary alternative transportation mode for the CSU campus is the bicycle. With implementation of the Campus Master Plan 2004 projects, there will be opportunities to relocate and reconfigure bicycle parking as part of the site development work. Approximately 30 percent of CSU Chico students use bicycles as their primary form of travel to the campus, only slightly fewer than use the automobile (35 percent). The Spring 2000 CSU Chico Bicycle Survey recorded 4,934 bicycle parking places on the CSU Chico campus. The parking spaces are distributed throughout the campus and are generally associated with classroom facilities and other major student destinations like the Library and the Student Union. With implementation of the Campus Master Plan 2004 projects, there will be opportunities to relocate and reconfigure bicycle parking as part of the site development of nearly each proposed project. For example, the First Street "mall" improvements and the Siskiyou II building project will involve the reconfiguration of large numbers of bicycle parking areas. The Wildcat Activity Center, Rio Chico Academic/Aquatic Center projects and the Whitney Hall site student housing projects also represent significant opportunities to create new bike parking facilities and areas. The Campus Master Plan 2004 contains provisions for ensuring adequate bicycle facilities to serve the student population.

In addition to the bicycle facilities, the City of Chico and Butte County have bus programs that allow students and faculty to ride for free due to a program established between the University and these entities. Therefore, the impact on alternative transportation will be less than significant.

XVI. UTILITIES AND SERVICE SYSTEMS

XVI a-g

The increase in student population and new facilities would create new, but relatively minor, demands for communications, power, water, wastewater, storm drainage, and solid waste disposal services. All of these services are currently provided to existing uses on the campus. The Campus Master Plan 2004 includes an infrastructure plan that specifies the upgrades and expansion of the Central Plant that will meet evolving needs. The specific modifications are also designed to achieve cost savings related to maintenance and energy savings. The University has a central boiler-chiller plant that will provide steam and chill water to heat and cool the building. Domestic water is provided to the campus via connection to the California Water Service Company system. Natural gas will be provided via connection to the PG&E system. Telephone and computer connections are provided via connection to the campus telecommunications network. All of these services will be provided through extension of existing systems. All utilities including electrical and telephone lines would be located underground. The Campus Master Plan 2004 contains provisions to upgrade and expand infrastructure for the main campus in order to serve the facility as described in the Campus Master Plan 2004.

Improvements to the ATRC facility include the relocation and expansion of the existing dairy as well as renovation and expansion of other animal facilities. Additionally, the Campus Master Plan 2004 proposes to upgrade the waste management system. The proposed waste management system is intended to place the ATRC in full compliance with clean air and water legislation. The existing agricultural by-product ponds or lagoons will be enlarged and sealed to facilitate greater water handling capacity to prevent ground water contamination, to meet EPA regulations and to more efficiently recycle farm produced nutrients. These changes could result in environmental impacts; therefore, they are considered potentially significant.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

XVII a-c

The proposed project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or disturb paleontological resources or eliminate important examples of the major periods of California history or prehistory through construction of buildings and parking structures. The project may have impacts that are individually limited, but cumulatively considerable. The project may have environmental effects that will cause substantial adverse effects on human beings.

4.0 PERSONS AND SOURCES CONSULTED

Persons Consulted

Greg Francis, Director, Office of Facilities Planning, California State University, Chico

Craig O'Conner, AC Martin Partners, Inc.

Sources Consulted

Butte County Air Quality Management District, *Indirect Source Review Guidelines,* March 1997

California State University, Chico, *Campus Master Plan* (1991)

California State University, Chico, *Campus Master Plan Environmental Impact Report,* 1991, State Clearinghouse # 89030164

California State University, Chico, *Initial Study/Mitigated Negative Declaration, Soccer Stadium Improvements*, September 1999

City of Chico, *General Plan*, 1999

California State University, Chico, *Initial Study/Mitigated Negative Declaration, Student Services Center* (SCH# 2003102041), November 2003.

Krazan & Associates, Inc., *Geotechnical Engineering Investigation*, Proposed Student Services Center, West Second Street and Ivy Street, Chico, California, August 2003

5.0 LIST OF PREPARERS

Quad Knopf, Inc.

Eugene E. Smith, AICP

Roberta MacGlashan, AICP

Kim Hansen, AICP

Mike Haskell

Courtney Schwab

Jessica Turner

Butte County Air Quality Management District

2525 Dominic Drive, Suite J
Chico, CA 95928

(530) 891-2882
(530) 891-2878 Fax

W. James Wagoner
Air Pollution Control Officer

Robert McLaughlin
Asst. Air Pollution Control Officer

October 5, 2004

RECEIVED
OCT - 7 2004
BY:

Kim Hansen
Quad Knopf
One Sierragate Plaza, Suite 270C
Roseville, CA 95678

Re: Initial Study for California State University, Chico - Campus Master Plan 2004

Dear Ms. Hansen:

The District has reviewed the requests for comments for the above project. Based on the information submitted the District submits the following comments.

1. Page 34 – IIIa-c: The attainment status for federal PM10 for Butte County is Attainment, not unclassified.
2. Page 34 – IIIa-c: The Air Districts in the Northern Sacramento Valley Air Basin jointly prepared and the District Governing Board adopted the 2003 Air Quality Attainment Plan. The Plan is prepared for the purpose of achieving and maintaining healthful air quality throughout the air basin and is updated every 3 years.
3. The District recommends conducting an air quality analyses using the computer model URBEMIS, which performs estimates on indirect source emissions from land use developments based on vehicle trip generation. If the project has projected emissions greater than level B (reference BCAQMD Indirect Source Review Guidelines) apply all feasible mitigation measures for construction and/or operation from the list of recommended mitigation measures. All projects contribute to cumulative air quality impacts and should employ the appropriate standard mitigation measures at a minimum. Based on the information submitted the District has no further comments regarding the proposed project.

Thank you for the opportunity to comment on the proposed project. If you have any questions, please do not hesitate to contact the District at 891-2882.

Sincerely,

Gail Williams

Gail Williams
Air Quality Planner

File No 3455

t:\apps_files\eir\chico is csuc.doc

CITY OF CHICO
INC 1872

COMMUNITY DEVELOPMENT
DEPARTMENT

411 Main Street
P.O. Box 3420
Chico, CA 95927

(530) 895-4845
Fax (530) 895-4726
http://www.ci.chico.ca.us

October 15, 2004

RECEIVED
OCT 18 2004
BY:

FAX 916 784 3520

Kim Hansen
Quad Knopf, Inc.
One Sierragate Plaza, Suite 270
Roseville, California 95678

Re: Notice of Preparation - California State University, Chico Campus Master Plan 2004

Dear Ms. Hansen:

Following are City of Chico comments in response to the Notice of Preparation for the California State University, Chico Campus Master Plan EIR:

1. Page 7 - Rio Chico Physical Education and Aquatic Center Facility and Pages 36/37 - Cultural Resources - The project description and discussion of the potential environmental impact propose the relocation of any historic structures displaced by the project to nearby residential neighborhoods. The EIR should address both the feasibility of relocation of these structures based on structural integrity and availability of suitable "receiving" sites.

2. Page 8 - Housing - It is unclear as to whether or not the current housing capacity of 1731 includes the 496 accommodated in Whitney Hall, or if the 1298 new bed-spaces includes the replacements for the loss of Whitney Hall. Please clarify in the EIR to facilitate an accurate analysis of housing impacts.

3. Page 17 - General Plan Designation and Zoning - The Master Plan includes the acquisition of properties along both Warner Street and East 1st Street. For the Warner Street properties the current General Plan designation is "Low Density Residential" and the zoning is R-1 (Low Density Residential). For the East 1st Street properties the current General Plan designation is "Medium High Density Residential" and the zoning is R-3 (Medium High Density Residential). The campus itself is zoned OS-2 (Secondary Open Space), not P-Q.

4. Page 18 - Responsible Agencies - City of Chico approval may also be required for any actions encroaching on Bidwell Park property along Big Chico Creek, including new storm drain outfalls and utilities. In addition, City assistance may be required to facilitate some of the acquisitions depicted in the master plan.

5. Figure 6 - Surrounding Land Uses - The Historic District is located south of Campus, not to the west as depicted in the figure. To the west are a mix of residential and commercial uses. To the northwest (across West Sacramento Avenue) is additional residential and a small area of commercial.

6. Page 35 - Biological Resources - Elderberry shrubs, potentially providing habitat for the federally listed endangered species Valley Elderberry Longhorn Beetle, may be located along Big Chico Creek. The U. S. Fish and Wildlife Service considers activities within 250 feet of these shrubs as potentially impacting the species. The EIR should include surveys for this plant and appropriate mitigation if they are found.

7. Page 39 - Hazards and Hazardous Materials and Page 41 - Noise - Ranchero Airport, a privately owned airport available for public use, is located approximately one mile to the west of the campus.

8. Page 40 - Hydrology and Water Quality - The EIR should clearly address the need for treatment of storm water and irrigation runoff from all new facilities prior to discharge to the creek, and identify mitigation measures that ensure that water quality treatment facilities are provided.

9. Page 41 - Land Use and Planning - The discussion regarding the Big Chico Creek corridor is badly flawed. The City General Plan does designate the creek corridor as a Resource Conservation Area, but the creek is within Bidwell Park, a 3670 acre City owned park, extending along the creek from the west boundary of the campus easterly for approximately eleven miles. An estimated 12 acres of Bidwell Park (a corridor 3500 feet long with an average width of 150 feet) is within the campus. Bidwell Park is managed by the City of Chico Park Department, although the portion within the campus is maintained by campus resources.

   The 3950 acre Big Chico Creek Ecological Preserve is also located along Big Chico Creek, contiguous to the easterly boundary of Bidwell Park. The preserve is managed by the Bidwell Environmental Institute.

10. Page 42 - Housing - Implementation of the master plan will include the removal of approximately 100 housing units in the College Park and Rio Chico areas, currently providing housing to approximately 400. The EIR should address the loss of this housing, and accurately reflect additional housing to be provided (see comment 2).

11. Page 44 - Transportation/Circulation - The environmental check list identifies a number of areas of potentially significant impact. The environmental document

should include a comprehensive traffic study that clearly identiifies the traffic impacts and mitigations, potentially including the payment of development impact fees or funding the proportionate share of the cost of these improvements. Impacts to the local transit systems resulting from increased enrollment and displacement of current housing in close proximity to the campus should be addressed in the EIR, with feasible mitigation identified.

12. Page 46 - Utilities and Service Systems - The environmental check list identifies a number of areas of potentially significant impact. The EIR should include analysis of the existing storm drainage system, sanitary sewer collection system and the Water Pollution Control Plant to determine if there is adequate capacity to serve the added facilities and population increase. If there is not adequate capacity in any system component, mitigations measures should be provided to upgrade the inadequate facilities to meet capacity needs.

13. The cumulative impact analysis in the project EIR should address the planned Enloe Hospital expansion project in the neighborhood immediately north of the campus. It should also address the City of Chico's planned multi-story parking structure in downtown Chico (East Second Street and Wall Street) with respect to traffic and potential cumulative aesthetic impacts, when combined with CSUC's planned parking structures off West Second Street.

Please feel free to contact my office if you require any additional information or clarification of these comments. The City looks forward to the opportunity to review the Draft EIR.

Sincerely,

Clif Sellers
Assistant Community Development Director

c: City Manager
Community Development Director
Director of Public Works
Planning Director
Greg Francis, Executive Dean and Director of Facilities Planning, CSU Chico

File Ref: A-CSUC - 2.4 CSUC Master Plan 2004/05

U:\DK\LETRSWP\CSUCMP nop kim hansen ltr (10-15-04).wpd

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
P. O. BOX 911
MARYSVILLE, CA 95901-0911
PHONE (530) 741-4025
FAX (530) 741-5346
TTY (530) 741-4509

Flex your power!
Be energy efficient!

October 15, 2004

04BUT0133
03-BUT-032, P.M. 8.496
C.S.U., Chico 2004 Master Plan
NOP of EIR, SCH # 2004092071

Mr. Greg Francis, Director
California State University, Chico
Office of Facilities Planning
Chico, CA 95929-0025

Dear Mr. Francis:

Thank you for the opportunity to review and provide comments on the notice of preparation (NOP) of a draft environmental impact report (DEIR) for the California State University, Chico (CSUC) proposed 2004 Master Plan on property located north of State Route (SR) 32 at 401 West 1st Street in the City of Chico. Our comments on the NOP are as follows:

Pages 25, 26, and 40 of Section VIII, Hydrology and Water Quality:

- We concur with the findings on pages 25 and 26 that development of the proposed Master Plan may result in potentially significant hydrology and water quality impacts. The main CSUC campus area is part of the greater Big Chico Creek tributary area. Further development of the campus area may increase impervious surface area through the construction of roads, driveways, school buildings, and parking facilities with a corresponding increase in surface water (storm water) runoff. This project may decrease surface water detention, retention and infiltration.

- On page 40, the text states that floodwater is diverted around the City, fully protecting the campus area. This is accomplished via the Lindo Channel diversion structure located east of the Hooker Oak Recreation Area. However, continued development within the Big Chico Creek tributary area between the Lindo Channel diversion structure and the SR 32, Bridge No. 12-43, has resulted in a significant increase in surface water runoff contribution to Big Chico Creek. Further unmitigated development within this tributary area will ultimately result in adverse hydrologic and hydraulic conditions to the State's highway right-of-way (ROW) and drain facilities.

- We recommend that the DEIR address potential cumulative drainage impacts to the State's highway ROW drainage facilities and SR 32, Big Chico Creek Bridge, No. 12-43, identify the proposed runoff pattern and outfall, include backup calculations that support any mitigation measure(s) that will reduce hydrology and hydraulic impacts to a *Less Than Significant* level, and provide drainage mitigation measures that include the following:

- Any increases of discharge into the State drainage system must be mitigated. Runoff must meet all Central Valley Regional Water Quality Control Board (RWQCB) water quality standards prior to entering the State's right of way or drainage facilities. No net increase to the surface water (storm water) peak runoff discharge (100 year storm event) within the State's right of way and drainage facilities may be realized as a result of the completion of the project. Best Management Practices (BMP) should be included to remove objectionable pollutants and to manage storm water prior to discharging into the State's right of way. Once installed, the property owner must properly maintain these systems. Acceptable constituency levels and appropriate BMP information can be obtained from the RWQCB.

Pages 29, 30, 44 and 45 of Section XV, Traffic/Circulation:

- We concur with the findings on pages 29 and 30 that development of the proposed Master Plan may result in potentially significant traffic and circulation impacts. We recommend that a Traffic Impact Study (TIS), which contains appropriate mitigation measures be provided for in the DEIR prepared for the project in accordance with the "Guide for the Preparation of Traffic Impact Studies" updated December 2002. A copy of the guide can be downloaded at: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf.

- The TIS should include trip generation, distribution, and assignment for both AM and PM peak-hour volume data, and Level of Service analysis for every signalized intersection on SR 32 from West East Avenue to Bruce Road, the stop sign controlled intersections of SR 32 at 8th and 9th Streets, the intersection of SR 32 and Ivy Street, and the SR 99 interchanges at Park Avenue/Skyway, SR 32 and East 1st Avenue. If the trip distribution of the SR 32 intersections reveals that traffic impacts will be less than significant, then the analysis might not be needed. Any analysis regarding the need for new traffic signals should be based on the *2003 Manual of Uniform Traffic Controls* and the State's *2003 MUTCD California Supplement*, not the State's *Traffic Manual.*

An Encroachment Permit will be required for any work conducted in the State's ROW. To secure an application, please contact Mr. Bruce Capaul, Caltrans District 3, Office of Permits, at 530-741-4403.

Please send us a copy of the environmental document including the TIS prepared for the project for review when available. If you have any questions regarding these comments, please contact Rick Helman, Local Development/Inter-Governmental Review Coordinator, at (530) 634-7612.

Sincerely,

Rick Helman for

BRUCE DE TERRA, CHIEF
Office of Transportation Planning – North

Cc: Scott Morgan, State Clearinghouse

MECHOOPDA INDIAN TRIBE
of Chico Rancheria, California

October 22, 2004

RECEIVED
OCT 28 2004
BY:

Ms. Kim Hansen
Quad Knopf
One Sierragate Plaza, Suite 270C
Roseville, CA 9567

RE: Initial Study for the California State University, Chico Campus Master Plan 2004

Dear Ms. Hansen:

Thank you for the opportunity to provide comments regarding the Initial Study of the Campus Environmental Master Plan. The Mechoopda Tribe of Chico Rancheria is submitting the following issues and concerns for inclusion and consideration. The Mechoopda Indian Tribe of Chico Rancheria, California, is a federally recognized Indian Tribe that has a vested interest in activities impacting the archaeological, cultural, and environmental resources that comprise the heritage of the Mechoopda people. Tribal involvement in the planning, development, and construction activities of the campus lands is based on the historical occupation of these lands by Mechoopda people. The archaeological record of the scientific community documents the occupation of these lands by the Mechoopda people for at least the last 2,000 years.

The Mechoopda people are inherently concerned with activities impacting the discovery, identification, management, restoration, and preservation of cultural and heritage resources lying within our aboriginal territory. There are recorded village sites on and in close proximity to the lands identified as Chico State University campus and the Chico Agricultural Teaching and Research Center. Furthermore, Mechoopda subsistence and traditional use of resources on these lands was extensive at one time.

It important to establish a common understanding and agreement between the University and the Mechoopda of Chico Rancheria as to the definition of cultural and heritage resources. For example, "traditional cultural properties (TCPs) are cultural resources that are eligible for inclusion in the National Register of Historic Places because of their "association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community" (National Register Bulletin 38).

To excerpt from a recent cultural monitor training document prepared by the Native American Programs Committee of the Society for California Archaeology (p.181):

> Values that Indian people today associate with archaeological sites may be at odds with the scientists' view. Places lacking archaeological indicators where Indian people have traditionally prayed, or may be associated with their origin stories and tribal histories, or collected plants, fished or hunted for foods and materials used for ongoing ceremonials, traditional subsistence, making baskets, regalia and the like may also be considered significant cultural resources.

It is important that oral tradition and an archival search of ethnographic information be included in planning efforts to complement the records search of documented sites. As mentioned at the public hearing on September 29, 2004, it is believed that General John Bidwell in his diaries refers to a large village site once located where the President's Mansion stands today between Butte and Holt Halls.

We feel strongly that the University needs to conduct a comprehensive cultural resources assessment or survey of Chico State University campus and Agricultural Teaching and Research Center lands to identify culturally sensitive areas. There is a need for archaeological survey of lands within the campus boundaries that have not been previously surveyed, or for which the survey results are not suitable for the purpose of resource identification. This must be completed before any future construction could cause destruction of the archaeological record. Only an accurate and conscientious effort conducted immediately will preserve the legacy of the Mechoopda lifeways and cultural heritage inherent in these lands.

We request a collaborative effort to establish an archaeological/cultural resource monitor program and identify appropriate mitigation measures for all future construction projects on campus lands. A monitoring program must allow selection by the Tribe of a cultural resource monitor and an archaeological expert who is knowledgeable of Mechoopda customs/culture. The tribal monitor would be present on excavation sites in all phases of construction. This monitoring is essential at all depths of excavation and extremely important when excavation occurs at depths beyond 10 feet. It is important to determine if the proposed development or action is covered by State law, Federal law, or some combination. The overriding legal criteria for "significance" must be adhered to as posed by state and federal law.

We respectfully request that the University's Campus Master Plan promote the design of campus architecture and landscaping that will acknowledge and honor the Mechoopda occupation of the lands. Design guidelines for campus architecture should be aligned with the master plan and convey a meaningful and aesthetic response representative of the important heritage of the Mechoopda people. The Tribe would work in collaboration with the University to create a living memorial of the Mechoopda territory prior to founding of the Bidwell Ranch, subsequent township, and university presence. We firmly believe that preserving or incorporating cultural and heritage resources in planned developments will greatly benefit the community and provide economic advantages.

The persistence and survival of native flora and fauna is integral to preserving the Tribe's heritage today. For example, large trees kindle oral accounts; Tribal elders identify the history of these lands by such natural landmarks. **Natural resource protection is integral to preserving Mechoopda's heritage. Mandates for treatment of large trees and other significant landmarks need to be identified in the environmental master plan.**

We understand that current planning guidelines restrict disturbance within 100 feet of the top of the creek banks. Another concern is the safe and calculated discharge to the Creek by the University. It is understood from the public meeting on September 29, 2004, that the overriding environmental issues of Chico Creek fall under numerous government entities as well as the City of Chico's storm water management plan. **We would expect those agencies' environmental restrictions and guidelines are included in the environmental master plan for campus lands.**

Campus properties to the south of Sacramento Avenue and east of the railroad tracks on which the soccer fields are located are known to have been part of the land deeded to the Mechoopda by Mrs. Annie K. Bidwell. A portion of the soccer field is recognized by tribal elders to have been part of the Tribe's cemetery located just north of Sacramento Avenue.

Within the context of sacred lands, we must ask the University to identify these soccer fields as open spaces within campus lands as a reservation or place making effort for future shared uses between and mutually beneficial to the Mechoopda and the University.

In her later years, Mrs. Annie K. Bidwell acknowledged that her forced assimilation of the Mechoopda had nearly destroyed a viable and wonderfully rich texture of Native American life in this region. The University's environmental master plan must be sensitive to the fading cultural resources and heritage of the Mechoopda. It must be a responsible planning document that preserves the integrity of the Mechoopda heritage and the University of California institution in Chico. We appreciate any opportunity to collaborate share our concerns and to provide alternatives and solutions that are mutually beneficial.

Sincerely,

Mechoopda Tribal Council

Barbara G. Rose

Barbara Rose
Vice Chair

Copies to:
- Mechoopda Tribal Council
- President Paul J. Zingg
- Mr. Greg Francis, Director of Facilities Planning
- Ms. Rebekah Funes, MIT Environmental Coordinator
- Ms. Arlene Ward, MIT Cultural Liaison

APPENDIX B

```
              URBEMIS 2002 For Windows   7.5.0

File Name:                     C:\Program Files\URBEMIS 2002 For Windows\Projects2k2\CSU Chico MP.urb
Project Name:                  CSU MP Update
Project Location:              Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                        SUMMARY REPORT
                     (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)      0.34      3.56      2.01      0.00      0.01


OPERATIONAL (VEHICLE) EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)     22.38     30.23    229.28      0.60    107.25

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)     22.73     33.79    231.29      0.60    107.26
```

```
               URBEMIS 2002 For Windows   7.5.0

File Name:                     C:\Program Files\URBEMIS 2002 For Windows\Projects2k2\CSU Chico MP.urb
Project Name:                  CSU MP Update
Project Location:              Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                        DETAIL REPORT
                     (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)
    Source                         ROG       NOx        CO       SO2      PM10
 Natural Gas                      0.26      3.56      1.42         -      0.01
 Wood Stoves - No summer emissions
 Fireplaces - No summer emissions
 Landscaping                      0.08      0.01      0.58      0.00      0.00
 Consumer Prdcts                  0.00         -         -         -         -
 TOTALS(lbs/day,unmitigated)      0.34      3.56      2.01      0.00      0.01
```

```
                 UNMITIGATED OPERATIONAL EMISSIONS

                                  ROG        NOx         CO        SO2       PM10
University/college (4 yrs        22.38      30.23     229.28       0.60     107.25

TOTAL EMISSIONS (lbs/day)        22.38      30.23     229.28       0.60     107.25

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025  Temperature (F): 60   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type                       Trip Rate                    Size     Total Trips

University/college (4 yrs    2.38 trips / students         4,000.00     9,520.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type             Percent Type    Non-Catalyst     Catalyst          Diesel
Light Auto                  53.50            0.00           100.00            0.00
Light Truck < 3,750   lbs   15.70            0.00            99.40            0.60
Light Truck  3,751- 5,750   16.50            0.00           100.00            0.00
Med Truck    5,751- 8,500    7.50            0.00            98.70            1.30
Lite-Heavy   8,501-10,000    1.00            0.00            80.00           20.00
Lite-Heavy  10,001-14,000    0.30            0.00            66.70           33.30
Med-Heavy   14,001-33,000    0.90            0.00            22.20           77.80
Heavy-Heavy 33,001-60,000    0.80            0.00             0.00          100.00
Line Haul > 60,000    lbs    0.00            0.00             0.00          100.00
Urban Bus                    0.20            0.00            50.00           50.00
Motorcycle                   1.50           40.00            60.00            0.00
School Bus                   0.10            0.00             0.00          100.00
Motor Home                   2.00            0.00            90.00           10.00

Travel Conditions
                                    Residential                 Commercial
                          Home-     Home-     Home-
                          Work      Shop      Other    Commute  Non-Work Customer
Urban Trip Length (miles) 10.8       7.3       7.5       9.5       7.4       7.4
Rural Trip Length (miles) 16.8       7.1       7.9      14.7       6.6       6.6
Trip Speeds (mph)         35.0      35.0      35.0      35.0      35.0      35.0
% of Trips - Residential  32.9      18.0      49.1

% of Trips - Commercial (by land use)
University/college (4 yrs)                               5.0       2.5      92.5
```

```
Changes made to the default values for Land Use Trip Percentages


Changes made to the default values for Area


Changes made to the default values for Operations

The operational emission year changed from 2004 to 2025.
The travel mode environment settings changed from  both to: none
```

APPENDIX C

CULTURAL RESOURCE ASSESSMENT OF THE CALIFORNIA STATE UNIVERSITY, CHICO MASTER PLAN 2003 AREA, BUTTE COUNTY, CALIFORNIA

Prepared by

Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, California 95973

Prepared for

Quad Knopf
One Sierragate Plaza, Suite 270C
Roseville, California 95678

November 27, 2004
(Job #04-xxx)

INTRODUCTION

California State University, Chico (CSUC) has developed the Campus Master Plan 2003 (the Plan) in order to facilitate the continued expansion in student enrollment. The Plan proposes the construction of five new academic buildings, two recreational facilities, a natural history museum, a child care center, new student housing, and two additional parking structures. Other building and infrastructure renovation projects are also identified within the 119 acre campus area.

The Plan also addresses the long term plan for the 95 acre core area of the 800 acre Paul L. Bryne Memorial Agriculture Teaching and Research Center (ATRC) located approximately two miles south of the main university campus. A wide variety of upgrades and improvements are proposed to ATRC core area including the construction of a multi-purpose Conference Center and Events Center facilities as well as the rehabilitation of many existing buildings.

Quad Knopf was selected to prepare the Campus Master Plan 2003 Environmental Impact Report. Quad Knopf asked that Peak & Associates, Inc. perform a review of the cultural history of the area, review the status of cultural resource studies conducted within the Plan area, perform pedestrian inspections for the presence of cultural resources within areas not previously examined, and prepare recommendations for future activities that will become necessary once elements of the Plan are implemented.

Maps 1 and 2 show the 119 acre main CSUC campus and 95 acre core area of the 800 acre ATRC on copies of the United States Geologic Survey (USGS) Chico 7.5 minute series topographic quadrangle.

Map 1 here

Map 2 here

CULTURAL HISTORY

Ethnology

The Plan area lies within the ethnographically known Konkow territory. The Konkow, the neighboring Maidu to the east, and the Nisenan to the south all spoke Maiduan languages belonging to the Penutian superstock. Within the Konkow language, several dialects were spoken. The distribution of these dialectical groups was, in part, along the lower part of the Feather River Canyon, extending up to about the Rich Bar area. Others of the related groups held the Middle and South Fork Feather River drainages, extending westward onto the Sacramento Valley floor, immediately adjoining the lower foothill courses of these streams (Kroeber 1925:392;Riddell 1978:370).

Above the Central Valley and the gently-sloped lower Sierran foothills, the rivers have incised deep narrow canyons that are, at times, nearly inaccessible. By preference, the Konkow settlements were situated on ridges overlooking the rivers. Generally, selection was preferential towards ridge crest flats or midslope terraces (Dixon 1905:175).

The settlement pattern of the Konkow crossed multiple topographic and corresponding vegetation zones. It is unlikely that any one village had access to more than one or two biotic zones, but the cumulative territorial holdings included the Montane Forest, Montane Chaparral, Riparian Woodland, Valley and Foothill Woodland Chaparral and Valley Grassland (Ornduff 1974). Within each plant community were food resources for exploitation, and these include those faunal members associated with the biotic zones. The pattern of "village communities" (Kroeber 1925:398) constituted the only political organization. A community was comprised of several geographically-related villages with one maintaining a large semisubterranean ceremonial lodge (Riddell 1978:373). This larger lodge may also have been the dwelling of the headman, who was the more authoritative person in the community. The headman acted only as a spokesman and advisor to the people and apparently lacked magisterial powers. Each village community held a known territory in which all community members had hunting and fishing rights. The Konkow had less well-defined territorial boundaries than did the Maidu (Kroeber 1925:398;Riddell 1978:373).

The Konkow followed a seasonal pattern of transhumance, leaving the winter villages to travel higher into the mountains during the late spring and summer. Hunting of the migrating deer was major occupation in these seasons. The Indians exploited a wide array of wild vegetable foods that included pine nuts, seeds, roots, berries, greens and bulbs. The acorn provided the dietary staple as it did for most California Indian groups. The nuts of three species -- black oak, golden oak and interior live oak -- were preferred above all others (Riddell 1978:374). The acorn was processed after gathering by hulling and then grinding the nut meats into flour or meal. Where bedrock was exposed, pits were ground into the flat rock faces. Through the use of elongate cobbles or cylindrical-shaped pestles, the nuts were reduced by pounding in the mortar pits. This arduous task was only the beginning of the task of preparing acorns into an edible commodity. Following the grinding of the nutmeats, the meal required leaching by water to remove the bitter tannin. The slow addition of increasing warmer water was done in shallow depressions in sand. This water process was repeated until the tannin was gone. The dough was either cooked with water to make soup or mush. Bread was also made by baking the dough under hot stones (Riddell 1978:374).

The largest game animal that was hunted for its meat was the deer. Smaller mammals were not excluded as protein sources, although wolf, dog and coyotes were not eaten. Fishing produced salmon, trout, steelhead, eels and other rough fish.

The Konkow practiced hunting, gathering and fishing subsistence strategies. Their intimate knowledge of the flora and fauna ensured a well-developed exploitation of their territorial environs (Riddell 1978:373).

There were three dwellings constructed by the people, with use of these types related to the season. Winter structures were of two kinds: a semisubterranean earth-covered lodge and a smaller, conical, bark slab dwelling. The summer houses were informal, wall-less shades constructed of upright poles supporting a roof of branches and leaves.

Trade was well developed in an interlocking system, with neighboring groups such as the Maidu, Achumawi and Wintuans. The exchange system brought desired goods into the Konkow groups while they supplied food stuffs, hides, arrows and bows to their trading partners (Riddell 1978:380;Kroeber 1925).

Acculturation Period

The Konkow were almost decimated in 1833 by an epidemic of what may have been malaria (Cook 1955:322). In 1849, the onslaught of the gold miners completed the destruction of the Konkow lifeway. The miners penetrated to the most remote corners of the Konkow and Maidu lands with a consequent near total population displacement. The environmental balance was distorted by the whites, and the primary food sources were no longer easily available to the Indians. As a result, the starving Native Americans were forced to kill domestic livestock in order to survive. The white community responded in an often excessive manner and many innocent Indians were killed. In 1863, the forced relocation of many surviving Indians to Round Valley Reservation brought the hostilities under control. By 1870, the Indian resistance was virtually over (Riddell 1978:385).

The native community in the Chico area were somewhat more fortunate, thanks largely to John Bidwell, who had employed many native Konkow in his gold mining operations at nearby Bidwell Bar, shortly after the discovery of gold at Coloma. The Mechoopda band of Konkow returned with Bidwell to his new residence at Rancho Chico where they were employed as laborers. The Mechoopda lived adjacent to Bidwell's home (cabin, adobe structure, and finally mansion) until being relocated to a nearby area so that they would have more room (and due to all-night cry ceremonies behind the mansion that were disturbing to Bidwell's new wife, Annie). It is uncertain as to whether the "Indian village" shown on a map drawn by Bidwell in 1867 pre or post-dated Bidwell's arrival in the area (White in White et al. 2002:4). In general, thanks to Bidwell's protection and employment, the Mechoopda were spared the forced relocation to the Round Valley Reservation in 1863 and continued to practice many traditional cultural lifeways well into the 20th century.

History

Among the initial penetrations of the upper Sacramento Valley region by Europeans was that of the Spanish explorer Gabriel Moraga, who in 1808, explored the lower reaches of Feather River, perhaps as far north as Sutter Buttes. In 1820, Captain Luis Arguello led an expedition into the foothills east of Oroville, and gave the Feather River its name (Fariss and Smith 1882:144-145). By 1828, and throughout the next two decades, Hudson's Bay Company and American Fur Company trappers were active within the region (Wells and Chambers 1973:128).

In 1844, Mexican Governor Manuel Micheltorena issued several land grants within northern California, including portions of what would later become Butte County. Peter Lassen was awarded a grant on Deer Creek, part of which extended into northern Butte County. That same year, Edward A. Farwell and Thomas Fallon settled on the Farwell grant, the eastern boundary of which cuts through present-day Chico, and Samuel Neal occupied the Esquon Grant, encompassing the modern hamlets of Durham and Nelson. In 1847, grantee John Bidwell settled on his famous estate in Chico. Neal and Bidwell in particular were instrumental in establishing the agricultural and livestock industries in the county, and they both made important gold discoveries as well (McGie 1982:35-37; Talbitzer 1987:21-24; Wells and Chambers 1973:128-129).

Butte County was incorporated on February 18, 1850 by an act of the newly commissioned state legislature. The original Butte County embraced all of present-day Butte and Plumas Counties along with portions of Lassen, Tehama, Sutter, and Colusa Counties (Wells and Chambers 1973:131). By 1853, when farms and settlements began to appear in some of the county's more remote regions, it became evident that the area was too large for the Butte County government to meet growing demands for roads, schools, law and order. Thus, beginning with Plumas County on March 18, 1854, areas within the original Butte County configuration began to be incorporated as separate counties (Fariss and Smith 1882:156-157).

During the late 1840s and early 1850s, Bidwell established the Chico area as an agricultural, transportation, and commercial center. As early as 1847, Bidwell maintained experimental orchards and fields, and a flour mill and fruit-drying plant were soon built. Stage lines passes through Chico, connecting Marysville and the Shasta area. Bidwell opened a hotel to accommodate travelers. By 1851, the first post office was established under Postmaster A.H. Barbar. A court had already been founded, and Chico became a voting precinct in 1852. By 1859, a school was established in the town (McGie 1982:35; Talbitzer 1987:40-41, 60).

By 1860, the future City of Chico was thriving. Bidwell had purchased John Potter's ranch, a part of the Farwell Grant, and had a surveyor produce a plat of the town. Bidwell laid out plans for the town's future streets, and gave free homesites to persons wishing to settle along those streets. About 500 people inhabited the town as of 1860. The town's growth was aided by commerce with the mining camps and towns to the east (McGie 1982:35; Talbitzer 1987:63, 66).

Agriculture and livestock raising along with mining in outlying communities continued to sustain Chico through the final decades of the last century. The California and Oregon railroad, which arrived in 1870, provided another economic boost to Chico, and facilitated the growth of the logging and lumbering industry in the nearby mountains. By 1872, the year in which the Town of Chico was incorporated, Chico boasted several lumber yards and sawmills, and hundreds of people in the vicinity were employed in the industry. Flumes were eventually constructed to transport logs from the mountains directly to the mills of Chico (Talbitzer 1987:67-70).

One of the major developments in the cultural and economic history of Chico was the decision by the state legislature in 1887 to erect a "normal school" in Chico to train elementary school teachers. Chico Normal School accepted its first students for the fall term of 1889. Over the succeeding decades, the school has evolved into California State University, Chico.

RECORD SEARCH

A review of records maintained by the North Central Information Center of the California Historical Resources Information System was conducted by center staff on May 22, 2003 for a proposed Telecommunications Infrastructure Initiative project (Appendix A). The results of this 2003 record search was still valid as of November 2004 (Amy Huburland, Assistant Coordinator, Northeast Center, personal communication 2004). According to this review, two previously identified prehistoric period resources, CA-BUT-295 and CA-BUT-574 were recorded within the 119 acre CSUC campus area. CA-BUT-295 is the undocumented "Indian Village" shown on a hand drawn sketch map drawn by John Bidwell in a letter dated 1867. CA-BUT-574 is the site of the former Chico

Rancheria of Mechoopda.

The two-story Patrick Ranch house, also known as the Patrick Home, is located near the 95 acre ATRC core area, and is listed on the National Register of Historic Places. A prehistoric period village site, CA-BUT-1, also located near the 95 acre ATRC core area, is also separately listed on the National Register.

No recorded historic period archeological sites have been identified within the 119 acre CSUC campus or 95 acre ATRC core area. According to the Northeast Center, the Old Chico State College Library, constructed in 1933 and located within the CSUC campus area, has been identified as eligible to the National Register of Historic Places (NRHP). The Administration Building, located at 1 Normal Avenue and Auditorium/Assembly Building, located a 1 Salem Street have also been identified as appearing eligible for listing in the NRHP. Indeed, the entire Chico State College,...."Appears eligible as a contributor to a fully documented National Register District....", (Northeast Center record search #H03-15, dated May 22, 2003, Appendix A).

The Bidwell Mansion, located directly adjacent to the 119 acre CSUC campus is listed on the National Register of Historic Places and on the California Inventory of Historic Resources and as a California Historical Landmark. Rancho Chico and the Bidwell Adobe are listed in the California Inventory of Historic Resources and as California Historical Landmarks.

Previous archeological studies within the 119 acre CSUC campus area have been limited to one archeological test excavation conducted to evaluate whether cultural material was present prior to the development of student housing (Scientific Resource Surveys, Inc. 1981). Two investigations concerning the locations of former structures associated with Bidwell Mansion have occurred within the Bidwell Mansion State Historic Park (Johnson 1988; White, et al 2002). No record of any formal archeological inspection of either the 119 acre CSUC campus, or the 95 acre ATRC core area, is on file at the Northeast Information Center.

CONSULTATION

A public meeting was held in Chico on September 29, 2004. Two people were in attendance, and both expressed concerns about cultural resources. Gregory White, Director of the Archaeological Research Program at CSUC, commented as a member of the public. Arlene Ward, Cultural Liaison for the Mechoopda Indian Tribe, also attended the meeting and had a number of comments. On October 26, 2004, Ms. Ward forwarded a letter prepared by the Mechoopda Indian Tribe to Quad Knopf (Appendix B), with a note that partially stated..."This was an important action for the Mechoopda necessitating a thorough review by the environmental coordinator, cultural liaison and Tribal Council..(fax cover sheet to Quad Knopf, 10/29/04).

The main issues addressed in the October 26, 2004 letter by Barbara Rose, Vice Chair, Mechoopda Tribal Council (Appendix B) include:

- The need to "establish a common understanding and agreement between the University and the Mechoopda of Chico Rancheria as to the definition of cultural and heritage resources…"; and,
- The importance of…"oral tradition and the archival search of ethnographic information be included in planning efforts to complement the record search of documented sites…"; and,
- The need for the University, "…to conduct a comprehensive cultural resources assessment or survey of Chico State University campus and Agricultural Teaching and Research Center lands to identify culturally sensitive areas…"; and,
- A request that a, "…cooperative effort to establish an archaeological/cultural resource monitor program and identify appropriate mitigation measures for all future construction projects on campus lands…"; and,
- A, "….respective request that the University's Campus Master Plan promote the design of campus architecture and landscaping that will acknowledge and honor the Mechoopda occupation of the lands."; and,
- "Campus properties to the south of Sacramento Avenue and east of the railroad tracks on which the soccer fields are located are known to have been part of the land deeded to the Mechoopda by Mrs. Annie K. Bidwell. A portion of the soccer field is recognized by tribal elders to have been part of the Tribe's cemetery located just north of Sacramento Avenue.": and,
- Within the context of sacred lands, we must ask the University to identify these soccer fields as open spaces within campus lands as a reservation or place making effort for future shared uses between and mutually beneficial to the Mechoopda and the University."

FIELD SURVEY

ATRC Core Area

The 95 acre ATRC core area was inspected by Neal Neuenschwander, Staff Archeologist, Peak & Associates, Inc. on November 24, 2004. J. Mark Cole, Administrative Director, ATRC, graciously assisted Mr. Neuenschwander in a tour of the property and structures, and offered any assistance that would be necessary so that a complete inspection of the facility could occur.

The 95 acre ATRC core area is inhabited by a number of post 1963-era buildings and structures that have been constructed by the University. There are also numerous pens and enclosures, and two water-retention ponds, located within the core area. Surface visibility was generally good throughout the core area, with only limited expanses of landscaped areas or pastures with thick vegetative cover. According to Mr. Cole, portions of the 95 acre core area were raised in elevation with the importation of fill material (J. Mark Cole, personal communication, 2004). This importation of fill material was particularly noticable along the eastern margin of the core area, where orchard crops located east of the roadway were obviously one to two feet lower in elevation than the core area of the ATRC.

CSUC Campus Area

The 119 acre CSUC campus area was inspected by Neal Neuenschwander on November 26, 2004. In contrast to the 95 acre ATRC, much of the campus area is covered with landscaping, sod, and structures that greatly obscure the ground surface visibility. Every effort was made to examine exposed ground surfaces, including the exposed cutbanks of Chico Creek which passes through the campus. An intensive surface examination of the reported site of the former Indian Village (CA-BUT-295) was conducted.

SURVEY RESULTS

ATRC Core Area

Two historic period resources were identified during the inspection. The first is the old blacksmith shop that was originally associated with the nearby Patrick Ranch (J. Mark Cole, personal communication, 2004). It is shown on a copy of the 1948 USGS topographic quadrangle. The structure is proposed to be relocated to the Patrick Ranch in a cooperative effort between CSU, Chico and the Chico Museum Association, owner of the Patrick Ranch (J. Mark Cole, personal communication, 2004).

The second resource consists of a single-story residence located at 15 Nicholas C.

Schouten Lane that is currently unoccupied. It is eventually slated to be demolished and removed (J. Mark Cole, personal communication, 2004). Although the residence does not appear on the 1948 era USGS topographic quadrangle, it is architecturally a Minimal Traditional Style residence that were typically constructed between 1935 and 1950 (McAlester and McAlester 1996:478). Its construction likely dates to before 1954 and therefore was recorded as a cultural resource.

CSUC, Campus

Aside from the recognized "campus historic core" of the University (Ac Martin Partners, Inc. 2003: Figure 1.14), and the Albert E. Warren Reception Center (former Daniel H. Moulton residence, constructed in 1923), there are four additional major campus buildings constructed prior to 1959 (Ac Martin Partners, Inc. 2003: Figure 1.31). One of these buildings, the Aymer Jay Hamilton Building, was constructed in 1949, and is now 55 years old and should be evaluated for eligibility to the California Register as a cultural resource before it is modified or demolished. Siskiyou Hall, built in 1957, will also become eligible for consideration as a cultural resource in three years time.

During the investigation of the CSUC campus, one area containing historic period isolated artifacts was identified near Alumni Glen, Holt Hall, and Albert E. Warren Reception Center. Two fragments of an aqua-colored glass bottle (canning jar?), and two fragments of a white-glaze ceramic cup were discovered in association with other more modern appearing glass and plate glass fragments in an area with darkened sediment. These isolated artifacts may be associated with a larger deposit that is obscured by vegetation and fill. The isolated historic period fragments may represent the remains of refuse deposited behind the Albert E. Warren Memorial Center (former Daniel H. Moulton residence), before it was sold to Chico State University in 1945. They are also located in the general area where the "Indian Village" (CA-BUT-295) is believed to be located, but are probably too modern to be associated with this site.

EVALUATION

Standards of Significance

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. Historical resources may include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archeologically significant or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California. When a project will impact an archeological site, it needs to be determined whether the site is an historical resource, which is defined as any site which:

(A.) Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and

(B) Meets any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Resource Evaluations

Blacksmith Shop (ATRC Core Area)

The building was apparently once associated with the nearby Patrick Ranch, when the ranch encompassed 400 acres as opposed to the 23 acres it does today. The residence at the Patrick Ranch is listed on the National Register of Historic Places due to its architectural merits, but other buildings, activities, or individuals associated with the ranch complex are not included in the listing.

Architecturally, the blacksmith shop is not an outstanding example. It lacks decorative elements that would distinguish the structure, and short of a flue feature in the interior, would not be obvious concerning its previous function. In terms of integrity, the interior has been sided with face-board and a false ceiling has been added, likely after its use as a blacksmith shop. None of the tools, or a forge, associated with blacksmithing, are present in the structure. The setting of the blacksmith shop has been significantly altered with the construction of the post-1963 ATRC facilities that surround the shop.

The blacksmith shop does not appear to be an eligible historic resource under the California Register.

Residence (ATRC Core Area)

The single-story, Minimal Traditional Style residence may also have been associated with the nearby Patrick Ranch, or former owners of the ATRC core area before the state acquired the property in 1963. It is not a particularly early or outstanding example of this common architectural style of residential construction that occurred primarily between 1935 and 1950. It was not constructed before 1948, according to the USGS topographic quadrangle.

The integrity of the residence is also compromised by what appears to have been a later addition to the residence along the east side. Differing roof profiles, and exposed, as opposed to closed eaves, distinguish this later-appearing addition that was probably added after the original residence was constructed. The setting of the residence has also been negatively affected by the surrounding ATRC Core Area development.

The residence does not appear to be an eligible historic resource under the California Register.

Isolated historic period artifacts (CSUC, Campus)

The four fragments of historic period artifacts are most likely associated with the occupation of the nearby residence (Albert E. Warrens Reception Center), when the structure was owned and occupied by Daniel H. Moulton and his wife Flora (1923-1945). It was not uncommon to during the early part of the 20th century to process and dispose of some waste material within the confines of one's property. These isolated artifacts were also associated with more modern appearing glass and at least one plate glass fragment, and may also represent imported fill material.

Due to vegetative cover, and the presence of paved walkways, it was impossible to ascertain, with complete certainty, whether or not an intact deposit of historic period material exists in this area. Given the previous development of the area (Alumni Glen, and nearby Holt Hall), an intact deposit of historic period artifacts would seem unlikely. Even if an intact deposit did exist beneath the vegetation and modern ground surface, it would only be eligible to the California Register as an historic property if it could be shown to have been associated with a significant person or event, or possess qualities such as its ability to yield information important in history.

The four isolated historic period artifacts do not appear to be an eligible historic resource under the California Register.

CONCLUSIONS and RECOMMENDATIONS

With the exception of the historic period structures located within the CSUC Campus area, there are no known properties eligible for or listed on the California Register of Historical Resources within the proposed CSUC Campus or 95 acre ATRC Core area.

The surface inspection of these two areas conducted by Peak & Associates in association with the Chico Master Plan 2003 should not, however, be construed to imply that such eligible properties do not exist in either of the two areas. Indeed, there is a substantial amount of documentary evidence to indicate that there is a high likelihood that such potentially eligible resources do indeed exist, but are not readily observable on the ground surface, within the 119 acre CSUC campus area. The 800 acre ATRC, including the 95 acre core area, also has a moderate potential to contain eligible cultural resources beneath the ground surface that are not readily observable.

It is recommended that any proposed activity that will result in the excavation of sub-surface sediment within the 119 acre CSUC campus area, or 800 acre ATRC, the Research Archaeology Program, a CSUC Foundation supported program, and the Mechoopda Indian Tribe should be consulted prior to the commencement of ground disturbing activities.

Peak & Associates also strongly recommends that during any future excavation of sub-surface sediment within the 119 acre CSUC campus area, 95 acre ATRC Core Area, or remaining acreage within the 800 acre ATRC, that an archeological monitor be present to observe this activity. Given the strong possibility that such undocumented resources may be related to the occupation and use of the area by the Mechoopda Indian Tribe, a representative tribal monitor should also be present to act as a liaison to the Mechoopda Indian Tribe and also to act as a "most likely descendant" should Native American internments be unearthed during construction activities.

Prior to the demolition, or alteration, of any building or structure greater than 45 years in age within the 119 acre CSUC campus area or 800 acre ATRC, Peak & Associates recommends that a qualified architectural historian and historian be retained to evaluate the potential significance of these resources.

REFERENCES CITED

Ac Martin Partners, Inc.
2003 California State University Chico Campus Master Plan 2003: Draft for Internal Review. Ms. in author's possession.

Clark, William B.
1970 Gold Districts of California. *California Division of Mines and Geology,* Bulletin 193.

Cook, Sherburne F.
1955 The Epidemic of 1830-33 in California and Oregon. *University of California Publications in American Archaeology and Ethnology* 43(3):303-326. Berkeley.

Dixon, Roland B.
1905 The Northern Maidu. *Bulletin of the American Museum of Natural History 17*(3):119-346. New York.

Fariss, and Clarence L. Smith
1882 *History of Plumas, Lassen, and Sierra Counties, California.* Reprinted in 1971 by Howell-North Books, Berkeley.

Gudde, Edwin G.
1975 *California Gold Camps.* University of California Press, Berkeley.

Johnson, Keith L.
1988 In Search of John Bidwell's Carriage House: Archaeological Investigations at Bidwell Mansion State Historic Park, Chico, California. Ms. On file, Northeast Center of the California Historical Resources Information System, California State University, Chico.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology* Bulletin 78. Washington.

McGie, Joseph F.
1982 *History of Butte County, Volume I.* Butte County Board of Education, Oroville. (Revised edition, originally published in 1956).

Riddell, Francis A.
1978 Maidu and Konkow. In *Handbook of North American Indians* (vol. 8), edited

by Robert F. Heizer, pp. 370-387. Smithsonian Institution, Washington, D.C.

Scientific Resource Survey, Inc. (SRS)

1981 Archeological/Historical Test Report. The Proposed Student Housing Project Area Located on the Campus, California State University, Chico. Report on file, Northeast Information Center, California Historical Resources Information System.

Talbitzer, Bill

1987 *Butte County: an illustrated History*. Windsor Publications, Inc., Northridge.

White, Gregory G.

2002 Bidwell Mansion Grounds Historical and Archaeological Research: Summary of Findings and Results of Geophysical Studies. In, Bidwell Mansion State Historic Park: Results of 2002 Mansion Grounds Historical and Archaeological Research, by White et al. Ms. On file, Northeast Center of the California Historical Resources Information System, California State University, Chico.

White, Gregory G., Kathleen Hillman, and Elin Pynchon

2002 Bidwell Mansion State Historic Park: Results of 2002 Mansion Grounds Historical and Archaeological Research. Ms. On file, Northeast Center of the California Historical Resources Information System, California State University, Chico.

Personal communication

J. Mark Cole, Administrative Director, Paul L. Byrne Memorial Agriculture Teaching and Research Center, 2004

Amy Huberland, Assistant Coordinator, Northeast Center of the California Historical Resources Information System, 2004

APPENDIX A

Record Search

Northeast Center of the
California Historical Resources
Information System

BUTTE
GLENN
LASSEN
MODOC
PLUMAS
SHASTA

SIERRA
SISKIYOU
SUTTER
TEHAMA
TRINITY

Anthropology, Langdon 303
California State University, Chico
Chico, California 95929-0377
(530) 898-6256
neinfocntr@csuchico.edu

May 22, 2003

Ms. Glennda Morse
Director, Facilities Management & Services
California State University, Chico
Chico, California 95929

I.C. File # H03-15
Expedited Record Search

RE: Record Search Request, Telecommunications Infrastructure Initiative (TII), California State University, Chico
T22N, R1E, Unsectioned land.
T21N, R1E Sections 11 & 12
USGS Chico 7.5' and 15' quadrangle maps
College Campus parcel, approximately 240 acres
Hegan Lane Parcel, approximately 120 acres (Butte County)

Dear Ms. Morse,

In response to your request, an expedited record search for the above-cited project was conducted by examining the official maps and records for archaeological sites in Butte County.

RESULTS

CSUC College Campus Parcel:

Native American Resources: According to our records, there are two previously recorded sites of this type known to be located within the project boundaries, CA-BUT-295 and CA-BUT-574. CA-BUT-295 has been described as one of two historic Native American sites occupied by the Mechoopda Indians on John Bidwell's property in Chico. Dark midden soil and housepits have also been reported at the site. In 1869, this Mechoopda village site was moved to another location. This second location, recorded as CA-BUT-574, was also known as the Mechoopda Indian Rancheria or Chico Rancheria. According to historic records, aboriginal type houses, wood frame houses, a semi-subterranean assembly house, and a small wooden Christian Church were eventually constructed at this location. The original (ethnographic or prehistoric) Mechoopda village site, CA-BUT-459, is reported to have been located about ¼ mile from the existing CSUC campus.

The Mechoopda tribelet of the Northwestern, or Konkow Maidu occupied the territory from Chico Creek to south of Durham and from the Sacramento River east to Little Chico Creek. After Euro-American occupation of the Chico area, John Bidwell's ranch became a refuge for local Native Americans.

Historical Resources: According to our records, there are no recorded archaeological sites of this type known to be located within the project boundaries. There are, however, two recorded sites within a one mile radius of the CSUC campus, consisting of a historic structure and a circa 1880-1910 Euro-American refuse deposit. Bidwell Mansion is listed on the National Register of Historic Places and on the California Inventory of Historic Resources. Rancho Chico and the Bidwell Adobe are listed in the California Inventory of Historic Resources and as a California Historical Landmark. A number of historic structures that appear to be located within the CSUC college campus parcel are listed in the Historic Property Directory for Butte County. These are described in the table below.

Property Name / Address	Year Constructed	National Register Status
South of Campus Historic District	1862	Listed on the National Register
Old Library, Chico State College	1933	Eligible to the National Register
Chico State College	1929	Appears eligible as a contributor to a fully documented National Register District
Administration Building, 1 Normal Avenue	1929	Appears eligible as a separate property and as a contributor to a fully documented National Register District
Auditorium/Assembly Building, 1 Salem Street	1933	Appears eligible as a separate property and as a contributor to a fully documented National Register District
Annie K. Bidwell Children's Playground	1911	Eligible for local listing only

John Bidwell acquired the 22,214-acre Rancho del Arroyo Chico land grant in two purchases in 1849 and 1851. His original log cabin residence was built in 1849. In 1852, he had a two-story adobe constructed, serving as a residence and office and later containing a hotel and bar. Bidwell's store was built in 1852. By 1857 he had 350 acres under cultivation, with both orchard and row crops. His 26-room mansion was constructed between 1865 and 1868, serving as home to he and his wife, Annie.

Chico State Normal School, located within the current CSUC campus, was established in 1887 as a teacher's college. Classrooms, a gymnasium, and a chemistry lab were added in 1903 and in 1909, $30,000 was provided for the construction of a training school building. In 1927 fire destroyed the main Chico State Teacher's College building. In 1929, a new cornerstone was laid over the original cornerstone of the Normal School building and construction of a new administration building began. A 1935 legislative act changed the college name to Chico State College. Between 1945 and 1970, new construction expanded the college campus and in 1972 Chico State College became California State University, Chico.

The Chico, California 15' topographic quadrangle (1949) indicates Chico State College, Central School, [Chico] High School, Chico Rancheria, the Southern Pacific Railroad, Bidwell Mansion State Monument, and structures and roads within the CSUC campus parcel and the Sacramento Northern Railroad/Esplanade in the immediate campus vicinity.

Previous Archaeological Investigations: According to our records, several previous archaeological investigations have been conducted within the CSUC college campus parcel. The references are listed below.

Johnson, Keith

1987 *In Search of John Bidwell's Carriage House: Archaeological Investigations at Bidwell Mansion State Historic Park, Chico, California.* Archaeological excavations of the carriage house, constructed around 1880, yielded historical features and both historic and Native American (contact period) artifacts.

Scientific Resource Surveys, Inc. (Roger Desautels)

1981 *Archaeological/ Historical Test Report on the Proposed Student Housing Project Area Located on the Campus of California State University at Chico.* Ethnographic (Dorothy Hill) and historic (J. Elliott) background studies conducted. Limited archaeological testing (Peter Jensen) recovered 68 recent/historic artifacts and two basalt flakes.

White, Greg, Michael Magliari, and William Silva

2002 *Bidwell Mansion State Historic Park Results of 2002 Mansion Grounds Historical and Archaeological Research.* Documentary and magnetometer studies conducted to locate subsurface historical features. Historical research indicated the location of an "Indian Village" on Bidwell's property within the CSUC college campus parcel. Magnetometer studies indicated possible evidence of the location of the log cabin, old adobe, and the Bidwell store. Further subsurface investigations (excavations) recommended.

Hegan Lane Parcel:

Prehistoric Resources: According to our records, there are no previously recorded sites of this type known to be located within the project boundaries. There is, however, one previously recorded site within ½ mile of the Hegan Lane parcel. This site, CA-BUT-1, also known as the Patrick Rancheria, is listed on the National Register of Historic Places and the California Inventory of Historic Resources. The site is described as a historic Native American village marked by dark midden soils and containing 12-36 housepits and other cultural constituents.

Historical Resources: According to our records, there are no previously recorded sites of this type known to be located within the project boundaries. The USGS Chico, California 15' quadrangle map (1949) indicates structures and roads within this parcel.

Previous Archaeological Investigations: According to our records, no portion of the project area has been previously surveyed for cultural resources.

LITERATURE SEARCH

Reviewed were the official records and maps for archaeological sites and surveys in Butte County. Also reviewed were the **National Register of Historic Places - Listed Properties and Determined Eligible Properties** (1988, Computer Listings 1966 through 7-00 by National Park Service), the **California Register of Historical Resources** (2002), **California Points of Historical Interest** (1992), **California Historical Landmarks** (1996), **Gold Districts of California** (1970), **Historic Spots in California** (1966), and the **Directory of Properties in the Historic Property Data File for Butte County** (2003).

RECOMMENDATIONS

CSUC College Campus Parcel:

Based upon information obtained as a result of this review, the CSUC college campus parcel appears to be located in an area considered highly sensitive for prehistoric, protohistoric (contact period), and historical cultural resources. Two previously recorded Native American contact period sites, CA-BUT-295, and CA-BUT-574, are located within the parcel, and a prehistoric archaeological site is located within ½ mile of the area. Potential for additional prehistoric or historic Native American sites is indicated by the proximity of Big Chico Creek, which bisects the parcel. Historical archaeological sites or features associated with Bidwell's Rancho, Chico Normal School, and Chico State College can also be anticipated. The Historic Property Directory for Butte County indicates a number of historic structures within the parcel are listed on the National Register and/or California Register.

At the state level, the California Environmental Quality Act (CEQA) requires that public agencies consider the effects of their actions on historical resources eligible for listing on the California Register of Historical Resources. Therefore, we recommend that you contact a professional Historical Resources Consultant or consulting firm to conduct the following work:

> Monitor all proposed trenching for the CSUC college campus portion of the ITT project. Once the consultant is hired, CSUC Facilities Management personnel should notify the consultant at the initiation of specific trenching projects. A Native American monitor should also be hired. The consultant(s) should inspect the trench for potential archaeological features and artifacts. Qualifying archaeological sites should be recorded on DPR 523 forms and records submitted to the Northeast Information Center. The consultant should determine the significance of the find and, if potentially significant, provide recommendations for further work. Further work may include historical research, archaeological testing, and/or data recovery excavations. Subsequent to these field studies, the consultant should document such work in a report.

The historical resources consultant should meet the Secretary of Interior Standards for Archaeology, should be familiar with the history and prehistory of the project area, versed in historical research, and should demonstrate the resources necessary to conduct testing and data recovery excavations. Enclosed is a copy of our referral list, which provides the names of professionals who are qualified to undertake this project.

Hegan Lane Parcel:

Based upon information obtained as a result of this review, the Hegan Lane parcel appears to be located in an area considered sensitive for prehistoric, protohistoric (contact period), and historical cultural resources. A previously recorded National Register site, CA-BUT-1, is located within ½ mile of the parcel. Additionally, the 1949 Chico, California 15' map indicates potential for historical structures and roads. Since the Hegan Lane parcel is relatively open and undeveloped, it is recommended that a historical resources professional be contacted to conduct an archaeological survey of the parcel. This person or firm should record any identified archaeological sites or historical structures and provide appropriate recommendations for protection or mitigation of significant sites. The historical resources consultant should determine whether archaeological monitoring of the TII trenching at the Hegan Lane parcel would be appropriate. This person should also contact appropriate local Native American representatives for information regarding unrecorded traditional cultural properties that may be located within the project area.

The charge for this record search is $900.00 (5 hours of expedited Information Center time @ $180.00 per hour). An invoice from the CSUC University Research Foundation will follow. Thank you for your concern in preserving California's cultural heritage, and please feel free to contact our office if you have any questions.

Sincerely,

Amy Huberland

Amy Huberland, M.A.
Assistant Coordinator

APPENDIX B

Mechoopda Indian Tribe

October 22, 2004 letter

MECHOOPDA INDIAN TRIBE
of Chico Rancheria, California

RECEIVED
OCT 28 2004
BY:

October 22, 2004

Ms. Kim Hansen
Quad Knopf
One Sierragate Plaza, Suite 270C
Roseville, CA 9567

RE: Initial Study for the California State University, Chico Campus Master Plan 2004

Dear Ms. Hansen:

Thank you for the opportunity to provide comments regarding the Initial Study of the Campus Environmental Master Plan. The Mechoopda Tribe of Chico Rancheria is submitting the following issues and concerns for inclusion and consideration. The Mechoopda Indian Tribe of Chico Rancheria, California, is a federally recognized Indian Tribe that has a vested interest in activities impacting the archaeological, cultural, and environmental resources that comprise the heritage of the Mechoopda people. Tribal involvement in the planning, development, and construction activities of the campus lands is based on the historical occupation of these lands by Mechoopda people. The archaeological record of the scientific community documents the occupation of these lands by the Mechoopda people for at least the last 2,000 years.

The Mechoopda people are inherently concerned with activities impacting the discovery, identification, management, restoration, and preservation of cultural and heritage resources lying within our aboriginal territory. There are recorded village sites on and in close proximity to the lands identified as Chico State University campus and the Chico Agricultural Teaching and Research Center. Furthermore, Mechoopda subsistence and traditional use of resources on these lands was extensive at one time.

It important to establish a common understanding and agreement between the University and the Mechoopda of Chico Rancheria as to the definition of cultural and heritage resources. For example, "traditional cultural properties (TCPs) are cultural resources that are eligible for inclusion in the National Register of Historic Places because of their "association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community" (National Register Bulletin 38).

To excerpt from a recent cultural monitor training document prepared by the Native American Programs Committee of the Society for California Archaeology (p.181):

> Values that Indian people today associate with archaeological sites may be at odds with the scientists' view. Places lacking archaeological indicators where Indian people have traditionally prayed, or may be associated with their origin stories and tribal histories, or collected plants, fished or hunted for foods and materials used for ongoing ceremonials, traditional subsistence, making baskets, regalia and the like may also be considered significant cultural resources.

125 Mission Ranch Blvd., Chico, CA 95926 (530) 899-8922 Fax: (530) 899-8517 Email: mit@mechoopda.nsn.us

It is important that oral tradition and an archival search of ethnographic information be included in planning efforts to complement the records search of documented sites. As mentioned at the public hearing on September 29, 2004, it is believed that General John Bidwell in his diaries refers to a large village site once located where the President's Mansion stands today between Butte and Holt Halls.

We feel strongly that the University needs to conduct a comprehensive cultural resources assessment or survey of Chico State University campus and Agricultural Teaching and Research Center lands to identify culturally sensitive areas. There is a need for archaeological survey of lands within the campus boundaries that have not been previously surveyed, or for which the survey results are not suitable for the purpose of resource identification. This must be completed before any future construction could cause destruction of the archaeological record. Only an accurate and conscientious effort conducted immediately will preserve the legacy of the Mechoopda lifeways and cultural heritage inherent in these lands.

We request a collaborative effort to establish an archaeological/cultural resource monitor program and identify appropriate mitigation measures for all future construction projects on campus lands. A monitoring program must allow selection by the Tribe of a cultural resource monitor and an archaeological expert who is knowledgeable of Mechoopda customs/culture. The tribal monitor would be present on excavation sites in all phases of construction. This monitoring is essential at all depths of excavation and extremely important when excavation occurs at depths beyond 10 feet. It is important to determine if the proposed development or action is covered by State law, Federal law, or some combination. The overriding legal criteria for "significance" must be adhered to as posed by state and federal law.

We respectfully request that the University's Campus Master Plan promote the design of campus architecture and landscaping that will acknowledge and honor the Mechoopda occupation of the lands. Design guidelines for campus architecture should be aligned with the master plan and convey a meaningful and aesthetic response representative of the important heritage of the Mechoopda people. The Tribe would work in collaboration with the University to create a living memorial of the Mechoopda territory prior to founding of the Bidwell Ranch, subsequent township, and university presence. We firmly believe that preserving or incorporating cultural and heritage resources in planned developments will greatly benefit the community and provide economic advantages.

The persistence and survival of native flora and fauna is integral to preserving the Tribe's heritage today. For example, large trees kindle oral accounts; Tribal elders identify the history of these lands by such natural landmarks. **Natural resource protection is integral to preserving Mechoopda's heritage. Mandates for treatment of large trees and other significant landmarks need to be identified in the environmental master plan.**

We understand that current planning guidelines restrict disturbance within 100 feet of the top of the creek banks. Another concern is the safe and calculated discharge to the Creek by the University. It is understood from the public meeting on September 29, 2004, that the overriding environmental issues of Chico Creek fall under numerous government entities as well as the City of Chico's storm water management plan. **We would expect those agencies' environmental restrictions and guidelines are included in the environmental master plan for campus lands.**

Campus properties to the south of Sacramento Avenue and east of the railroad tracks on which the soccer fields are located are known to have been part of the land deeded to the Mechoopda by Mrs. Annie K. Bidwell. A portion of the soccer field is recognized by tribal elders to have been part of the Tribe's cemetery located just north of Sacramento Avenue.

Within the context of sacred lands, we must ask the University to identify these soccer fields as open spaces within campus lands as a reservation or place making effort for future shared uses between and mutually beneficial to the Mechoopda and the University.

In her later years, Mrs. Annie K. Bidwell acknowledged that her forced assimilation of the Mechoopda had nearly destroyed a viable and wonderfully rich texture of Native American life in this region. The University's environmental master plan must be sensitive to the fading cultural resources and heritage of the Mechoopda. It must be a responsible planning document that preserves the integrity of the Mechoopda heritage and the University of California institution in Chico. We appreciate any opportunity to collaborate-share our concerns and to provide alternatives and solutions that are mutually beneficial.

Sincerely,

Mechoopda Tribal Council

Barbara G. Rose

Barbara Rose
Vice Chair

Copies to:	Mechoopda Tribal Council President Paul J. Zingg Mr. Greg Francis, Director of Facilities Planning Ms. Rebekah Funes, MIT Environmental Coordinator Ms. Arlene Ward, MIT Cultural Liaison

APPENDIX D

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

APPENDIX E

Appendix B-1
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2004-032
Desciption: CSUC Campus - Existing and Existing Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*ADT*	*Day %*	*Eve %*	*Night %*	*% Med. Trucks*	*% Heavy Trucks*	*Speed*	*Distance*
Existing										
1	Nord Ave.	North of Sacramento Ave.	16650	87		13	2	1	40	75
2	Walnut St.	W. 2nd St. to W. 3rd St.	19800	87		13	2	1	30	75
3	Esplanade	E. 1st St. to Sacramento Ave.	24330	87		13	2.5	1.5	40	75
4		North of W. 2nd St.	24070	87		13	2.5	1.5	40	75
5	Main St.	South of W. 2nd St.	13020	87		13	2	1	30	75
6	Broadway St.	South of W. 2nd St.	17320	87		13	2	1	30	75
7	Sacramento Ave.	Nord Ave. to Warner Ave.	14190	87		13	2	1	30	75
8		Warner Ave. to Esplanade	7520	87		13	2	1	30	75
9	W. 2nd St.	Hazel St. to Chestnut St.	7550	87		13	2	1	30	75
Existing Plus Master Plan										
1	Nord Ave.	North of Sacramento Ave.	18080	87		13	2	1	40	75
2	Walnut St.	W. 2nd St. to W. 3rd St.	20130	87		13	2	1	30	75
3	Esplanade	E. 1st St. to Sacramento Ave.	26335	87		13	2.5	1.5	40	75
4		North of W. 2nd St.	26930	87		13	2.5	1.5	40	75
5	Main St.	South of W. 2nd St.	14640	87		13	2	1	30	75
6	Broadway St.	South of W. 2nd St.	18940	87		13	2	1	30	75
7	Sacramento Ave.	Nord Ave. to Warner Ave.	15150	87		13	2	1	30	75
8		Warner Ave. to Esplanade	10135	87		13	2	1	30	75
9	W. 2nd St.	Hazel St. to Chestnut St.	8070	87		13	2	1	30	75

Appendix B-2
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project # : 2004-032
Description: CSUC Campus - Existing and Existing Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*Autos*	*Medium Trucks*	*Heavy Trucks*	*Total*
Existing						
1	Nord Ave.	North of Sacramento Ave.	63.7	55.8	57.6	65.2
2	Walnut St.	W. 2nd St. to W. 3rd St.	60.9	54.6	57.2	63.1
3	Esplanade	E. 1st St. to Sacramento Ave.	65.4	58.4	61.0	67.3
4		North of W. 2nd St.	65.3	58.4	61.0	67.3
5	Main St.	South of W. 2nd St.	59.1	52.8	55.4	61.3
6	Broadway St.	South of W. 2nd St.	60.3	54.0	56.7	62.5
7	Sacramento Ave.	Nord Ave. to Warner Ave.	59.5	53.2	55.8	61.7
8		Warner Ave. to Esplanade	56.7	50.4	53.0	58.9
9	W. 2nd St.	Hazel St. to Chestnut St.	56.7	50.4	53.0	58.9
Existing Plus Master Plan						
1	Nord Ave.	North of Sacramento Ave.	64.1	56.2	58.0	65.6
2	Walnut St.	W. 2nd St. to W. 3rd St.	61.0	54.7	57.3	63.2
3	Esplanade	E. 1st St. to Sacramento Ave.	65.7	58.8	61.4	67.7
4		North of W. 2nd St.	65.8	58.9	61.5	67.8
5	Main St.	South of W. 2nd St.	59.6	53.3	55.9	61.8
6	Broadway St.	South of W. 2nd St.	60.7	54.4	57.0	62.9
7	Sacramento Ave.	Nord Ave. to Warner Ave.	59.7	53.5	56.1	62.0
8		Warner Ave. to Esplanade	58.0	51.7	54.3	60.2
9	W. 2nd St.	Hazel St. to Chestnut St.	57.0	50.7	53.3	59.2

Appendix B-3
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project # : 2004-032
Description: CSUC Campus - Existing and Existing Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*-- Distances to Traffic Noise Contours --*				
			75	*70*	*65*	*60*	*55*
Existing							
1	Nord Ave.	North of Sacramento Ave.	17	36	78	167	360
2	Walnut St.	W. 2nd St. to W. 3rd St.	12	26	56	121	261
3	Esplanade	E. 1st St. to Sacramento Ave.	23	50	107	231	497
4		North of W. 2nd St.	23	49	106	229	494
5	Main St.	South of W. 2nd St.	9	20	42	92	197
6	Broadway St.	South of W. 2nd St.	11	24	51	111	238
7	Sacramento Ave.	Nord Ave. to Warner Ave.	10	21	45	97	209
8		Warner Ave. to Esplanade	6	14	29	63	137
9	W. 2nd St.	Hazel St. to Chestnut St.	6	14	30	64	137
Existing Plus Master Plan							
1	Nord Ave.	North of Sacramento Ave.	18	38	82	177	381
2	Walnut St.	W. 2nd St. to W. 3rd St.	12	26	57	122	264
3	Esplanade	E. 1st St. to Sacramento Ave.	24	52	113	243	524
4		North of W. 2nd St.	25	53	115	247	532
5	Main St.	South of W. 2nd St.	10	21	46	99	213
6	Broadway St.	South of W. 2nd St.	12	25	55	117	253
7	Sacramento Ave.	Nord Ave. to Warner Ave.	10	22	47	101	218
8		Warner Ave. to Esplanade	8	17	36	77	167
9	W. 2nd St.	Hazel St. to Chestnut St.	7	14	31	67	143

Appendix C-1
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2004-032
Desciption: CSUC Campus - Cumulative and Cumulative Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*ADT*	*Day %*	*Eve %*	*Night %*	*% Med. Trucks*	*% Heavy Trucks*	*Speed*	*Distance*
Cumulative Base										
1	Nord Ave.	North of Sacramento Ave.	21645	87		13	2	1	40	75
2	Walnut St.	W. 2nd St. to W. 3rd St.	25740	87		13	2	1	30	75
3	Esplanade	E. 1st St. to Sacramento Ave.	31290	87		13	2.5	1.5	40	75
4		North of W. 2nd St.	31290	87		13	2.5	1.5	40	75
5	Main St.	South of W. 2nd St.	16925	87		13	2	1	30	75
6	Broadway St.	South of W. 2nd St.	22515	87		13	2	1	30	75
7	Sacramento Ave.	Nord Ave. to Warner Ave.	18450	87		13	2	1	30	75
8		Warner Ave. to Esplanade	9775	87		13	2	1	30	75
9	W. 2nd St.	Hazel St. to Chestnut St.	14380	87		13	2	1	30	75
Cumulative Plus Master Plan										
1	Nord Ave.	North of Sacramento Ave.	23075	87		13	2	1	40	75
2	Walnut St.	W. 2nd St. to W. 3rd St.	26070	87		13	2	1	30	75
3	Esplanade	E. 1st St. to Sacramento Ave.	33635	87		13	2.5	1.5	40	75
4		North of W. 2nd St.	34150	87		13	2.5	1.5	40	75
5	Main St.	South of W. 2nd St.	18545	87		13	2	1	30	75
6	Broadway St.	South of W. 2nd St.	24135	87		13	2	1	30	75
7	Sacramento Ave.	Nord Ave. to Warner Ave.	19410	87		13	2	1	30	75
8		Warner Ave. to Esplanade	12390	87		13	2	1	30	75
9	W. 2nd St.	Hazel St. to Chestnut St.	14600	87		13	2	1	30	75

Appendix C-2
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project # : 2004-032
Description: CSUC Campus - Cumulative and Cumulative Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*Autos*	*Medium Trucks*	*Heavy Trucks*	*Total*
Cumulative Base						
1	Nord Ave.	North of Sacramento Ave.	64.9	57.0	58.8	66.4
2	Walnut St.	W. 2nd St. to W. 3rd St.	62.0	55.8	58.4	64.3
3	Esplanade	E. 1st St. to Sacramento Ave.	66.4	59.5	62.1	68.4
4		North of W. 2nd St.	66.4	59.5	62.1	68.4
5	Main St.	South of W. 2nd St.	60.2	53.9	56.6	62.4
6	Broadway St.	South of W. 2nd St.	61.5	55.2	57.8	63.7
7	Sacramento Ave.	Nord Ave. to Warner Ave.	60.6	54.3	56.9	62.8
8		Warner Ave. to Esplanade	57.8	51.6	54.2	60.1
9	W. 2nd St.	Hazel St. to Chestnut St.	59.5	53.2	55.8	61.7
Cumulative Plus Master Plan						
1	Nord Ave.	North of Sacramento Ave.	65.2	57.2	59.0	66.6
2	Walnut St.	W. 2nd St. to W. 3rd St.	62.1	55.8	58.4	64.3
3	Esplanade	E. 1st St. to Sacramento Ave.	66.8	59.8	62.4	68.7
4		North of W. 2nd St.	66.8	59.9	62.5	68.8
5	Main St.	South of W. 2nd St.	60.6	54.3	56.9	62.8
6	Broadway St.	South of W. 2nd St.	61.8	55.5	58.1	64.0
7	Sacramento Ave.	Nord Ave. to Warner Ave.	60.8	54.5	57.1	63.0
8		Warner Ave. to Esplanade	58.9	52.6	55.2	61.1
9	W. 2nd St.	Hazel St. to Chestnut St.	59.6	53.3	55.9	61.8

Appendix C-3
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project # : 2004-032
Description: CSUC Campus - Cumulative and Cumulative Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*-- Distances to Traffic Noise Contours --*				
			75	*70*	*65*	*60*	*55*
Cumulative Base							
1	Nord Ave.	North of Sacramento Ave.	20	43	93	199	429
2	Walnut St.	W. 2nd St. to W. 3rd St.	14	31	67	144	311
3	Esplanade	E. 1st St. to Sacramento Ave.	27	59	127	273	588
4		North of W. 2nd St.	27	59	127	273	588
5	Main St.	South of W. 2nd St.	11	23	51	109	235
6	Broadway St.	South of W. 2nd St.	13	28	61	132	284
7	Sacramento Ave.	Nord Ave. to Warner Ave.	12	25	54	115	249
8		Warner Ave. to Esplanade	8	16	35	76	163
9	W. 2nd St.	Hazel St. to Chestnut St.	10	21	45	98	211
Cumulative Plus Master Plan							
1	Nord Ave.	North of Sacramento Ave.	21	45	97	208	448
2	Walnut St.	W. 2nd St. to W. 3rd St.	15	31	67	145	313
3	Esplanade	E. 1st St. to Sacramento Ave.	29	62	133	286	617
4		North of W. 2nd St.	29	62	134	289	623
5	Main St.	South of W. 2nd St.	12	25	54	116	250
6	Broadway St.	South of W. 2nd St.	14	30	64	138	298
7	Sacramento Ave.	Nord Ave. to Warner Ave.	12	26	55	119	257
8		Warner Ave. to Esplanade	9	19	41	89	191
9	W. 2nd St.	Hazel St. to Chestnut St.	10	21	46	99	213

Appendix D-1
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2004-032
Desciption: ATRC - Existing and Existing Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*ADT*	*Day %*	*Eve %*	*Night %*	*% Med. Trucks*	*% Heavy Trucks*	*Speed*	*Distance*
Existing										
1	Hegan Ln.	East of East ATRC Access	3,120	87		13	2	1	50	75
2	Hegan Ln.	West of Midway	7,870	87		13	2	1	50	75
3	Midway	East Park Ave. to Hegan Ln.	16,750	87		13	2	1	40	75
4	East Park Ave.	East of Midway	19,520	87		13	2	1	40	75
Existing Plus Master Plan										
1	Hegan Ln.	East of East ATRC Access	3,410	87		13	2	1	50	75
2	Hegan Ln.	West of Midway	8,160	87		13	2	1	50	75
3	Midway	East Park Ave. to Hegan Ln.	17,225	87		13	2	1	40	75
4	East Park Ave.	East of Midway	20,190	87		13	2	1	40	75

Appendix D-2
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project # : 2004-032
Description: ATRC - Existing and Existing Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*Autos*	*Medium Trucks*	*Heavy Trucks*	*Total*
Existing						
1	Hegan Ln.	East of East ATRC Access	59.3	50.1	51.2	60.3
2	Hegan Ln.	West of Midway	63.3	54.1	55.3	64.4
3	Midway	East Park Ave. to Hegan Ln.	63.8	55.8	57.7	65.3
4	East Park Ave.	East of Midway	64.4	56.5	58.3	65.9
Existing Plus Master Plan						
1	Hegan Ln.	East of East ATRC Access	59.7	50.4	51.6	60.7
2	Hegan Ln.	West of Midway	63.4	54.2	55.4	64.5
3	Midway	East Park Ave. to Hegan Ln.	63.9	56.0	57.8	65.4
4	East Park Ave.	East of Midway	64.6	56.7	58.5	66.1

Appendix D-3
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project # : 2004-032
Description: ATRC - Existing and Existing Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

	Roadway	*Segment Description*	*-- Distances to Traffic Noise Contours --*				
Segment	*Name*		*75*	*70*	*65*	*60*	*55*
Existing							
1	Hegan Ln.	East of East ATRC Access	8	17	37	79	170
2	Hegan Ln.	West of Midway	15	32	68	146	315
3	Midway	East Park Ave. to Hegan Ln.	17	36	78	168	362
4	East Park Ave.	East of Midway	19	40	86	186	401
Existing Plus Master Plan							
1	Hegan Ln.	East of East ATRC Access	8	18	39	84	180
2	Hegan Ln.	West of Midway	15	32	70	150	323
3	Midway	East Park Ave. to Hegan Ln.	17	37	79	171	369
4	East Park Ave.	East of Midway	19	41	88	190	410

Appendix E-1
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2004-032
Desciption: ATRC - Cumulative and Cumulative Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*ADT*	*Day %*	*Eve %*	*Night %*	*% Med. Trucks*	*% Heavy Trucks*	*Speed*	*Distance*
Cumulative Base										
1	Hegan Ln.	East of East ATRC Access	5,930	87		13	2	1	50	75
2	Hegan Ln.	West of Midway	14,950	87		13	2	1	50	75
3	Midway	East Park Ave. to Hegan Ln.	26,800	87		13	2	1	40	75
4	East Park Ave.	East of Midway	24,290	87		13	2	1	40	75
Cumulative Plus Master Plan										
1	Hegan Ln.	East of East ATRC Access	6,220	87		13	2	1	50	75
2	Hegan Ln.	West of Midway	15,240	87		13	2	1	50	75
3	Midway	East Park Ave. to Hegan Ln.	27,275	87		13	2	1	40	75
4	East Park Ave.	East of Midway	24,960	87		13	2	1	40	75

Appendix E-2
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project # : 2004-032
Description: ATRC - Cumulative and Cumulative Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	*Roadway Name*	*Segment Description*	*Autos*	*Medium Trucks*	*Heavy Trucks*	*Total*
Cumulative Base						
1	Hegan Ln.	East of East ATRC Access	62.1	52.8	54.0	63.1
2	Hegan Ln.	West of Midway	66.1	56.9	58.1	67.1
3	Midway	East Park Ave. to Hegan Ln.	65.8	57.9	59.7	67.3
4	East Park Ave.	East of Midway	65.4	57.5	59.3	66.9
Cumulative Plus Master Plan						
1	Hegan Ln.	East of East ATRC Access	62.3	53.1	54.2	63.3
2	Hegan Ln.	West of Midway	66.2	56.9	58.1	67.2
3	Midway	East Park Ave. to Hegan Ln.	65.9	58.0	59.8	67.4
4	East Park Ave.	East of Midway	65.5	57.6	59.4	67.0

Appendix E-3
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project # : 2004-032
Description: ATRC - Cumulative and Cumulative Plus Master Plan
Ldn/CNEL: Ldn
Hard/Soft: Soft

	Roadway	*Segment Description*	*-- Distances to Traffic Noise Contours --*				
Segment	*Name*		*75*	*70*	*65*	*60*	*55*
Cumulative Base							
1	Hegan Ln.	East of East ATRC Access	12	26	56	121	261
2	Hegan Ln.	West of Midway	22	48	104	224	483
3	Midway	East Park Ave. to Hegan Ln.	23	50	107	230	495
4	East Park Ave.	East of Midway	22	46	100	215	464
Cumulative Plus Master Plan							
1	Hegan Ln.	East of East ATRC Access	13	27	58	125	269
2	Hegan Ln.	West of Midway	23	49	105	227	489
3	Midway	East Park Ave. to Hegan Ln.	23	50	108	233	501
4	East Park Ave.	East of Midway	22	47	102	219	472

APPENDIX F

TRAFFIC IMPACT ANALYSIS

FOR

CSU-CHICO MASTER PLAN UPDATE

Chico, California

Prepared For:

QUAD-KNOPF, INC
One Sierragate Plaza, Suite 270C
Roseville, CA 95678

Prepared By:

kdANDERSON Transportation Engineers
3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

December 13, 2004

5600-37

CSU-Chico.rpt

TRAFFIC IMPACT ANALYSIS FOR
CSU-CHICO MASTER PLAN UPDATE
Chico, California

TABLE OF CONTENTS

December 13, 2004

KDA

TRAFFIC IMPACT ANALYSIS FOR
CSU-CHICO MASTER PLAN UPDATE
Chico, California

INTRODUCTION

This report summarizes **kdANDERSON Transportation Engineers**' analysis of the traffic impacts associated with implementing the **CSU-Chico 2004 Master Plan**. The 2004 plan will guide development and operation of the campus for the foreseeable future and identified key infrastructure and policies that may ultimately affect transportation and circulation in the area near CSU-Chico and throughout the City of Chico as a whole.

This report addresses the impacts of implementing plans for two separate but linked areas, as noted in Figure 1. The 2004 Master Plan describes improvements that will be made to the main campus located in downtown Chico. However, the Master Plan also describes programs and improvements that are planned for the Agricultural Center located south of CSU-Chico on Hegan Road.

The analysis which is summarized herein deals with current traffic conditions in the area of the campus, with conditions occurring with immediate implementation of planned improvements, and with cumulative conditions occurring in the future with other development in Chico, continuing regional traffic growth (i.e., year 2025 conditions) and full campus occupancy at the enrollment levels anticipated under the Master Plan.

Study Methodology

The methodology used to prepare this traffic impact study follows an approach that is recognized by members of the traffic engineering profession and is consistent with CEQA, Caltrans and City of Chico guidelines for traffic studies addressing new development.

The first phase of the study included the collection of traffic data and the analysis of that data to determine existing operating conditions. Available data was reviewed and new manual traffic counts were taken during the morning and evening peak traffic hour to develop turning movements at the 16 existing study intersections in the vicinity of the school site. The *2000 Highway Capacity Manual (HCM)* was used to analyze this data to describe the operational characteristics of major intersections near the school. Standards employed by the City of Chico were used to identify the capacity and Level of Service. Current pedestrian, bicycle and transit facilities were also described.

The second phase of the analysis involved estimating trip generation for the planned project. The Institute of Transportation Engineers' publication *Trip Generation-Seventh Edition* was used as an initial basis to determine the trips to be generated by implementation of the Master Plan under the identified enrollment levels.

The third phase of the study determined the distribution of trips into and out of the project and adjacent streets based primarily on the location of anticipated parking as well as the location of student housing, employment centers, etc.

KDA

The fourth phase was to assign the project trips to the street network and to add these new trips to the current background day traffic volumes and to evaluate resulting traffic operations.

The fifth study phase addresses cumulative impacts of implementing the master plan. Because the proposed Master Plan replaces a previous planning document, the cumulative analysis addresses two future scenarios: 1) year 2025 conditions with enrollment under the previous master Plan (i.e., 16,000 students) and 2) year 2025 conditions with the new Master Plan enrollment level (i.e., 20,000 students. The current version of the Chico regional travel demand forecasting model was used to create the baseline cumulative condition, and the incremental increase in traffic associated with another 4,000 students was manually assigned to create the cumulative plus project condition.

Project Description

For the purpose of this Traffic Impact Study, the project is defined as the operation of CSU-Chico with an ultimate enrollment of 20,000 students and the development of two specific infrastructure improvements that could impact local circulation.

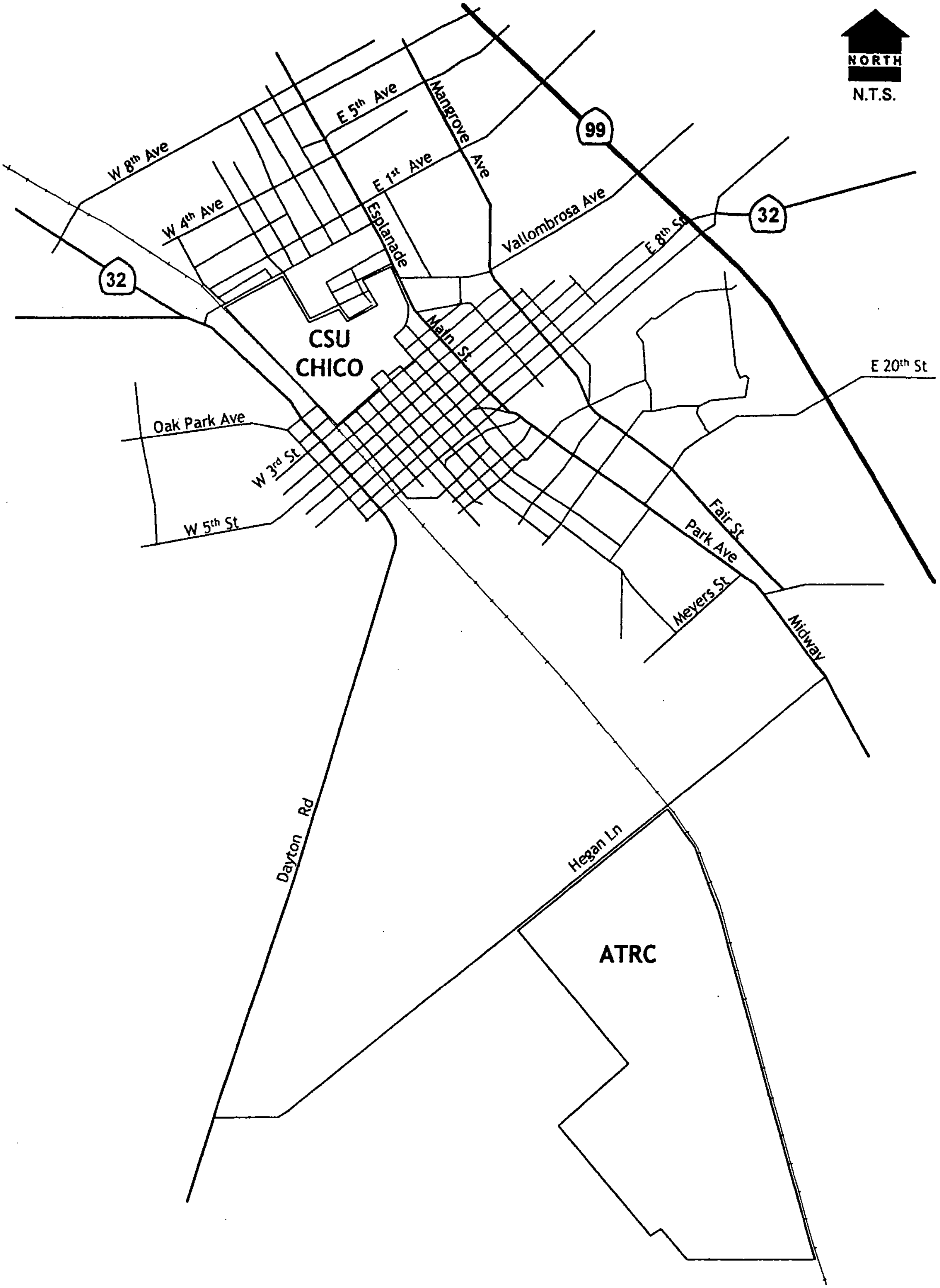
Enrollment. Over the last few years the total enrollment (i.e., body count) at CSU-Chico has been about 16,000 students. Measured in this fashion, (i.e., head count), the current Master Plan also accommodates about 16,000 students. The new Master Plan is intended to accommodate an enrollment of 20,000.

Parking. The current campus parking supply has been quantified at 2,211 spaces, or about 0.14 spaces for every enrolled student. The proposed Master Plan envisions the development of new parking facilities as well as the elimination of some existing on-site parking. Major changes to parking include the development of a multi-level parking structure along 2nd Street in the area of Ivy – Cherry Street, as well development of a multi-level parking structure in the vicinity of new student housing proposed off of Sacramento Street. Under the proposed Master Plan, the on-site parking supply is to increase by about 1,436 spaces to 3,647 spaces, or 0.18 spaces for each enrolled student under the new plan.

Circulation System Modifications. The circulation system in the vicinity of the CSU-Chico campus will be relatively unchanged under the proposed master Plan, but some local changes are planned. In the area of the new parking structure Chestnut Street is to be closed between 2nd Street and 3rd Street. Full or partial closure of First Street between Ivy Street and Orange or Cedar Street is also proposed. Rio Chico Way will likely be closed as well.

Student Housing. The Master Plan includes development of new on-campus student housing in the area of Warner Avenue south of Sacramento Street. Approximately 1,300 bed spaces are planned in this area.

Agricultural Center. Additional classroom space is planned, and a special events center accommodating 3,000 persons is proposed.



KD Anderson
Transportation Engineers

VICINITY MAP

5600-37 12/13/2004

figure 1

EXISTING SETTING

Automobile Circulation

Study Area. After a preliminary investigation of the existing traffic circulation patterns, it was determined that the traffic analysis should investigate the operational characteristics of the following intersections on the streets serving the CSU-Chico campus and the ATRC:

1. Nord Avenue (SR 32) / West Sacramento Avenue
2. Sacramento Ave / Warner Avenue
3. Esplanade / East 1st Avenue
4. Esplanade / Sacramento Avenue
5. Warner Avenue / Legion Avenue
6. Walnut Street (SR 32) / West 2nd Street
7. West 2nd Street / Cherry Street
8. West 2nd Street / Ivy Street
9. West 2nd Street / Hazel Street
10. West 2nd Street / Chestnut Street
11. West 2nd Street / Normal Avenue
12. Broadway Street / 2nd Street
13. Main Street / 2nd Street
14. Park Avenue / Midway
15. Midway / Hegan Lane
16. Hegan Lane / East ATRC Access

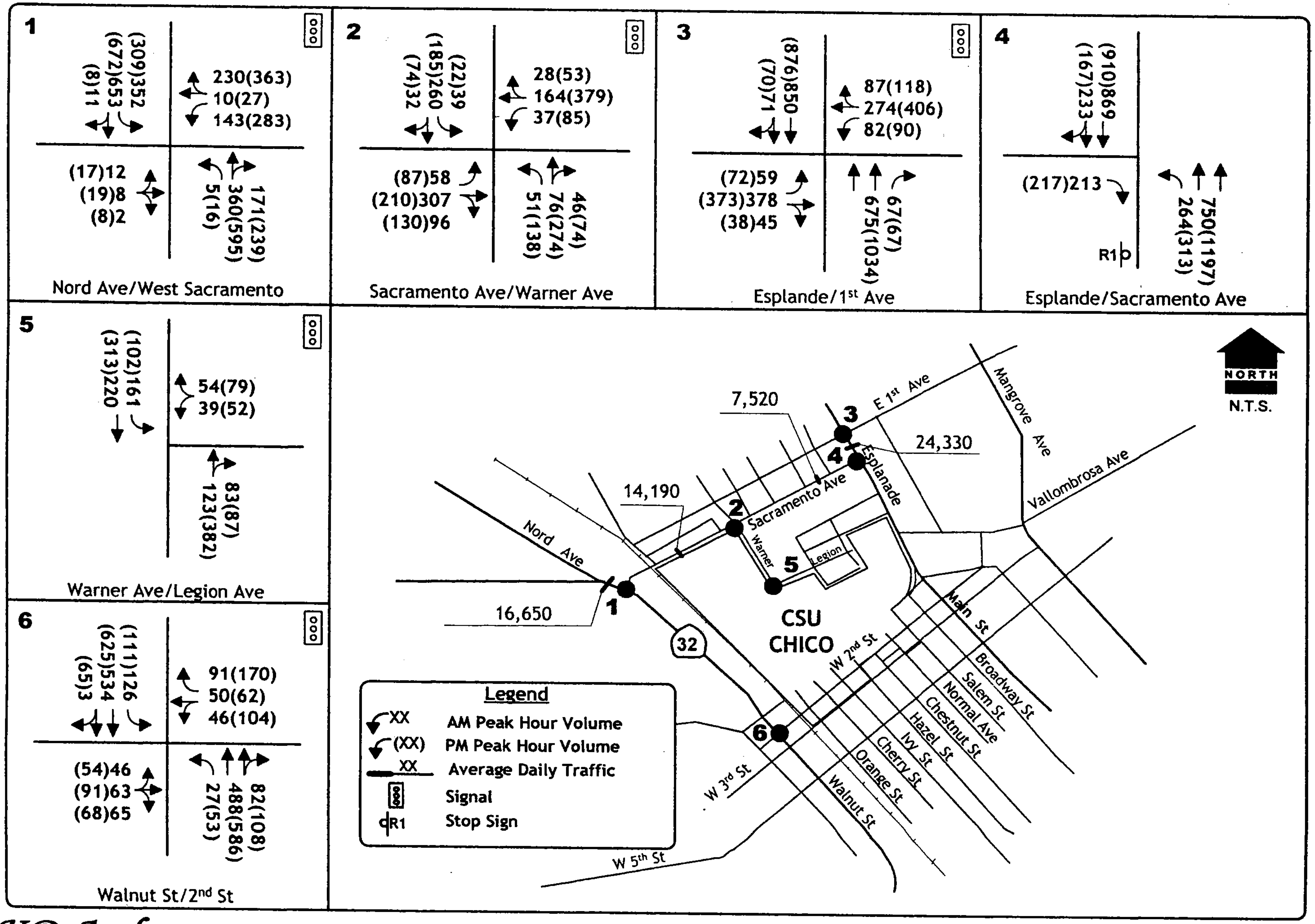
The locations of these intersections along with the existing road network are shown on Figures 2a-2c.

The text that follows describes the circulation facilities serving the CSU-Chico campus.

Esplanade – Main Street – Broadway. The Esplanade, Broadway and Main Street are arterial streets that together provide access to the eastern side of the CSU-Chico campus. The Esplanade is a four lane street with primary access via signalized intersections. On street parking is prohibited on the Esplanade. Main Street – Broadway form a north-south one-way couplet that traverses the downtown area. Access occurs via closely spaced signalized intersections, and on-street parking is permitted in many locations.

Nord Avenue – Walnut Street are north-south arterial streets that serve the area west of the CSU-Chico campus. Nord Avenue and Walnut Street are two lane facilities.

Sacramento Avenue is an east-west minor arterial street that provides access to the north end of the CSU-Chico campus and to Chico High School. Sacramento Street begins at an intersection on Nord Avenue and extends easterly to an intersection on The Esplanade. Sacramento Street is a two-lane facility with on street parking permitted.

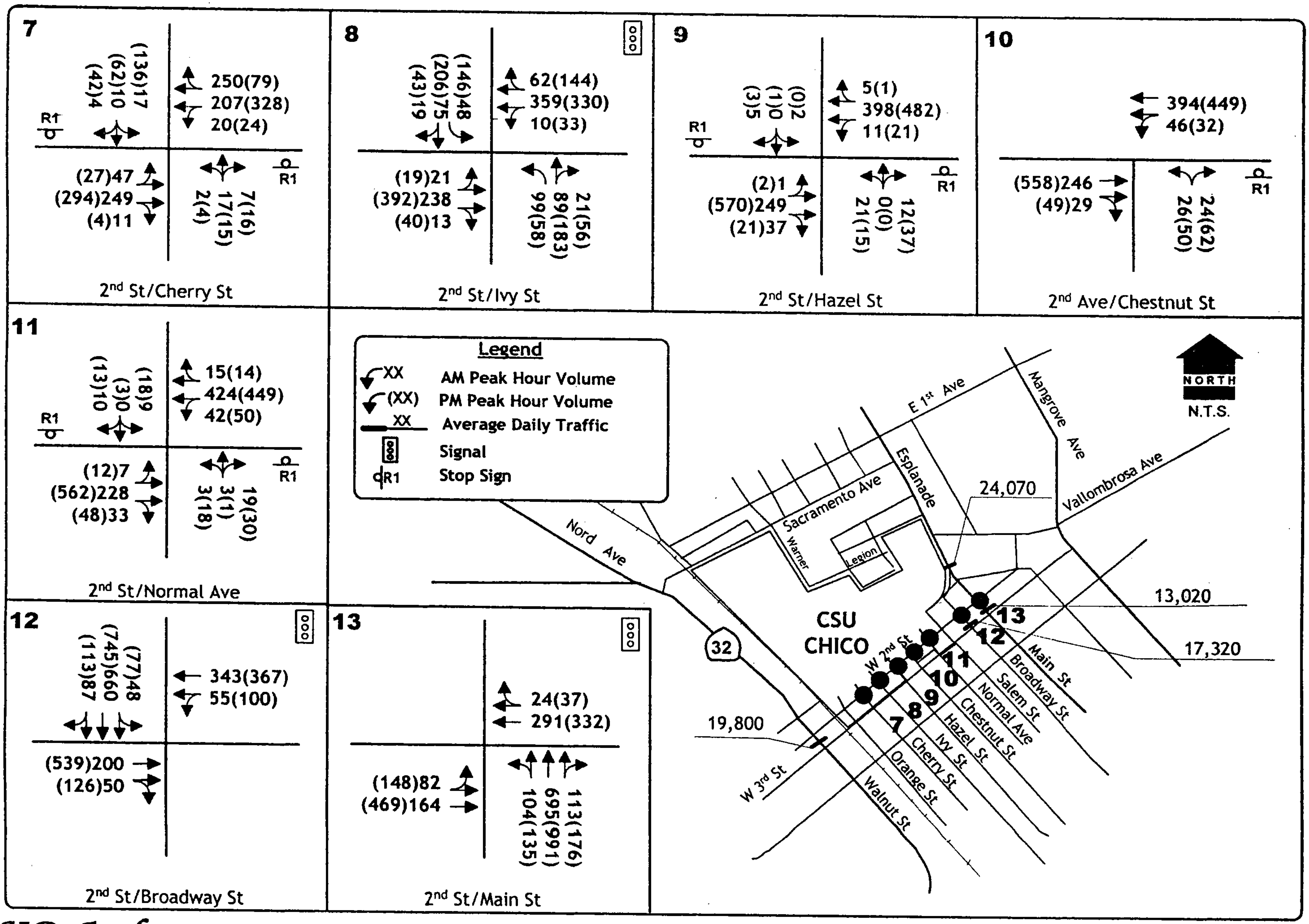


KD Anderson
Transportation Engineers

5600-37 12/13/2004

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 2a

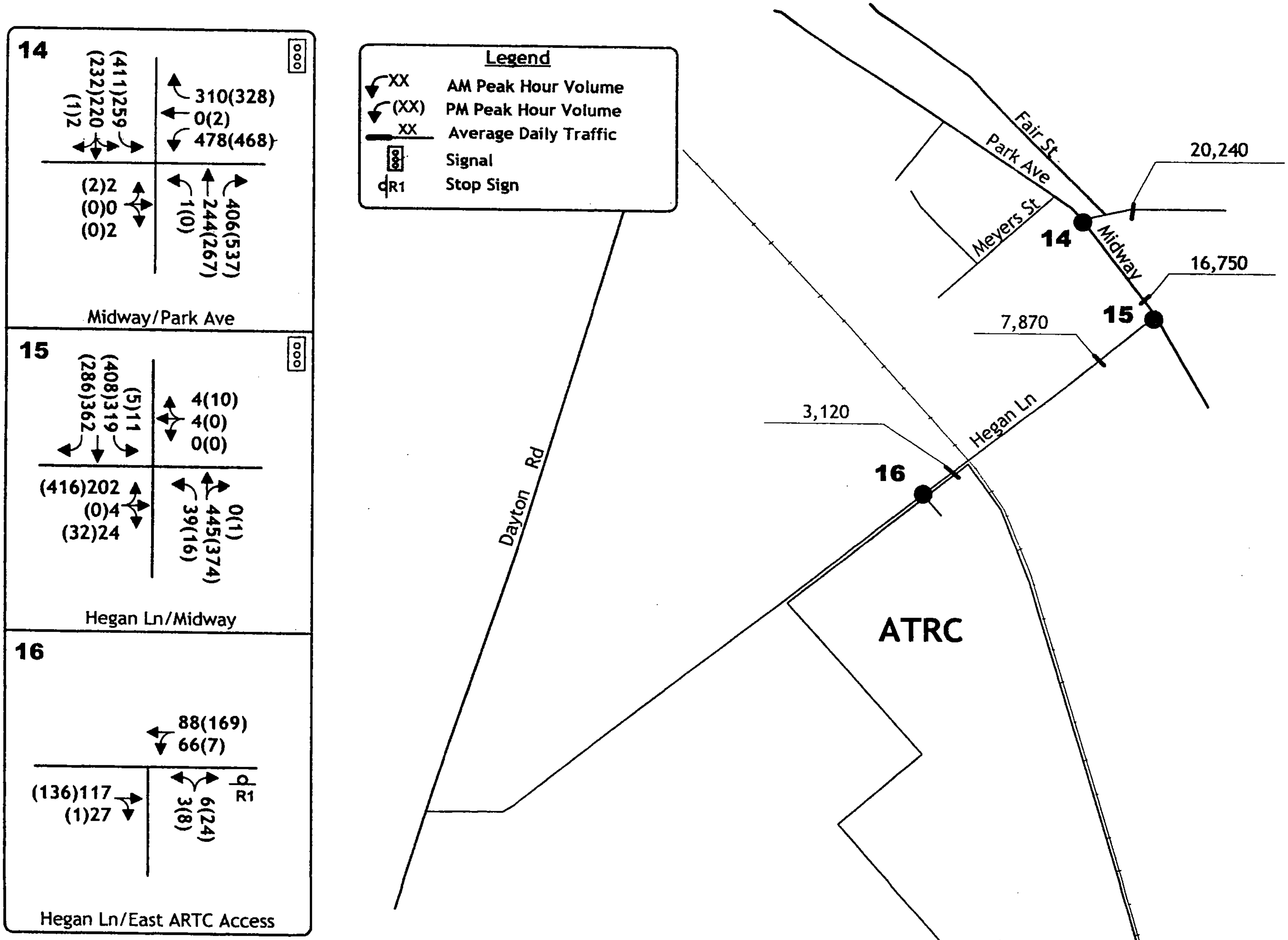


KD Anderson
Transportation Engineers

5600-37 12/13/2004

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 2b



KD Anderson
Transportation Engineers

EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37

12/13/2004

figure 2c

West 2nd Street is designated an arterial street in the City of Chico General Plan Circulation Element. West 2nd Street extends easterly from an intersection on Walnut Street across the south end of the CSU-Chico campus to the Main Street – Broadway Couplet and continues to an intersection with Mangrove Avenue. Through the study area West 2nd Street is a four-lane facility with left turns permitted from the inside through lanes.

Warner Street is a north-south minor arterial street that traverses the center of the CSU-Chico campus. Warner Street is a two lane facility.

The Midway is a north-south minor arterial street that extends southerly from Chico to the community of Durham. This is a two lane street.

Hegan Lane is an east-west collector road that serves the area near ATRC. This two lane rural road connects Dayton Road on the west with The Midway on the east.

Level of Significance. A traffic impact is considered significant if it renders an acceptable Level of Service on a street segment or at a signalized intersection, or if it worsens already unacceptable conditions on a street segment or at a signalized intersection. Table 1 presents the characteristics of each Level of Service grade based on analysis methodologies accepted by the City of Chico.

Policy T-G-11 and T-G-12 from the City of Chico General Plan Transportation Element identify the Level of Service (LOS) goals for the City of Chico as follows:

T-G-11 Strive to maintain traffic LOS C on residential streets and LOS D or better on arterial and collector streets, at all intersections and on principal arterials in the CMP during peak hours.

T-G-12 Accept LOS E for built-out areas served by transit after finding that:

- *There is no practical and feasible way to mitigate the lower Level of Services; and*
- *The uses resulting in the lower Level of Service are of clear, overall public benefit.*

Current Traffic Volumes and Levels of Service. New traffic volumes counts were conducted on study area streets at intersections on November 18, 2004 for use in this study. Existing intersection Levels of Service at study intersections are shown on Table 2. These calculations are based on the methodologies contained in the 2000 Highway Capacity Manual and include assumptions relating to the effects of signal timing, pedestrian and bicycle traffic. Based on instruction from the City of Chico, these calculations assume general Peak Hour Factors for overall conditions during the a.m. and p.m. peak hour (i.e., PHF of 0.90 and 0.95, respectively). Because campus traffic can be concentrated into short time periods immediately before/after classes, conditions at these times may be worse than are projected for the peak hour as a whole.

As shown in Table 2, existing traffic volumes are indicative of LOS D or better conditions on arterial and collector streets. Thus current Levels of Service at all study intersections meet City and Caltrans minimum standards.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. v/c $\leq$ 0.60 Average Delay < 10 sec / veh	Little or no delay. Delay $\leq$ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. 0.60 < v/c $\leq$ 0.70 Average Delay > 10 sec / veh and $\leq$ 20 sec / veh	Short traffic delays. Delay > 10 sec/veh and $\leq$ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. 0.70 < v/c $\leq$ 0.80 Average Delay > 20 sec / veh and $\leq$ 35 sec / veh	Average traffic delays. Delay > 15 sec/veh and $\leq$ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. 0.80 < v/c $\leq$ 0.90 Average Delay > 35 sec / veh and $\leq$ 55 sec / veh	Long traffic delays. Delay > 25 sec/veh and $\leq$ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). 0.90 < v/c $\leq$ 1.00 Average Delay > 50.0 sec / veh and $\leq$ 80.0 sec / veh	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and $\leq$ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. v/c > 1.00 Average Delay > 80 sec / veh	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 1980 Interim Materials in Highway Capacity, Circular 212, Transportation Research Board (TRB).
2000 Highway Capacity Manual, Transportation Research Board (TRB) Special Report 209.

KDA

TABLE 2
EXISTING PEAK HOUR INTERSECTION LEVELS OF SERVICE

		A.M. Peak Hour		P.M. Peak Hour	
Intersection	**Control**	**Average Delay**	**LOS**	**Average Delay**	**LOS**
1. Nord Avenue / Sacramento Street	Signal	23.7 sec	C	47.2 sec	D
2. Sacramento Ave / Warner Avenue	Signal	27.5 sec	C	36.4 sec	D
3. Esplanade / East 1st Street	Signal	20.5 sec	C	22.6 sec	C
4. Esplanade / Sacramento Street					
(overall)	EB Stop	(2.0 sec)	(A)	(3.6 sec)	(A)
NB left		18.0 sec		18.2 sec	
EB approach		22.6 sec		20.4 sec	
5. Warner Avenue / Legion Avenue	Signal	9.5 sec	A	8.3 sec	A
6. Walnut Avenue / West 2nd Street	Signal	17.2 sec	B	18.1 sec	B
7. West 2nd Street / Cherry Street					
(overall)	NB/SB Stop	(1.8 sec)	(A)	(12.2 sec)	(B)
EB left		8.3 sec		8.3 sec	
WB left		7.9 sec		8.0 sec	
NB approach		16.9 sec		15.6 sec	
SB approach		16.8 sec		48.4 sec	
8. West 2nd Street / Warner Street / Ivy Street	Signal	11.7 sec	B	13.7 sec	B
9. West 2nd Street / Hazel Street					
(overall)	NB/SB Stop	(0.8 sec)	(A)	(0.9 sec)	(A)
EB left		8.3 sec		8.5 sec	
WB left		8.0 sec		8.9 sec	
NB approach		13.4 sec		15.7 sec	
SB approach		11.7 sec		14.3 sec	
West 2nd Street / Chestnut Street					
(overall)	NB Stop	(1.3 sec)	(A)	(2.1 sec)	(A)
WB left		8.1 sec		9.0 sec	
NB approach		13.0 sec		19.4 sec	
West 2nd Street / Normal Avenue					
(overall)	NB/SB Stop	(1.2 sec)	(A)	(1.8 sec)	(A)
EB left turn		8.3 sec		8.5 sec	
WB left turn		7.9 sec		9.1 sec	
NB approach		11.3 sec		19.3 sec	
SB approach		13.6 sec		21.5 sec	
12. West 2nd Street / Broadway	Signal	13.5 sec	B	14.7 sec	B
13. West 2nd Street / Main Street	Signal	12.8 sec	B	15.6 sec	C
14. Midway / Park Avenue	Signal	31.3 sec	C	29.9 sec	C
15. Midway / Hegan Lane	Signal	16.5 sec	B	22.2 sec	C
16. Hegan Lane / East ATRC Access					
(overall)	NB Stop	(1.9 sec)	(A)	(1.0 sec)	(A)
WB left turn		7.7 sec		7.5 sec	
NB approach		9.7 sec		9.5 sec	

The volume of traffic occurring on study area roads has also been monitored. Table 3 presents the results of new daily traffic counts conducted in November 2004 for this study.

TABLE 3
CURRENT DAILY TRAFFIC VOLUMES

Street	Location		Classification	Daily Volume
	From	To		
Nord Avenue	West Sacramento Ave	East Sacramento Ave	Arterial	16,650
Sacramento Avenue	Nord Avenue	Warner Avenue	Minor Arterial	14,190
	Warner Avenue	Esplanade	Minor Arterial	7,520
Esplanade	East 1st Ave	Sacramento Ave	Arterial	24,330
	Vallombrosa Ave	West 1st Street	Arterial	24,070
Walnut Street	West 1st Street	West 2nd Street	Arterial	19,800
Broadway	West 2nd Street	West 3rd Street	Arterial	17,320
Main Street	West 2nd Street	West 3rd Street	Arterial	13,020
Park Avenue	Midway	SR 99	Arterial	20,240
Midway	Park Avenue	Hegan Lane	Minor Arterial	16,750
Hegan Lane	Dayton Road	Railroad	Collector	3,120
	railroad	Midway	Collector	7,870

Alternative Transportation Modes

Bicycles. The bicycle is an important mode of transportation for CSU-Chico students, faculty, and staff. The Master Plan notes that about 30% of CSU-Chico students use bicycles as their primary form of travel to the campus. The spring 2000 CSU-Chico Bicycle Survey recorded 4,934 bicycle parking spaces on campus, which represents about 1.1 spaces per regular bicycle user. These spaces are distributed throughout the campus and are generally associated with classroom facilities and other major student destinations.

The City of Chico General Plan notes the locations of existing and planned bicycle facilities in the area of the campus. Nord Avenue, Walnut Street, Sacramento Avenue, and Warner Avenue are designated Class II facilities, while the railroad corridor adjoining SR 32 is designated a Class I facility.

Transit. Chico Area Transit System (CATS) serves the urban Chico area, and service in the vicinity of CSU-Chico is readily available. The CATS Downtown Transit Center is located at 2nd Street / Salem Street. Routes 8 and 9 (Student Shuttle) traverse the campus along Warner Avenue on 30-minute headways, while Route 3 travels on Sacramento Avenue on 60-minute headways.

KDA

The Butte County Transit (BCT) system provides interregional bus service connecting various cities in Butte County. BCT Routes 1 and 2 provide service from Downtown Chico to Paradise and to Oroville, respectively.

The University, in cooperation with the Associated Student Government, the City of Chico, and the County of Butte, provides free student access to all CATS and BCT buses. Based on data provided by the University, approximately 250,000 free rides per year and 1,000 free rides per day are made as part of this program.

Parking

The supply of parking available to students, faculty and staff is an important issue affecting CSU-Chico and its neighbors. The *Executive Summary – Draft California State University, Chico Parking Needs Study (2004)* revealed that about 2,211 parking spaces are available in on-campus parking facilities, including 2,143 automobile spaces and 68 motorcycle spaces. These spaces are distributed across a series of 34 parking facilities in various locations throughout the campus ranging in size from three to 305 spaces and one parking structure containing 654 spaces.

That report concluded that the on-campus parking supply is not adequate to accommodate campus parking demands and that students, staff, and visitors also park on city streets surrounding the campus. A utilization survey associated with the study indicated that about 88% of the total supply was occupied during the heaviest demand hour, with ratios of over 85% experienced over most of the day. These demand ratios above 85% are indicative of conditions that are considered to be "fully utilized", due to the time involved in locating a vacant spaces among the various parking areas.

The City of Chico commissioned the *Downtown Parking Management and Implementation Study* in 2003. That report addressed conditions in the area bounded by Normal Avenue on the west, 1st Street on the north, Orient Street on the east, and 9th Street on the south. Peak occupancy ratios of over 90% were observed in public lots and along streets in the area between Normal Avenue and Main Street south of 1st Street. These ratios are indicative of areas that are "fully utilized".

The extent to which the lack of on-campus parking spills over into the downtown area is difficult to quantify. The *Executive Summary – Draft California State University, Chico Parking Needs Study (2004)* suggests that about 305 downtown spaces may be used as overflow student / staff parking.

PROJECT IMPACTS

To evaluate the impacts of implementing the Master Plan on traffic conditions in the project area it is necessary to first identify the characteristics of the project with regard to automobile, pedestrian, and bicycle traffic and to subsequently superimpose project traffic onto the study area circulation system. The immediate impacts of the Master Plan have been described in terms of "Existing Plus Project" conditions, and Year 2025 conditions with and without implementation of the Master Plan are addressed under cumulative impacts.

Project Characteristics

Trip Generation - Regular. Implementation of the Master Plan will provide the opportunity for additional students to attend CSU-Chico, either at the main campus or at the ATRC. Trip generation rates published by the Institute of Transportation Engineers (ITE) were used to quantify the amount of traffic that may be associated with this increase in enrollment. While ITE rates may tend to ignore the high level of bicycle and pedestrian usage inherent to CSU-Chico, these rates are assumed in the City of Chico traffic model and have been chosen to provide consistency with that forecasting tool. Applicable trip generation rates are presented in Table 4, and the trip generation estimates presented in Table 5 were the result.

As shown, increasing the enrollment at CSU-Chico from the current level of about 16,000 students to the planned capacity of 20,000 students may generate 9,520 daily trips, with about 840 trips occurring in the a.m. and p.m. peak hour. The assumed increase in enrollment at the ATRC would be included in that total and could result in about 297 new daily trips to that facility, with about 26 new trips in the peak hours.

Trip Generation – ATRC Special Events. The Master Plan envisions development of a 45,000 sf Events Center at the ATRC. This facility would have the capacity to seat up to 2,000 persons for a wide range of special events, including industry based farm equipment shows, equine events, 4H and FFA activities, etc.

The trip generation associated with the use of the Events Center would vary greatly based on many factors, including the actual attendance, the operational schedule for particular events, the level of bussing provided, average automobile occupancy, etc. The schedule for these types of events would not necessarily result in traffic to and from the site during peak commute hours.

For this analysis a "worst case" p.m. peak hour event has been assessed. This analysis assumes that a maximum occupancy event was held with typical (i.e., 2.0 persons per vehicle) automobile occupancy that is indicative of limited bussing. This analysis assumes that 100% of attendees exit the site during the p.m. peak hour. Under these circumstances about 1,000 p.m. peak hour trips could be generated.

TABLE 4
TRIP GENERATION RATES

Land Use (ITE Code)	Daily Rate (per unit)	HOURLY RATES (per student)					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
University (550)	2.38 / student	0.17	0.04	0.21	0.06	0.15	0.21

TABLE 5
TRIP GENERATION ESTIMATES

Land Use (ITE Code)	Enrollment	Daily Trips	Peak Hour Trips					
			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Total Campus								
Current Enrollment / Master Plan	16,000	38,080	2,720	640	3,360	960	2,400	3,360
Proposed Master Plan	20,000	47,600	3,400	800	4,200	1,200	3,000	4,200
Difference over Existing / Current Master Plan	4,000	9,520	680	160	840	240	600	840
ATRC – Regular Operations								
Existing Enrollment	375	893	64	15	79	23	56	79
Proposed Master Plan	500	1,190	85	20	105	30	75	105
Difference	125	297	21	5	26	7	19	26
ATRC – Events Center								
Worst Case Special Event						100	1,000	1,100

Trip Distribution. The next task in the evaluation is to determine the distribution of project trips. The regional distribution of trips generated by the increased enrollment at the campus will be primarily dependent on such factors as the location of student and faculty housing. To identify applicable distribution assumptions a "select link" analysis was performed using the City of Chico regional travel demand forecasting model. Trips generated by the campus were isolated from the balance of projected traffic volumes used to identify the percentile distribution presented in Table 6.

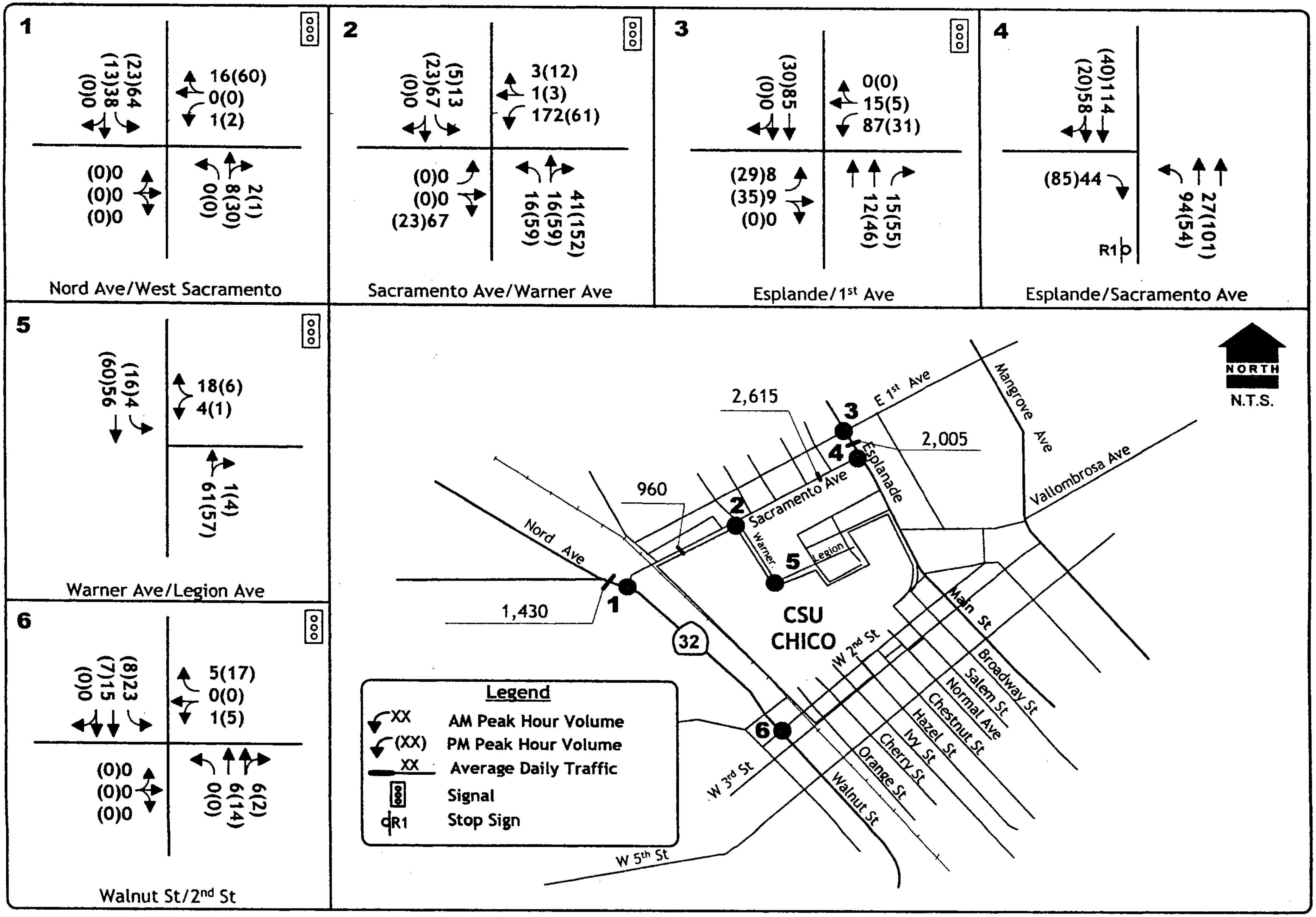
TABLE 6
PROJECT TRIP DISTRIBUTION

Route	Percent of Total Trips
North via Nord Avenue North of Sacramento Avenue	15%
North via local streets between Nord Avenue and the Esplanade	15%
North via the Esplanade	12.5%
East via East 1st Avenue	15%
East via Vallombrosa Avenue	5%
East via local streets between Vallombrosa Avenue and Dead Slough	10%
South via Main Street – Broadway	22%
South via local streets between Walnut Avenue and Broadway	4%
South via Walnut Avenue	1.5%
Total	100%

Trip Assignment. The assignment of new trips to the local street system will be dependent many factors such as the location of available student / staff parking. In this case, the Master Plan anticipates the creation of two parking garages to be developed in the area south of West 2nd Street between Normal Avenue and Hazel Street and in the area off of Warner Avenue near planned student housing. For this study new trips generated by increased enrollment have been assigned to the local street system to/from these two general locations. The resulting "project only" trips assignment is illustrated in Figures 3a-3c.

As suggested by the Master Plan, development of the 2nd Street parking structure may involve closure of Chestnut Street between 2nd Street and 3rd Street. The redistribution of existing traffic associated with this closure has been assumed in this analysis.

KDA

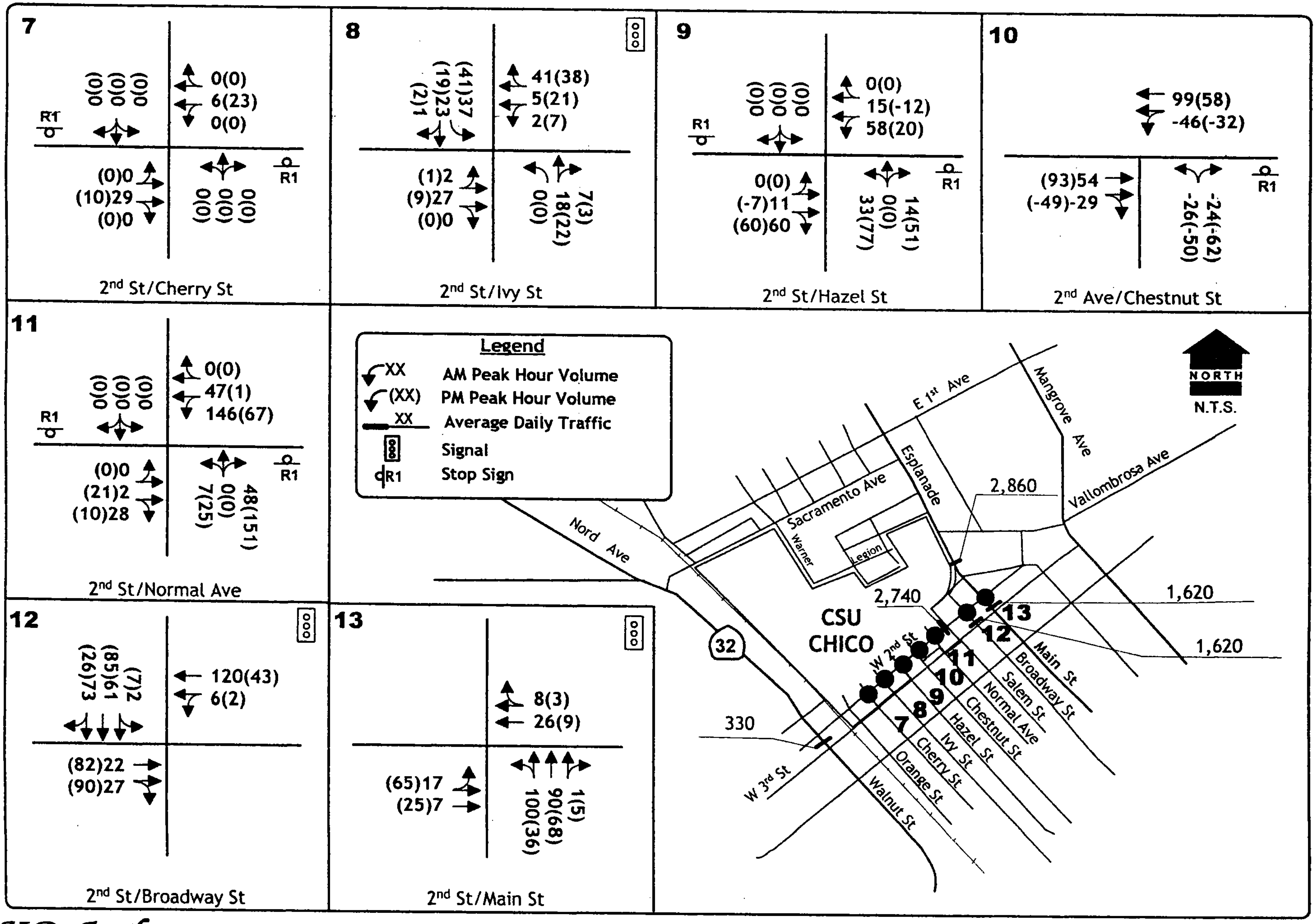


KD Anderson
Transportation Engineers

MASTER PLAN ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 3a

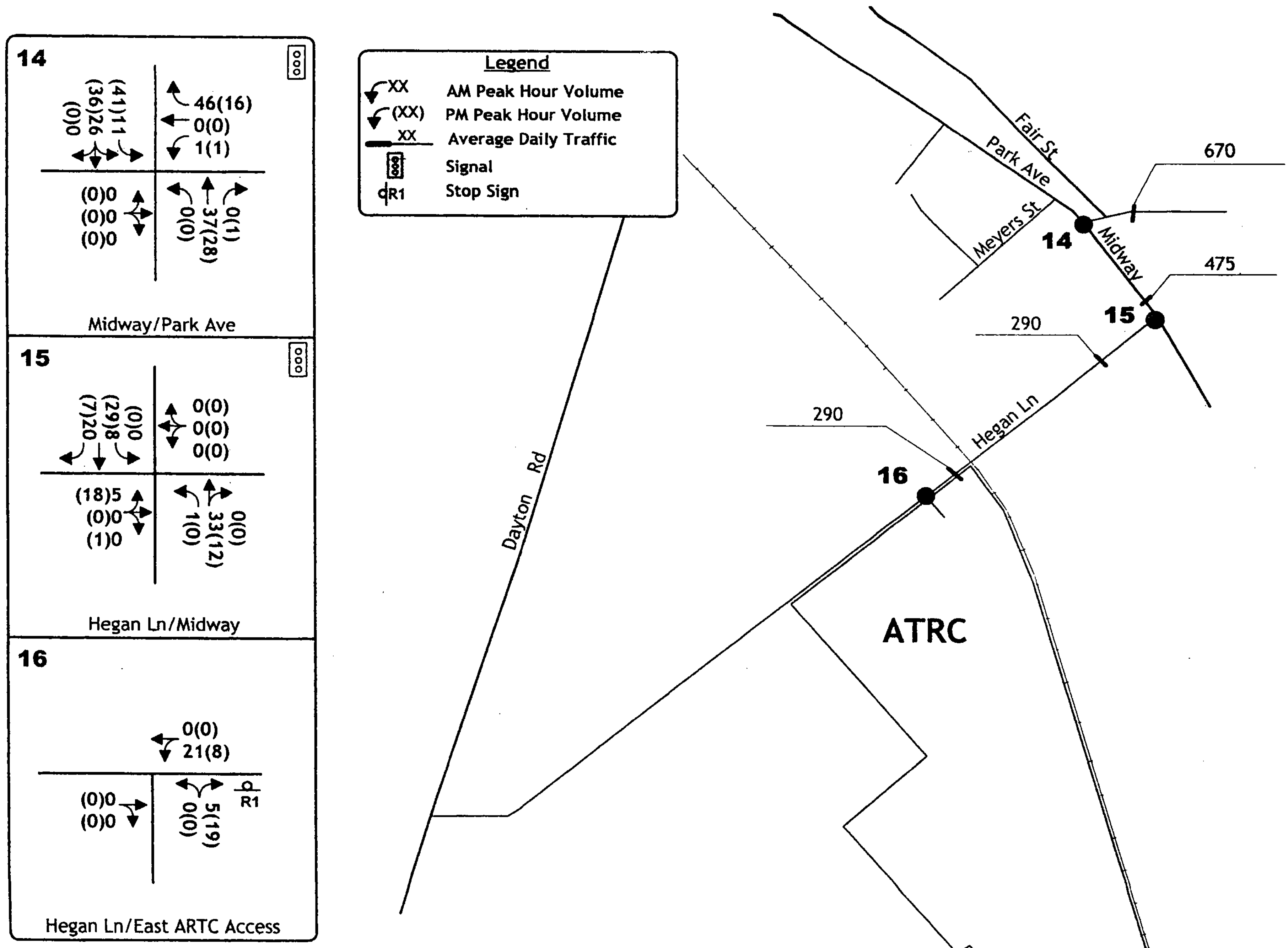


KD Anderson
Transportation Engineers

5600-37 12/13/2004

MASTER PLAN ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 3b



KD Anderson
Transportation Engineers

MASTER PLAN ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 3c

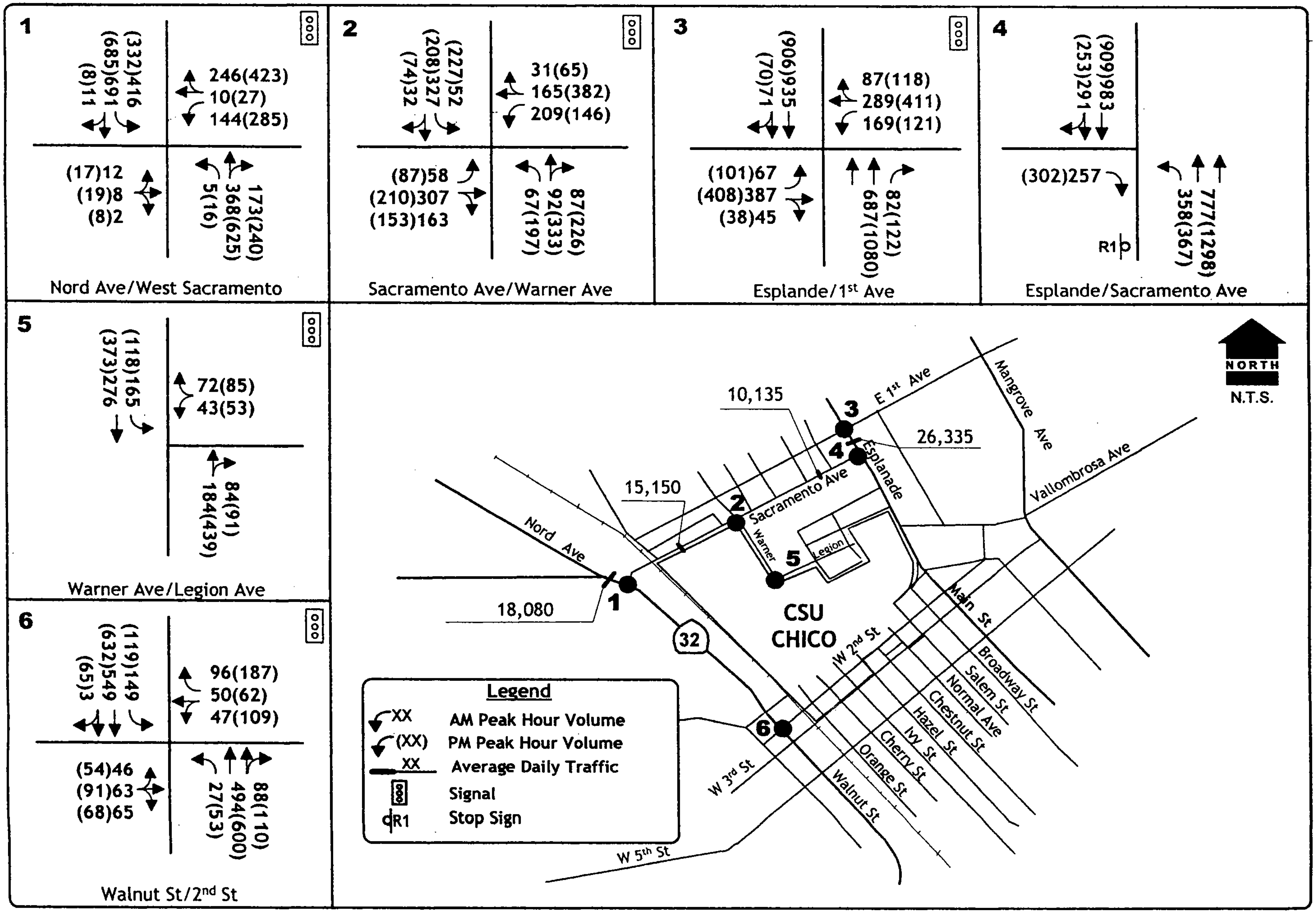
Existing Plus Project Level of Service

While implementation of the Master Plan will not immediately result in increased enrollment and additional traffic, for the purpose of this analysis an "existing plus project" scenario has been created assuming that all Master Plan changes were made and enrollment increased. "Existing Plus Project" traffic volumes are shown in Figures 4a-4c. The results of the Level of Service analysis for this scenario are shown in Table 7 and are further described in the following text.

Regular Operations. As indicated in Table 7, satisfactory traffic conditions (i.e., LOS D or better) are projected at most of the study intersections with and without implementation of the Master Plan. However, conditions in excess of LOS D are projected at one location.

At the **Nord Avenue (SR 32) / West Sacramento Avenue intersection** Level of Service E is projected during the p.m. peak hour with implementation of the Master Plan. This exceeds the City's LOS D threshold. Review of the geometry of the intersection and of the closely spaced intersection to the north suggests that widening of SR 32 to provide a four lane section, and/or the development of dual left turn lanes would likely be needed to deliver LOS D or better conditions. Given the level of existing development in this area, such improvements may not be feasible. As the City of Chico General Plan permits acceptance of LOS E at locations that are served by transit but no feasible mitigation exists, projected conditions at this location are not significant.

KDA

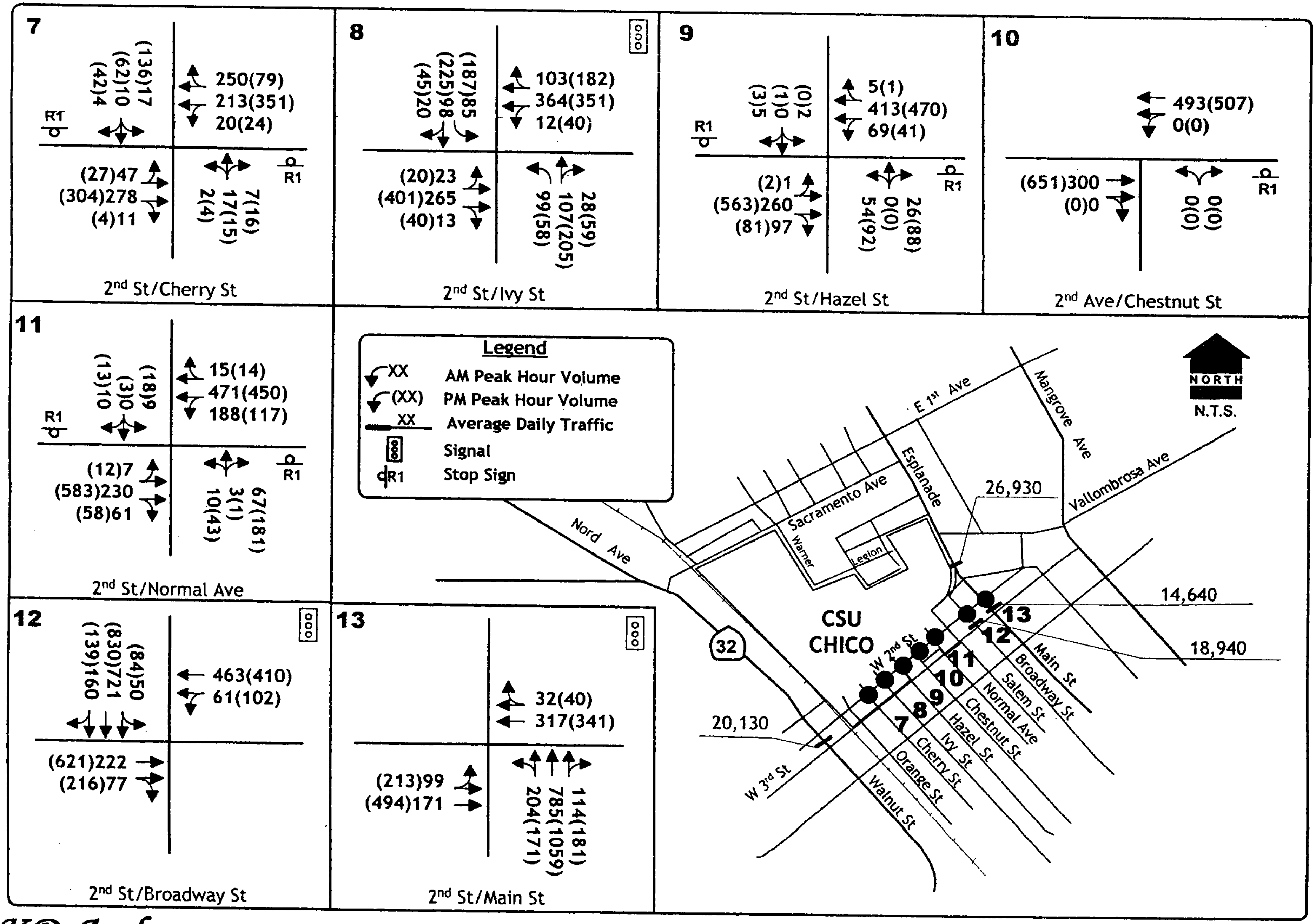


KD Anderson
Transportation Engineers

EXISTING PLUS MASTER PLAN TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

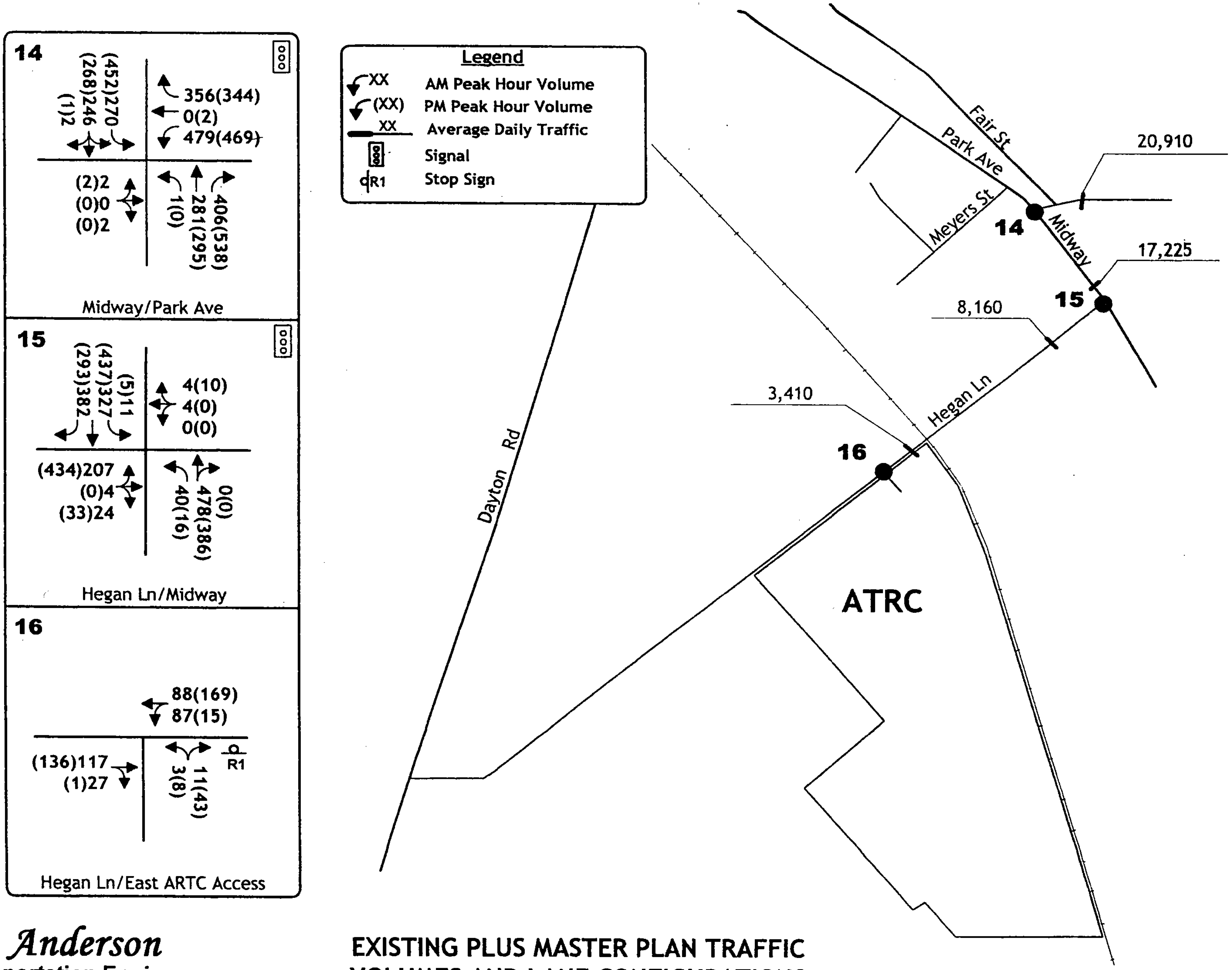
figure 4a



KD Anderson
Transportation Engineers
5600-37 12/13/2004

EXISTING PLUS MASTER PLAN TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 4b



KD Anderson
Transportation Engineers

EXISTING PLUS MASTER PLAN TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 4c

TABLE 7
PEAK HOUR INTERSECTION LEVELS OF SERVICE FOR EXISTING PLUS PROJECT SCENARIO

Intersection	Control	A.M. Peak Hour				P.M. Peak Hour			
		Existing		Ex Plus Project		Existing		Ex Plus Project	
		Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
1. Nord Avenue / Sacramento Street	Signal	23.7 sec	C	27.4 sec	C	47.2 sec	D	62.0 sec	E
2. Sacramento Ave / Warner Avenue	Signal	27.5 sec	C	37.3 sec	D	36.4 sec	D	49.1 sec	D
3. Esplanade / East 1st Street	Signal	20.5 sec	C	23.6 sec	C	22.6 sec	C	24.2 sec	C
4. Esplanade / Sacramento Street									
(overall)	EB Stop	(2.0 sec)	(A)	(9.1 sec)	(A)	(3.6 sec)	(A)	(5.9 sec)	(A)
NB left		18.0 sec		40.1 sec		18.2 sec		24.0 sec	
EB approach		22.6 sec		38.9 sec		20.4 sec		32.4 sec	
5. Warner Avenue / Legion Avenue	Signal	9.5 sec	A	9.8 sec	A	8.3 sec	A	8.1 sec	A
6. Walnut Avenue / West 2nd Street	Signal	17.2 sec	B	17.5 sec	B	18.1 sec	B	18.4 sec	B
7. West 2nd Street / Cherry Street									
(overall)	NB/SB Stop	(1.8 sec)	(A)	(1.8 sec)	(A)	(12.2 sec)	(B)	(13.5 sec)	(B)
EB left		8.3 sec		8.5 sec		8.3 sec		8.4 sec	
WB left		7.9 sec		7.9 sec		8.0 sec		8.0 sec	
NB approach		16.9 sec		17.5 sec		15.6 sec		16.1 sec	
SB approach		16.8 sec		17.3 sec		48.4 sec		55.6 sec	
8. West 2nd Street / Warner Street / Ivy Street	Signal	11.7 sec	B	12.2 sec	B	13.7 sec	B	14.3 sec	B
9. West 2nd Street / Hazel Street									
(overall)	NB/SB Stop	(0.8 sec)	(A)	(2.4 sec)	(A)	(0.9 sec)	(A)	(6.1 sec)	(A)
EB left		8.3 sec		8.4 sec		8.5 sec		8.5 sec	
WB left		8.0 sec		8.4 sec		8.9 sec		9.2 sec	
NB approach		13.4 sec		19.4 sec		15.7 sec		43.1 sec	
SB approach		11.7 sec		13.0 sec		14.3 sec		15.1 sec	

KDA

TABLE 7 (Cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE FOR EXISTING PLUS PROJECT SCENARIO

		A.M. Peak Hour				P.M. Peak Hour			
		Existing		Ex Plus Project		Existing		Ex Plus Project	
Intersection	Control	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
10. West 2nd Street / Chestnut Street (overall) WB left NB approach	NB Stop	(1.3 sec) 8.1 sec 13.0 sec	(A)	Not applicable		(2.1 sec) 9.0 sec 19.4 sec	(A)	Not applicable	
11. West 2nd Street / Normal Avenue (overall) EB left turn WB left turn NB approach SB approach	NB/SB Stop	(1.2 sec) 8.3 sec 7.9 sec 11.3 sec 13.6 sec	(A)	(2.9 sec) 8.4 sec 8.4 sec 13.3 sec 20.7 sec	(A)	(1.8 sec) 8.5 sec 9.1 sec 19.3 sec 21.5 sec	(A)	(7.5 sec) 8.5 sec 9.7 sec 38.3 sec 37.2 sec	(A)
12. West 2nd Street / Broadway	Signal	13.5 sec	B	14.3 sec	B	14.7 sec	B	15.3 sec	B
13. West 2nd Street / Main Street	Signal	12.8 sec	B	13.0 sec	B	15.6 sec	B	16.9 sec	B
14. Midway / Park Avenue	Signal	31.3 sec	C	34.5 sec	C	29.9 sec	C	32.5 sec	C
15. Midway / Hegan Lane	Signal	16.5 sec	B	16.5 sec	B	22.2 sec	C	22.9 sec	C
16.. Hegan Lane / East ATRC Access (overall) WB left turn NB approach	NB Stop	(1.9 sec) 7.7 sec 9.7 sec	(A)	(2.4 sec) 7.7 sec 9.6 sec	(A)	(1.0 sec) 7.5 sec 9.5 sec	(A)	(1.6 sec) 7.5 sec 9.5 sec	(A)

KDA

Special Events at the ATRC. As noted earlier, the ATRC is planned to host special events. These events could be held at various times during the year and could result in traffic entering and exiting the site at various times during the day. As a worst case, an "Existing Plus Special Event" scenario was evaluated assuming full occupancy of the events center and traffic exiting after an event during the p.m. peak hour. This scenario assumes the trip generation presented earlier in Table 4 and the distribution pattern shown in Table 8.

TABLE 8
SPECIAL EVENT TRIP DISTRIBUTION

Route	Percent of Total Trips
North via Park Avenue	20%
East via Park Avenue	60%
South via Midway	10%
West via Hegan Road	10%
Total	100%

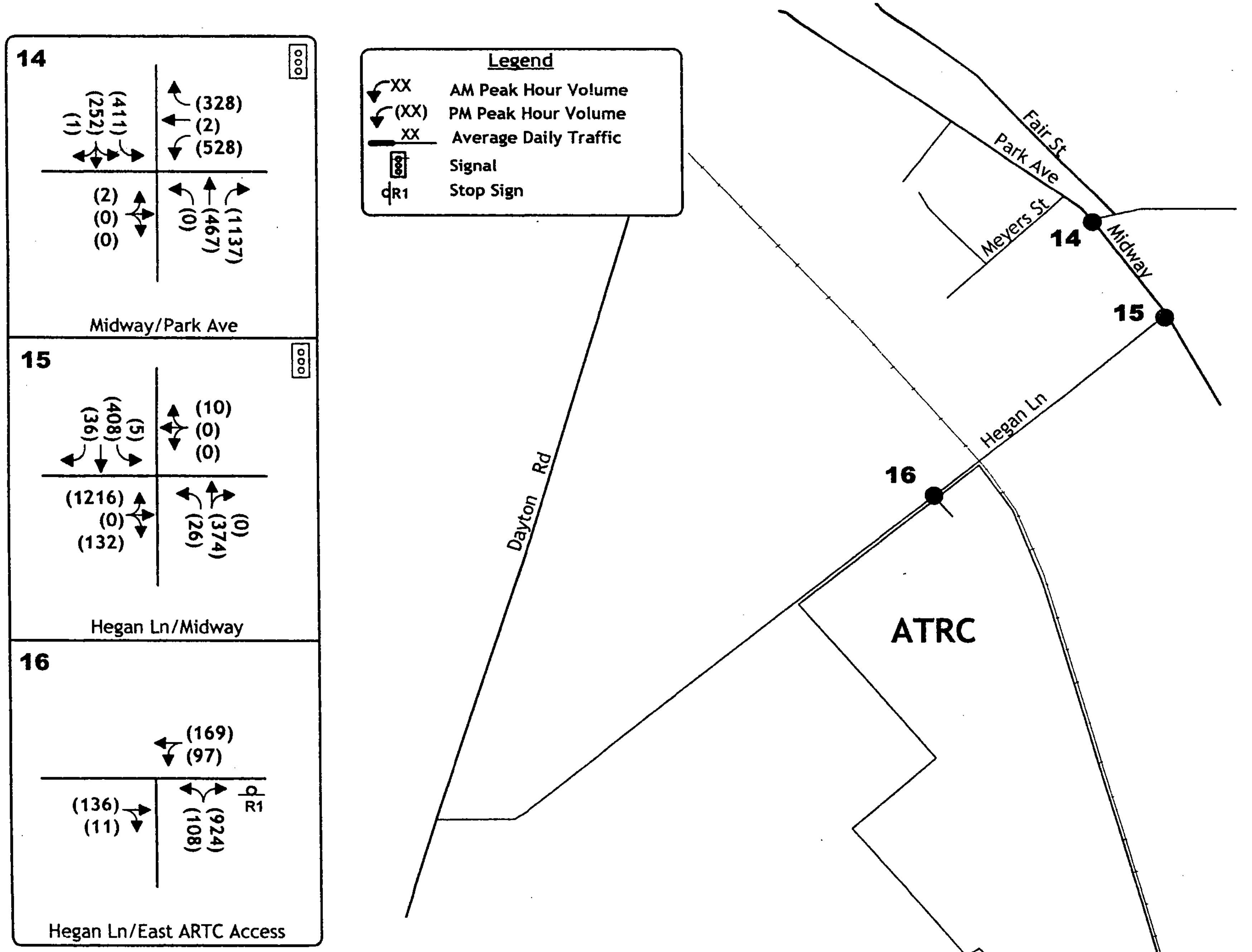
Resulting p.m. peak hour volumes are presented in Figure 5, and Table 9 presents "Existing Plus Special Event" p.m. peak hour Levels of Service at the study intersections near the ATRC. As shown, under these assumptions The Midway / Hegan Lane intersection is likely to operate at LOS F, as is the ATRC access onto Hegan Lane.

Measures to improve Level of Service at these locations have been considered. Temporary manual traffic controls would be needed at the ATRC access to deliver LOS D or better conditions during the p.m. peak hour with full occupancy. Widening the Hegan Lane / Midway intersection to accommodate dual eastbound left turn lanes would be needed the deliver LOS D or better conditions at that location. Alternatively, reducing the size of an event ending during the p.m. peak hour would also improve conditions. Traffic following an 800-person event during the p.m. peak hour would result in LOS D.

TABLE 9
EXISTING PLUS ATRC SPECIAL EVENT
PEAK HOUR INTERSECTION LEVELS OF SERVICE

		P.M. Peak Hour			
		Existing		Existing Plus Special Events	
Intersection	Control	Average Delay	LOS	Average Delay	LOS
14. Midway / Park Avenue	Signal	29.9 sec	C	47.9 sec	D
15. Midway / Hegan Lane	Signal	22.2 sec	B	227.0 sec	F
16. Hegan Lane / East ATRC Access					
(overall)	NB Stop	(1.0 sec)	(A)	(119.4 sec)	(F)
WB left turn		7.5 sec		7.7 sec	
NB approach		9.5 sec		166.4 sec	

KDA



EXISTING PLUS ATRC SPECIAL EVENT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson
Transportation Engineers

5600-37
12/13/2004

figure 5c

Other Impacts

Parking Impacts. Implementation of the Master Plan would result in an increase in the demand for on-campus parking and the concurrent increase in the number of parking spaces that will be provided.

The increase in parking demand associated with increased enrollment can be suggested based on current utilization. Assuming that the current enrollment of 16,000 students results in 1,896 occupied parking spaces (2,143 spaces @ 88% occupancy), then adding another 4,000 students will result in another 474 vehicles to be parked on the site, or a total of about 2,370 vehicles.

This simple relationship does not, however, address spill-over parking in the downtown area. The *Executive Summary – Draft California State University, Chico Parking Needs Study (2004)* suggests that about 305 downtown spaces may be occupied by overflow parking. This would increase the demand to 2,675 spaces. Assuming that this demand is to be accommodated on-campus and that the resulting demand / supply ration should be less than "fully utilized" (i.e., 0.80), then a total of 3,344 on-campus spaces would be needed.

The Master Plan indicates that on-campus parking will be provided. The net increase in on-campus parking is 1,430 spaces. This would increase the on-site total to about 3,570 spaces.

Parking will also be required at the ATRC to accommodate crowds associated with the Events Center. Assuming standard automobile occupancy rates, up to 1,000 parking spaces may be needed.

Transit Impacts. Increasing the enrollment under the Master Plan would incrementally increase the demand for transit services in the area of the campus and in the Chico area as a whole. Assuming a proportionate increase in transit ridership as enrollment increases, current student ridership estimated at 250,000 annual and 1,000 daily riders could increase to 312,500 annual and 1,250 daily riders. Because the area is well served by existing transit routes, the incremental increase in ridership would not be expected to result in the need for new routes, however, increased ridership may eventually result in the need for additional capacity in terms of decreased headways during peak periods. Providing additional capacity along existing routes may require additional equipment / personnel and increased operational costs, although the extent of these additional needs is unknown.

Pedestrian / Bicycle Impacts. Implementation of the Master Plan with a concurrent increase in enrollment would increase the number of persons walking or riding bicycles to the campus. In turn, this may result in additional automobile / pedestrian / bicycle conflicts on the streets adjoining the campus, as well as the demand for additional bicycle parking. The Master Plan provides the opportunity to relocate and/or reconfigure bicycle-parking areas as part of the site development for new projects.

SUMMARY OF IMPACTS AND MITIGATIONS

Impact: Generation of vehicle trips due to increased enrollment and the development of parking structures will increase traffic on the adjacent street system

The street system as it exists today has the capacity to absorb the traffic generated by increased enrollment at CSU-Chico. While the Level of Service at the Nord Avenue (SR 32) / West Sacramento Avenue intersection is projected to reach LOS E, the Chico General Plan permits acceptance of this condition as no feasible mitigation is apparent..

Impact: Implementation of the Master Plan will result increased demand for on-campus parking

Increased enrollment associated with the Master Plan will increase the demand for on-campus parking. However, because concurrent expansion of the on-site parking supply is planned, this is not a significant impact.

Impact: Pedestrian / Bicycle Activity near the Campus could create conflicts with Automobiles.

The CSU-Campus's location adjoining the downtown Chico area will result in increased pedestrian and bicycle traffic between the school, adjoining neighborhoods and the balance of the community as the master Plan is developed. For example, students /staff will use 2nd Avenue when making use of the new parking structure. In those locations where the pedestrian / bicycle traffic is concentrated, safety problems could result.

Mitigation Measures

1. Pedestrian / Bicycle activity shall be addressed in the design of new parking facilities. Traffic controls devices needed to ensure crossing safety shall be provided as new facilities are developed.

Level of Significance

These mitigation measures will reduce this impact to a less than significant level.

Impact: Special Events at the ATRC will generate vehicle trips and parked cars

The events center included in the ATRC will generate automobile traffic before and after events. An at-capacity event ending during the p.m. peak hour has the potential to result in LOS F conditions at The Midway / Hegan Lane intersection and at the ATRC access onto Hegan Lane. Full occupancy of the Events Center may result in the need to park up to 1,000 vehicles at the site. This is a significant impact.

KDA

Mitigation Measures

(1) When the Events Center is constructed, the on-site parking supply should be considered and if the proposed supply fails to satisfy projected demands on-site, then a parking management plan should be created. The plan will delineate the location of and access to the on-site and off-site parking supply that will be made available when events are held at the stadium. If appropriate, the plan should link maximum ticket sales or the number of seats constructed to the number of parking spaces available near the stadium. If necessary, the parking management plan could incorporate other features to help reduce the demand for on site parking, including shuttle busses from satellite parking locations, etc.

(2) An operational plan shall be developed for the Events Center which schedules travel to and from large events outside of peak commute hours. The plan shall identify the size and schedule of events that necessitate manual traffic controls at affected intersections, as well as maximum attendance for events ending during the p.m. peak hour.

(3) When the Events Center is constructed, improvements shall be made to the ATRC's Hegan Lane access intersections to provide left turn lanes on Hegan lane and to provide adequate throat depth on exiting lanes.

Level of Significance

These mitigation measures will reduce this impact to a less than significant level.

Impact: Implementation of the Master Plan will Increase the Demand for CATS in the area of the Campus.

Increased enrollment associated with implementation of the Master Plan will result in additional demands on CATS which may result in the need for expanded service along existing routes that serve the campus (i.e., Student Shuttle). While the extent of additional service needed to accommodate increased enrollment is unknown, potential increases in CATS operational costs represent a significant impact.

Mitigation Measures

CSU shall continue to work with CATS to subsidize student transit ridership. Should the need for expanded service on the "Student Shuttle" routes be identified, CSU shall work with CATS to develop an equitable funding mechanism.

Level of Significance

These mitigation measures will reduce this impact to a less than significant level.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Analysis of Cumulative Scenarios

Background Traffic Volumes. To evaluate the impacts of the Master Plan on traffic conditions in the project area in the future two additional scenarios were created and compared: Year 2025 With and Without Master Plan. Year 2025 Without Project conditions assume continuation of the existing Master Plan and an enrollment of 16,000. Year 2025 With Project conditions assume increased enrollment to 20,000 and the development of anticipated parking supplies.

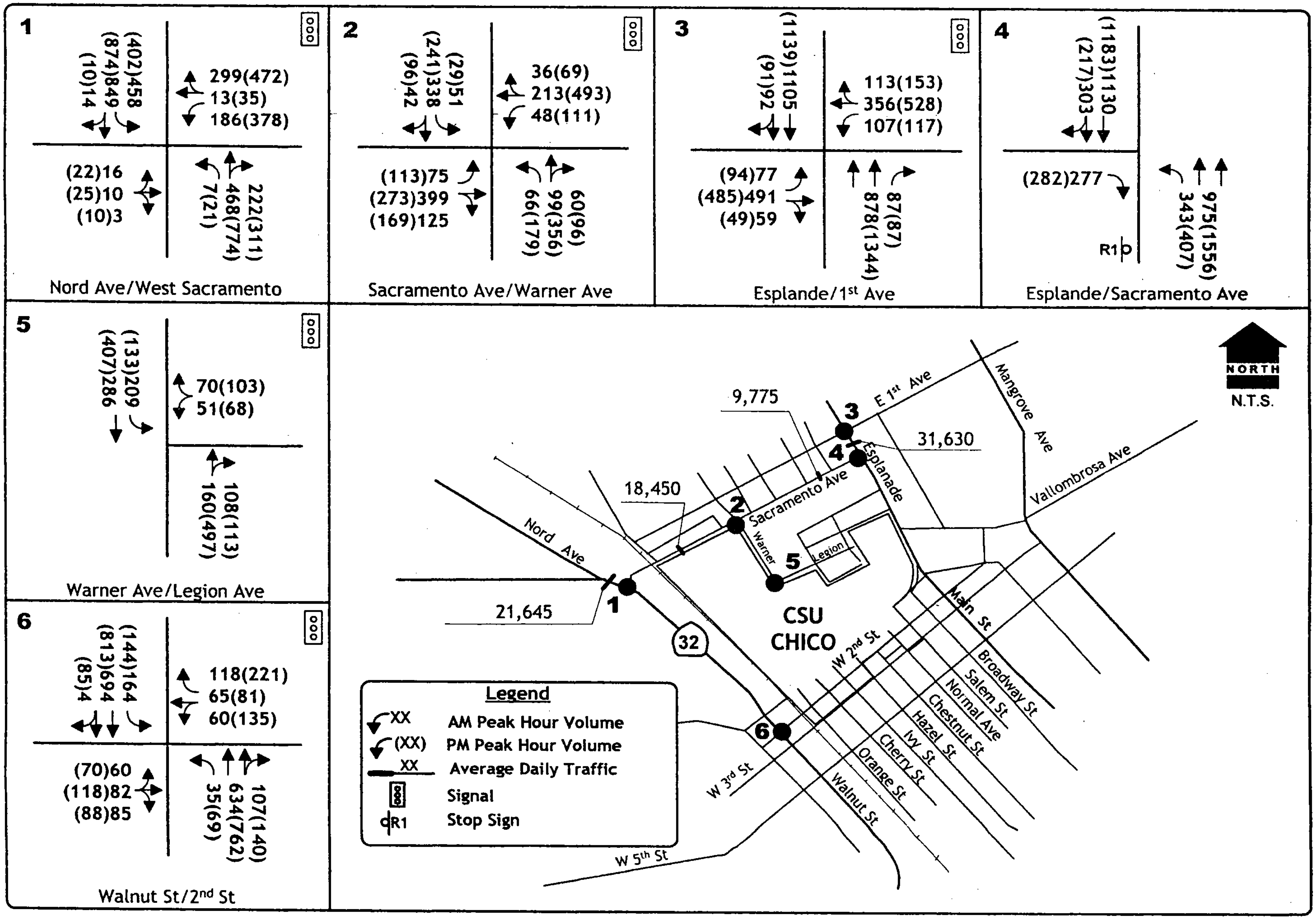
Year 2025 Without Project traffic volume projections were developed based on information derived from the City of Chico regional travel demand forecasting model. The current model was reviewed to identify campus characteristics and the student population / trip generation was adjusted to reflect continuation of current conditions (i.e., 16,000 students). Peak hour segment traffic volume forecasts were made for this scenario and were compared to the baseline model forecast in order to identify the amount of growth that can be anticipated.

Review of these forecasts revealed that background volumes in the areas near the CSU-Chico campus can be expected to increase by 30% by the year 2025. Slightly different relationships were discovered in the area of the Park Avenue / Midway intersection. At this location traffic on Park Avenue east of Midway was projected to increase by about 15%, while the volume on Midway south of Parkway Avenue was shown to increase by 60%.

These growth rates were applied to current peak hour and daily traffic volumes to create the Year 2025 Base conditions shown in Figures 6a-6c. Thus, it was again necessary to interpolate mid afternoon traffic volumes. Projected Cumulative Base traffic volumes are presented in Figure 6a-6c.

Plus Project Volumes. Project trips were superimposed onto the Year 2025 baseline to create the Year 2025 Plus Project scenarios. Resulting volumes are presented in Figure 7a-7C and in Table 10.

KDA

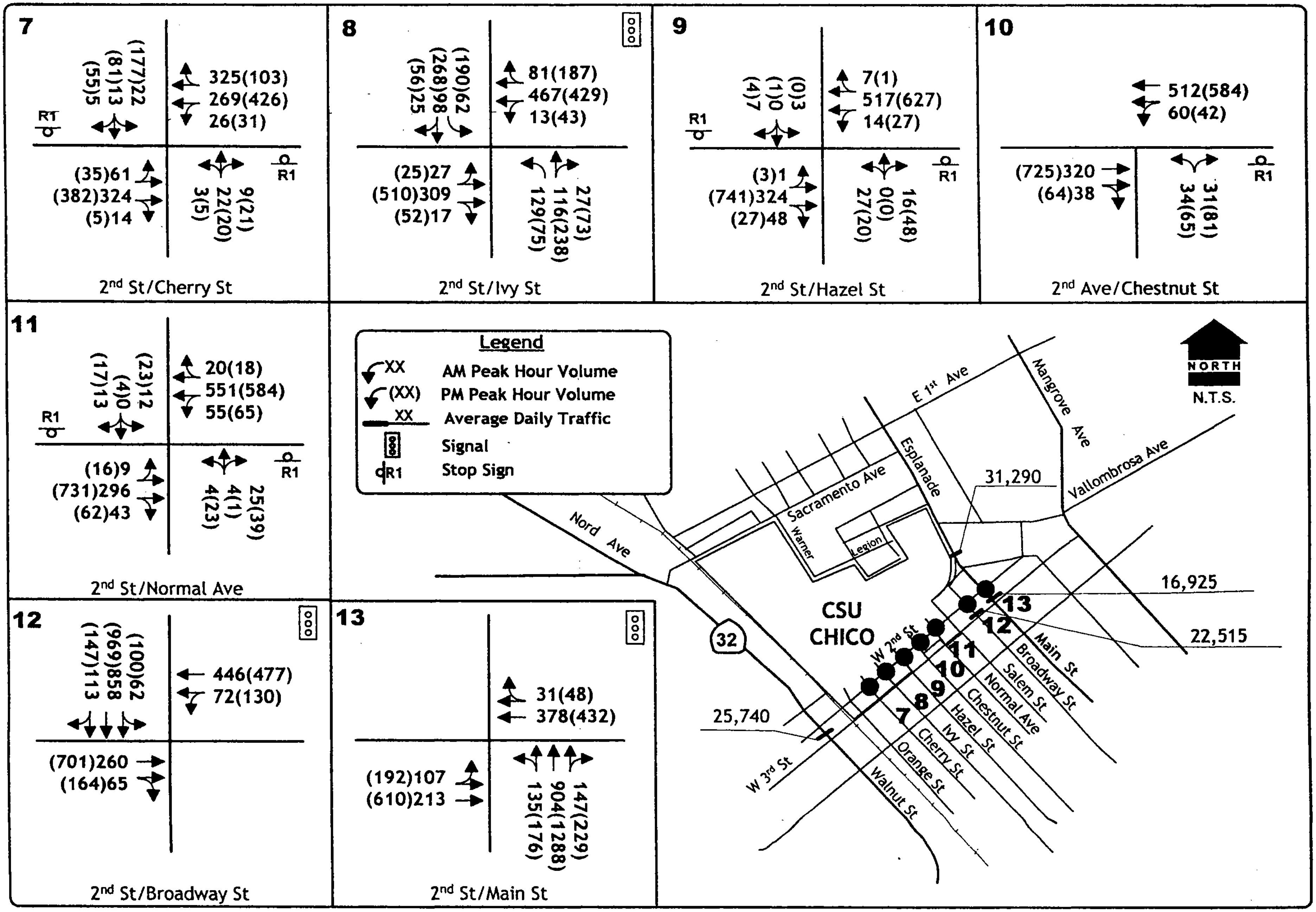


KD Anderson
Transportation Engineers

5600-37 12/13/2004

CUMULATIVE BASE TRAFFIC
VOLUMES AND LANE CONFIGURATIONS

figure 6a

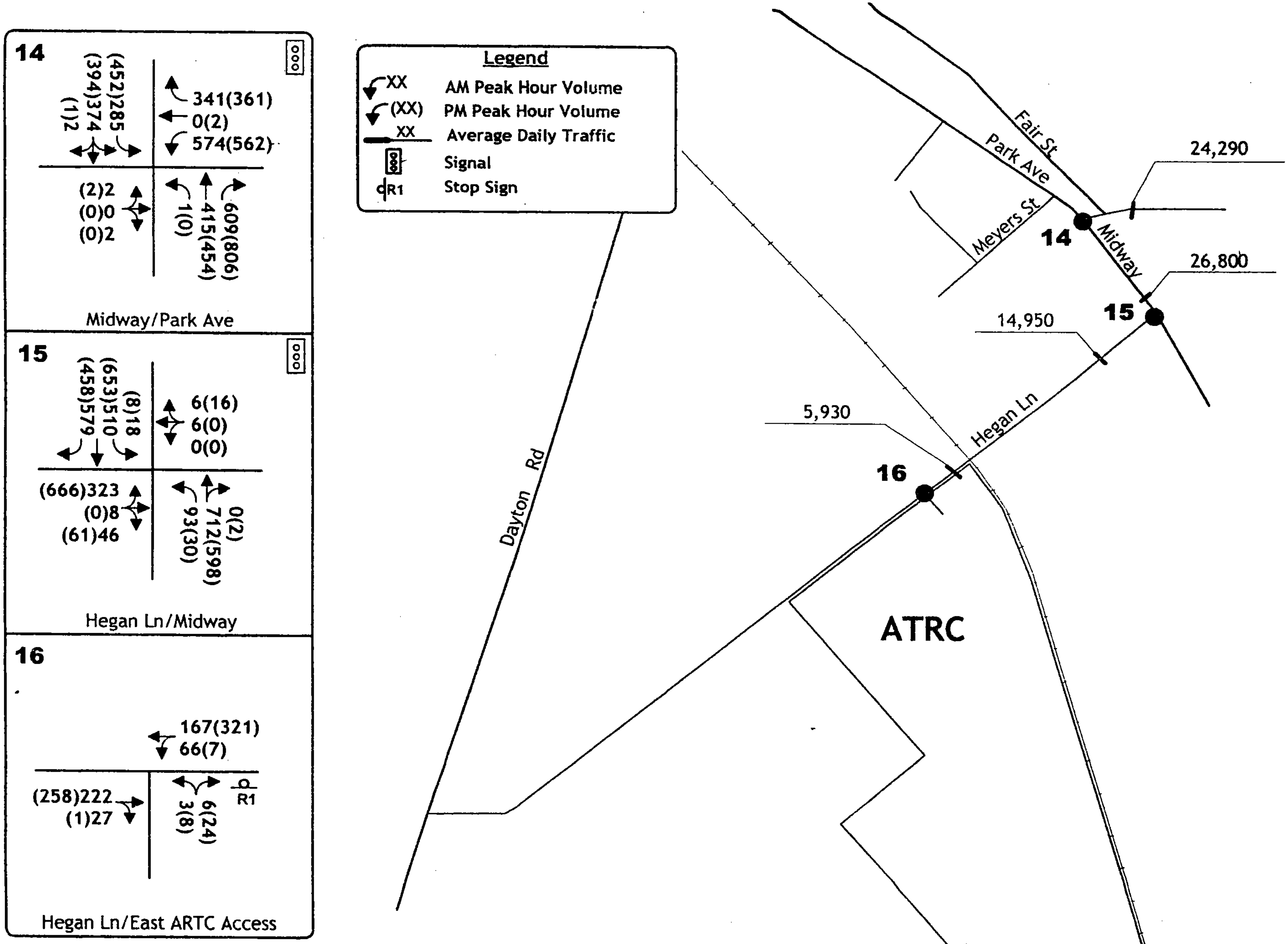


KD Anderson
Transportation Engineers

CUMULATIVE BASE TRAFFIC
VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 6b

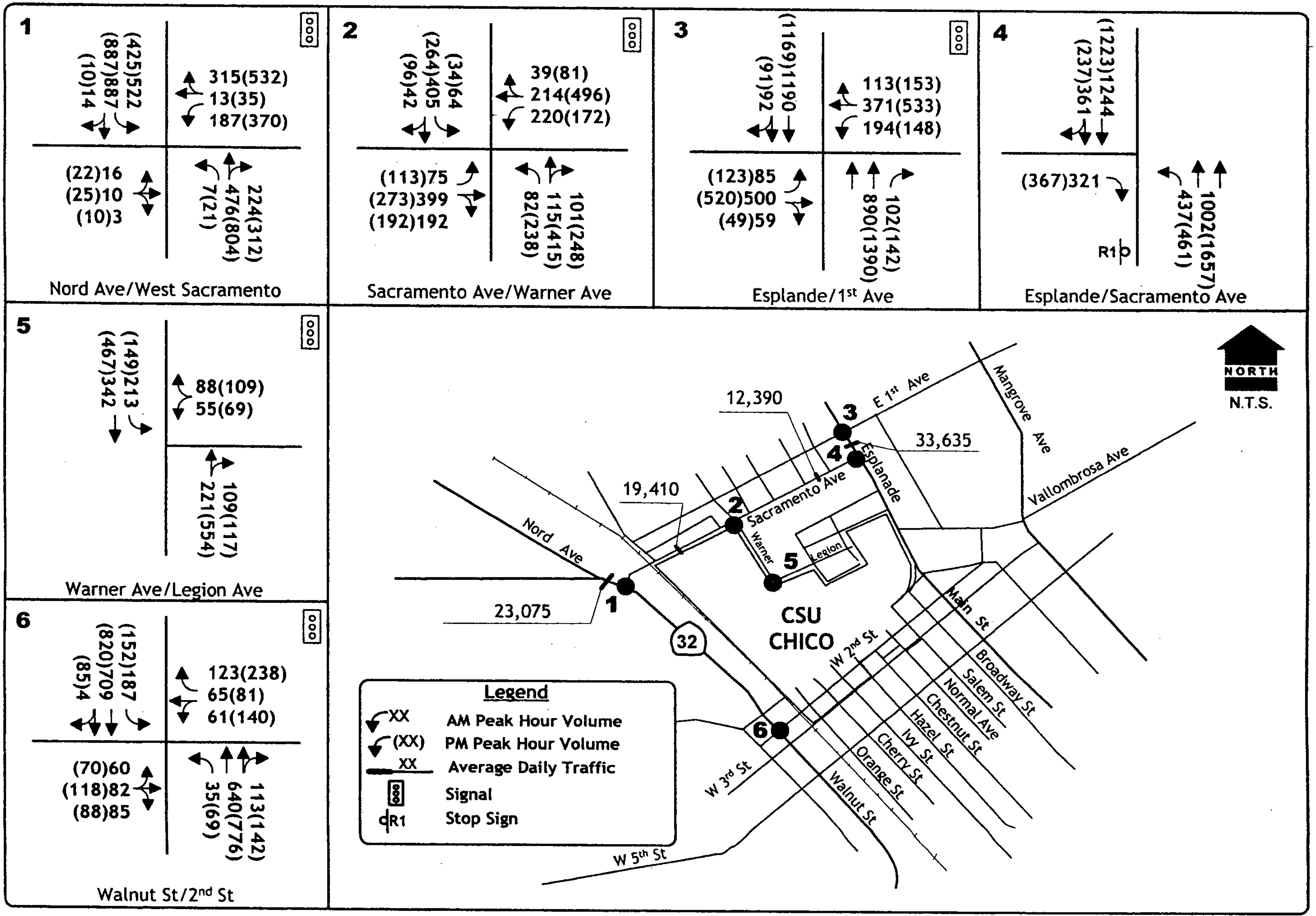


KD Anderson
Transportation Engineers

CUMULATIVE BASE TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 6c

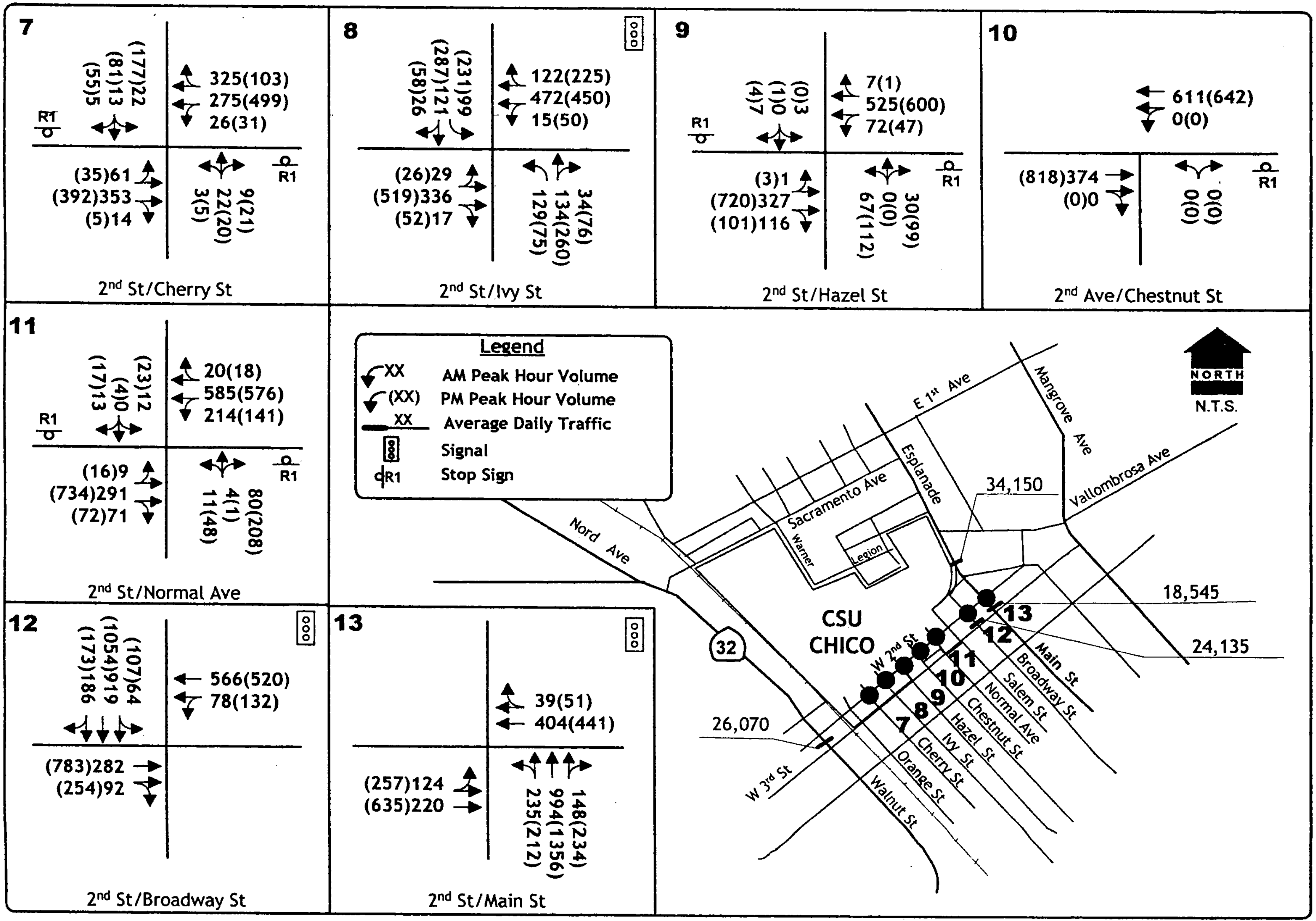


KD Anderson
Transportation Engineers

CUMULATIVE PLUS BASE TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 7a

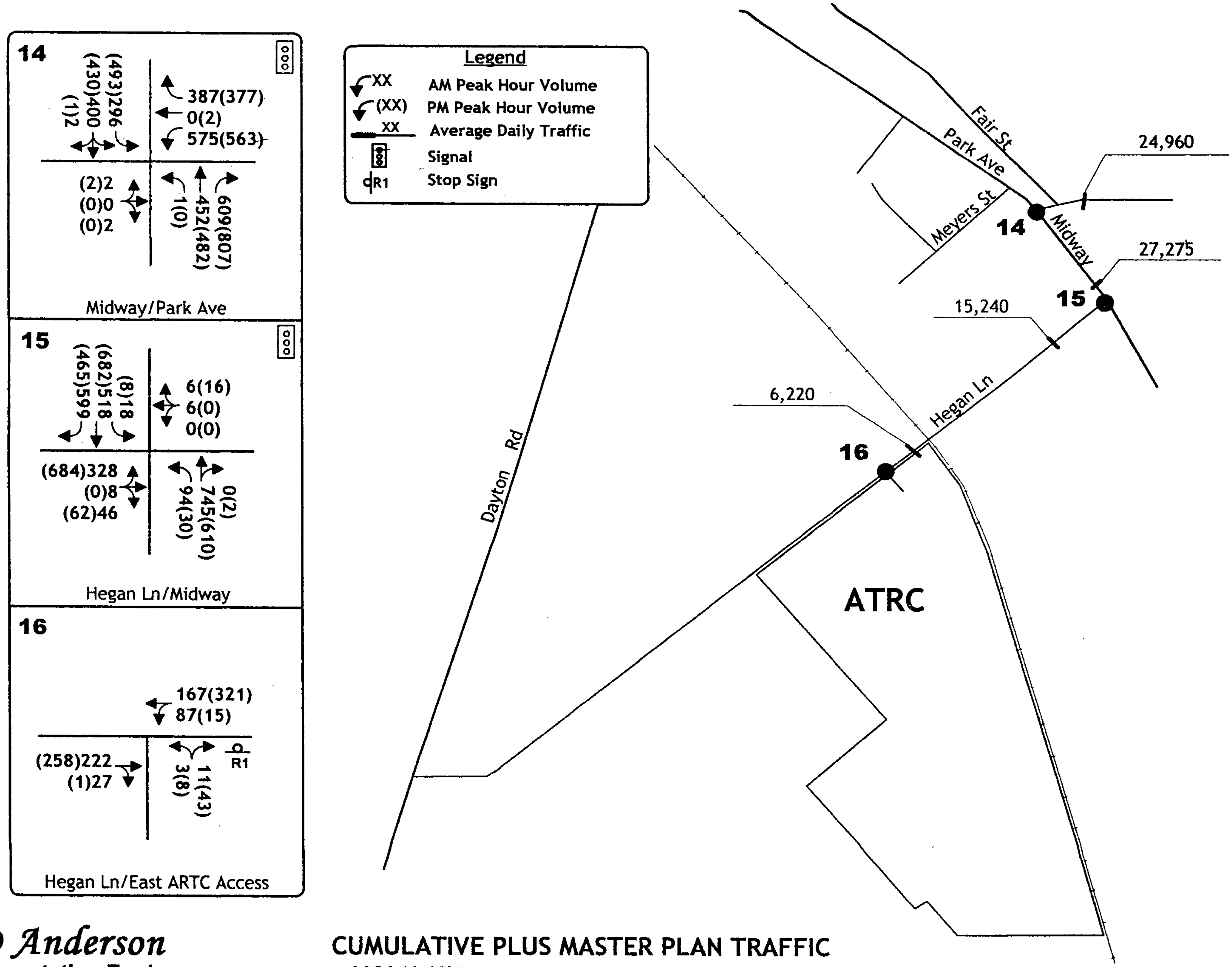


KD Anderson
Transportation Engineers

CUMULATIVE PLUS MASTER PLAN TRAFFIC VOLUMES AND LANE CONFIGURATIONS

5600-37 12/13/2004

figure 7b



KD Anderson
Transportation Engineers

CUMULATIVE PLUS MASTER PLAN TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 10
YEAR 2025 DAILY TRAFFIC VOLUMES

	Location			Daily Volume		
					2025	
Street	From	To	Classification	2004	Base	Plus Master Plan
Nord Avenue	West Sacramento Ave	East Sacramento Ave	Arterial	16,650	21,645	23,075
Sacramento Avenue	Nord Avenue	Warner Avenue	Minor Arterial	14,190	18,450	19,410
	Warner Avenue	Esplanade	Minor Arterial	7,520	9,775	12,390
Esplanade	East 1st Ave	Sacramento Ave	Arterial	24,330	31,630	33,635
	Vallombrosa Ave	West 1st Street	Arterial	24,070	31,290	34,150
Walnut Street	West 1st Street	West 2nd Street	Arterial	19,800	25,740	26,070
Broadway	West 2nd Street	West 3rd Street	Arterial	17,320	22,515	24,135
Main Street	West 2nd Street	West 3rd Street	Arterial	13,020	16,925	18,545
Park Avenue	Midway	SR 99	Arterial	20,240	24,290	24,960
Midway	Park Avenue	Hegan Lane	Minor Arterial	16,750	26,800	27,275
Hegan Lane	Dayton Road	Railroad	Collector	3,120	5,930	6,220
	Railroad	Midway	Collector	7,870	14,950	15,240

KDA

Cumulative (Year 2025) Levels of Service

Year 2025 peak hour Levels of Service Without and With the master Plan are shown in Table 11. As shown, Levels of Service in excess of the City's LOS D standard are forecast at the following five intersections.

The **Nord Avenue (SR 32) / West Sacramento Avenue intersection** is projected to operate at LOS F whether the Master Plan is implemented or not. To improve conditions at this location it would be necessary to widen the northbound Nord Avenue approach to provide a second northbound through lane. This improvement would deliver LOS E conditions during the p.m. peak hour with implementation of the Master Plan. However, previous traffic studies in this area have suggested that improvements to deliver LOS E or better conditions are not likely to be feasible due to existing development in this area.

The **2nd Street / Cherry Street intersection** is projected to operate at LOS F whether the Master Plan is implemented or not. A traffic signal would be required to deliver LOS D or better conditions.

The **2nd Street / Normal Street intersection** is projected to operate at LOS E if the Master Plan is implemented. This Level of Service is closely associated with development of a parking structure in the area of the 2nd Street / Chestnut Street intersection. While development of a traffic signal would deliver acceptable Level of Service, the need for a traffic signal is closely linked to decisions regarding the location and nature of access to the parking structure. Additional analysis of traffic conditions will be needed as the plans for the parking structure are developed.

The **Midway / Park Avenue** intersection is projected to operate at LOS F whether the Master Plan is developed or not. To deliver LOS D or better conditions it will be necessary to widen the intersection to provide dual southbound left turn lanes and a separate through+right turn lane.

The **Midway / Hegan Lane intersection** is projected to operate at LOS E whether the Master Plan is implemented or not. To deliver LOS D or better conditions it would be necessary to widen the eastbound Hegan Lane approach to provide a second left turn lane. It would also be necessary to widen northbound Midway north of the intersection to receive the second left turn lane.

TABLE 11
PEAK HOUR INTERSECTION LEVELS OF SERVICE FOR YEAR 2025 SCENARIOS

		A.M. Peak Hour				P.M. Peak Hour			
		2025 Base		2025 Plus Project		2025 Base		2025 Plus Project	
Intersection	Control	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
1. Nord Avenue / Sacramento Street	Signal	55.2 sec	E	69.3 sec	E	128.4 sec	F	150.2 sec	F
2. Sacramento Ave / Warner Avenue	Signal	31.4 sec	C	50.2 sec	D	37.6 sec	D	50.3 sec	D
3. Esplanade / East 1st Street	Signal	27.0 sec	C	35.6 sec	D	34.8 sec	C	40.5 sec	D
4. Esplanade / Sacramento Street									
(overall)	EB Stop	(13.4 sec)	(A)	(46.8 sec)	(E)	(10.4 sec)	(B)	(24.7 sec)	(C)
NB left		61.7 sec		231.6 sec		47.8 sec		115.0 sec	
EB approach		70.0 sec		175.2 sec		60.0 sec		121.0 sec	
5. Warner Avenue / Legion Avenue	Signal	10.7 sec	B	11.1 sec	B	9.6 sec	A	9.7 sec	A
6. Walnut Avenue / West 2nd Street	Signal	18.6 sec	B	18.9 sec	B	20.9 sec	C	21.3 sec	C
7. West 2nd Street / Cherry Street									
(overall)	NB/SB Stop	(2.6 sec)	(A)	(2.6 sec)	(A)	(66.0 sec)	(F)	(72.3 sec)	(F)
EB left		9.3 sec		9.3 sec		8.8 sec		8.9 sec	
WB left		8.2 sec		8.3 sec		8.3 sec		8.3 sec	
NB approach		27.6 sec		29.1 sec		21.6 sec		22.5 sec	
SB approach		28.0 sec		29.5 sec		278.6 sec		313.3 sec	
8. West 2nd Street / Warner Street / Ivy Street	Signal	12.2 sec	B	12.6 sec	B	14.9 sec	B	15.9 sec	B
9. West 2nd Street / Hazel Street									
(overall)	NB/SB Stop	(1.0 sec)	(A)	(3.1 sec)	(A)	(1.3 sec)	(A)	(24.5 sec)	(C)
EB left		8.7 sec		8.7 sec		9.0 sec		8.9 sec	
WB left		8.3 sec		8.7 sec		9.7 sec		10.1 sec	
NB approach		16.2 sec		28.3 sec		22.3 sec		194.2 sec	
SB approach		13.3 sec		14.9 sec		18.4 sec		19.5 sec	

KDA

TABLE 11 (Cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
FOR YEAR 2025 SCENARIOS

		A.M. Peak Hour				P.M. Peak Hour			
		2025 Base		2025 Plus Project		2025 Base		2025 Plus Project	
Intersection	Control	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS
West 2nd Street / Chestnut Street (overall) WB left NB approach	NB Stop	(1.6 sec) 8.4 sec 15.8 sec	(A)	Not applicable		(3.7 sec) 9.9 sec 36.7 sec	(A)	Not applicable	
West 2nd Street / Normal Avenue (overall) EB left turn WB left turn NB approach SB approach	NB/SB Stop	(1.4 sec) 8.9 sec 8.3 sec 13.6 sec 18.7 sec	(A)	(3.6 sec) 9.1 sec 9.0 sec 18.9 sec 38.7 sec	(A)	(2.9 sec) 9.0 sec 10.1 sec 33.2 sec 37.5 sec	(A)	(40.4 sec) 8.9 sec 10.8 sec 177.7 sec 104.8 sec	(E)
12. West 2nd Street / Broadway	Signal	14.4 sec	B	15.3 sec	B	16.9 sec	B	19.7 sec	B
13. West 2nd Street / Main Street	Signal	13.7 sec	B	14.4 sec	B	20.9 sec	B	26.1 sec	C
14. Midway / Park Avenue	Signal	82.6 sec	F	97.2 sec	F	103.8 sec	F	121.5 sec	F
15. Midway / Hegan Lane	Signal	29.7 sec	C	31.7 sec	C	67.2 sec	E	74.9 sec	E
16.. Hegan Lane / East ATRC Access (overall) WB left turn NB approach	NB Stop	(1.3 sec) 8.0 sec 10.8 sec	(A)	(1.6 sec) 8.0 sec 10.6 sec	(A)	(0.6 sec) 7.8 sec 10.8 sec	(A)	(1.0 sec) 7.8 sec 10.7 sec	(A)

KDA

Impact: Cumulative development in the study area by the Year 2025 will generate traffic on the planned street system

Background growth and Master Plan implementation will result in conditions in excess of City of Chico standards at five intersections. These include **Nord Avenue (SR 32) / West Sacramento Avenue, 2nd Street / Cherry Avenue, 2nd Street / Normal Street, Midway / Park Avenue, and Midway / Hegan Avenue.**

Mitigation Measures

The CSU-Chico participation in the following mitigation measures shall be proportionate to the impact of the Master Plan.

1) When plans for the 2nd Street parking structure proceed, CSU-Chico shall prepare a supplemental traffic study addressing site access and local circulation impacts. The study will address the need for signalization of adjoining intersections, including **2nd Street / Normal Street**, and if traffic signals are found to be needed, CSU-Chico shall participate to the cost in proportion to the project's impact. The study shall also consider the issue of bicycle access along this portion of 2nd Street, and applicable traffic control measures shall be included in the design of the project.
2) Future traffic conditions at the **2nd Street / Cherry Street** intersection shall be monitored by CSU-Chico and the City of Chico. When / if a traffic signal is found to be warranted, CSU shall contribute its fair share to the cost of this improvement.
3) CSU-Chico shall work with Caltrans and the City of Chico to identify feasible improvements to the **Nord Avenue (SR 32) / West Sacramento Avenue** intersection. If it is determined that a feasible improvement project is available, then CSU-Chico shall contribute its fair share to the cost of this project based on its traffic impact. However, as no feasible project has yet been identified, this impact is considered to be significant and unavoidable.
4) CSU-Chico shall contribute its fair share to the cost of widening **the Midway / Park Avenue** intersection to provide dual southbound left turn lanes and a separate northbound through lane. The CSU contribution shall be in proportion to the impacts of the Master Plan.
5) CSU-Chico shall contribute its fair share to the cost of widening the **Midway / Hegan Lane** intersection to accommodate dual eastbound left turn lanes. The CSU-Chico contribution shall be in proportion to the impacts of the Master Plan

Level of Significance

These mitigation measures will reduce the cumulative impact to a level that is less than significant at all locations except the Nord Avenue / West Sacramento intersection. Because identified mitigation measures may not be feasible, this impact remains significant and unavoidable.

APPENDIX

KDA

```
--------------------------------------------------------------------------------
                           EXISTING CONDITIONS
                       5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                              Scenario Report
Scenario:              daily

Command:               Default Command
Volume:                none
Geometry:              existing
Impact Fee:            Default Impact Fee
Trip Generation:       am peak
Trip Distribution:     current
Paths:                 Default Paths
Routes:                Default Routes
Configuration:         Default Configuration
```

```
-------------------------------------------------------------------------------
                             EXISTING CONDITIONS
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                           Trip Generation Report

                             Forecast for daily

Zone                                          Rate   Rate    Trips Trips   Total % Of
 #   Subzone       Amount  Units               In    Out      In   Out     Trips Total

---- ------------ ------- -------------- ------ ------   ----- -----   ----- -----

  1             1940.00 students          1.19   1.19    2309  2309    4618  48.5
      Zone 1 Subtotal ...........................     2309  2309    4618  48.5

  2             1935.00 students          1.19   1.19    2303  2303    4606  48.4
      Zone 2 Subtotal ...........................     2303  2303    4606  48.4

  3              125.00 students          1.19   1.19     149   149     298   3.1
      Zone 3 Subtotal ...........................      149   149     298   3.1

-------------------------------------------------------------------------------
TOTAL ................................................ 4761  4761    9522 100.0
```

```
------------------------------------------------------------------------------
                            EXISTING CONDITIONS
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                         Trip Distribution Report

                         Percent Of Trips current

                                  To Gates
            1     2     3     4     5     6     7     8     9    10
Zone      ----- ----- ----- ----- ----- ----- ----- ----- ----- -----

   1       15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
   2       15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
   3       15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
```

```
--------------------------------------------------------------------------------
                              EXISTING CONDITIONS
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                            Turning Movement Report
                                     daily

Volume     Northbound       Southbound        Eastbound        Westbound     Total
Type    Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right  Volume

#1 Nord Ave / West Sacramento Ave
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added      0  242    17   450  264     0     0    0     0    17    0   472    1462
Total      0  242    17   450  264     0     0    0     0    17    0   472    1462

#2 Sacramento Ave / Warner Ave
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added    467  467  1206    91  467     0     0    0   467  1206   22    91    4484
Total    467  467  1206    91  467     0     0    0   467  1206   22    91    4484

#3 Esplanade / 1st Avenue
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added      0  364   437     0  595     0   231  277     0   610  104     0    2618
Total      0  364   437     0  595     0   231  277     0   610  104     0    2618

#4 Esplanade / Sacramento Ave
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added    795  801     0     0  801   404     0    0   772     0    0     0    3573
Total    795  801     0     0  801   404     0    0   772     0    0     0    3573

#5 Warner Ave / Legion Avenue
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added      0  663    29   127  663     0     0    0     0    29    0   127    1638
Total      0  663    29   127  663     0     0    0     0    29    0   127    1638

#6 Walnut Avenue / 2nd Street
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added      0  121    43   161  121     0     0    0     0    43    0   138     627
Total      0  121    43   161  121     0     0    0     0    43    0   138     627

#7 2nd Avenue / Cherry St
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added      0    0     0     0    0     0     0  204     0     0  181     0     385
Total      0    0     0     0    0     0     0  204     0     0  181     0     385

#8 2nd Street / Ivy Street / Warner Ave
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added      0  231    52   444  231    17    17  186     0    52  164   444    1838
Total      0  231    52   444  231    17    17  186     0    52  164   444    1838

#9 2nd Street / Hazel St
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Added    216    0   406     0    0     0     0  467   216   406  444     0    2155
Total    216    0   406     0    0     0     0  467   216   406  444     0    2155
```

```
------------------------------------------------------------------------------
                           EXISTING CONDITIONS
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
Volume    Northbound       Southbound       Eastbound        Westbound     Total
Type   Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume


#10 2nd Street / Chestnut St
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added     0    0     0     0    0     0     0  872     0     0  850     0   1722
Total     0    0     0     0    0     0     0  872     0     0  850     0   1722

#11 2nd Street / Normal Ave
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added   196    0   703     0    0     0     0  677   196   703  654     0   3129
Total   196    0   703     0    0     0     0  677   196   703  654     0   3129

#12 2nd Street / Broadway
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added     0    0     0    58  848   512     0  651   729    42  845     0   3685
Total     0    0     0    58  848   512     0  651   729    42  845     0   3685

#13 2nd Street / Main Street
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added   707  870    42     0    0     0   512  196     0     0  180    58   2565
Total   707  870    42     0    0     0   512  196     0     0  180    58   2565

#14 Park Avenue / Midway
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added     0  359    10   323  359     0     0    0     0    10    0   323   1384
Total     0  359    10   323  359     0     0    0     0    10    0   323   1384

#15 Midway / Hegan Lane
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added     7  231     0     0  231   139   139    0     7     0    0     0    754
Total     7  231     0     0  231   139   139    0     7     0    0     0    754

#16 Hegan lane / ARTC Access
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Added     2    0   147     0    0     0     0    0     2   147    0     0    298
Total     2    0   147     0    0     0     0    0     2   147    0     0    298
```

```
-------------------------------------------------------------------------------
                             EXISTING CONDITIONS
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                              Link Volume Report
                                    daily

Volume        NB Link            SB Link            EB Link            WB Link      Total
Type     In  Out  Total     In  Out  Total     In  Out  Total     In  Out  Total Volume

#1 Nord Ave / West Sacramento Ave
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added   259  281    540    714  714   1428      0    0      0    489  467    956   2924
Total   259  281    540    714  714   1428      0    0      0    489  467    956   2924

#2 Sacramento Ave / Warner Ave
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added  2140 2140   4280    558  558   1116    467  489    956   1319 1297   2616   8968
Total  2140 2140   4280    558  558   1116    467  489    956   1319 1297   2616   8968

#3 Esplanade / 1st Avenue
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added   801 1205   2006    595  595   1190    508  104    612    714  714   1428   5236
Total   801 1205   2006    595  595   1190    508  104    612    714  714   1428   5236

#4 Esplanade / Sacramento Ave
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added  1596 1573   3169   1205  801   2006    772 1199   1971      0    0      0   7146
Total  1596 1573   3169   1205  801   2006    772 1199   1971      0    0      0   7146

#5 Warner Ave / Legion Avenue
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added   692  692   1384    790  790   1580      0    0      0    156  156    312   3276
Total   692  692   1384    790  790   1580      0    0      0    156  156    312   3276

#6 Walnut Avenue / 2nd Street
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added   164  164    328    282  259    541      0    0      0    181  204    385   1254
Total   164  164    328    282  259    541      0    0      0    181  204    385   1254

#7 2nd Avenue / Cherry St
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added     0    0      0      0    0      0    204  181    385    181  204    385    770
Total     0    0      0      0    0      0    204  181    385    181  204    385    770

#8 2nd Street / Ivy Street / Warner Ave
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added   283  283    566    692  692   1384    203  181    384    660  682   1342   3676
Total   283  283    566    692  692   1384    203  181    384    660  682   1342   3676

#9 2nd Street / Hazel St
Base      0    0      0      0    0      0      0    0      0      0    0      0      0
Added   622  622   1244      0    0      0    683  660   1343    850  873   1723   4310
Total   622  622   1244      0    0      0    683  660   1343    850  873   1723   4310
```

```
-----------------------------------------------------------------------------
                            EXISTING CONDITIONS
                        5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
Volume     NB Link          SB Link          EB Link          WB Link      Total
Type    In  Out  Total   In  Out  Total   In  Out  Total   In  Out Total Volume


#10 2nd Street / Chestnut St
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added    0    0     0     0    0     0   872  850  1722   850  872  1722   3444
Total    0    0     0     0    0     0   872  850  1722   850  872  1722   3444

#11 2nd Street / Normal Ave
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added  899  899  1798     0    0     0   873  850  1723  1357 1380  2737   6258
Total  899  899  1798     0    0     0   873  850  1723  1357 1380  2737   6258

#12 2nd Street / Broadway
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added    0 1619  1619  1418    0  1418  1380 1357  2737   887  709  1596   7370
Total    0 1619  1619  1418    0  1418  1380 1357  2737   887  709  1596   7370

#13 2nd Street / Main Street
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added 1619    0  1619     0 1440  1440   708  887  1595   238  238   476   5130
Total 1619    0  1619     0 1440  1440   708  887  1595   238  238   476   5130

#14 Park Avenue / Midway
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added  369  369   738   682  682  1364     0    0     0   333  333   666   2768
Total  369  369   738   682  682  1364     0    0     0   333  333   666   2768

#15 Midway / Hegan Lane
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added  238  238   476   370  370   740   146  146   292     0    0     0   1508
Total  238  238   476   370  370   740   146  146   292     0    0     0   1508

#16 Hegan lane / ARTC Access
Base     0    0     0     0    0     0     0    0     0     0    0     0      0
Added  149  149   298     0    0     0     2    2     4   147  147   294    596
Total  149  149   298     0    0     0     2    2     4   147  147   294    596
```

```
-------------------------------------------------------------------------------
                             EXISTING CONDITIONS
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                       Turning Movement By Zone Report
                                    daily

Volume    Northbound        Southbound        Eastbound         Westbound     Total
Type   Left Thru Right   Left Thru Right   Left Thru Right   Left Thru Right  Volume

#1 Nord Ave / West Sacramento Ave
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=26.2,V/C=0.749)][+26.168 D/V]
Base      0    0     0      0    0     0      0    0     0      0    0     0       0
Growth 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
InitBs    0    0     0      0    0     0      0    0     0      0    0     0       0
Zn 1      0    0    17    346    0     0      0    0     0     17    0   346     726
Zn 2      0  242     0    104  242     0      0    0     0      0    0   104     692
Zn 3      0    0     0      0   22     0      0    0     0      0    0    22      44
Added     0  242    17    450  264     0      0    0     0     17    0   472    1462
PassBy    0    0     0      0    0     0      0    0     0      0    0     0       0
Future    0  242    17    450  264     0      0    0     0     17    0   472    1462
UseAdj 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
Total     0  242    17    450  264     0      0    0     0     17    0   472    1462

#2 Sacramento Ave / Warner Ave
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=492.8,V/C=2.267)][+492.770 D/V]
Base      0    0     0      0    0     0      0    0     0      0    0     0       0
Growth 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
InitBs    0    0     0      0    0     0      0    0     0      0    0     0       0
Zn 1    364  260  1206      0  260     0      0    0   364   1206    0     0    3660
Zn 2    104  207     0     69  207     0      0    0   104      0    0    69     760
Zn 3      0    0     0     22    0     0      0    0     0      0   22    22      66
Added   467  467  1206     91  467     0      0    0   467   1206   22    91    4484
PassBy    0    0     0      0    0     0      0    0     0      0    0     0       0
Future  467  467  1206     91  467     0      0    0   467   1206   22    91    4484
UseAdj 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
Total   467  467  1206     91  467     0      0    0   467   1206   22    91    4484

#3 Esplanade / 1st Avenue
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=29.8,V/C=0.850)][+29.772 D/V]
Base      0    0     0      0    0     0      0    0     0      0    0     0       0
Growth 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
InitBs    0    0     0      0    0     0      0    0     0      0    0     0       0
Zn 1      0   58    69      0  289     0    231  277     0    242  104     0    1270
Zn 2      0  288   345      0  288     0      0    0     0    345    0     0    1266
Zn 3      0   19    22      0   19     0      0    0     0     22    0     0      82
Added     0  364   437      0  595     0    231  277     0    610  104     0    2618
PassBy    0    0     0      0    0     0      0    0     0      0    0     0       0
Future    0  364   437      0  595     0    231  277     0    610  104     0    2618
UseAdj 1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
Total     0  364   437      0  595     0    231  277     0    610  104     0    2618
```

```
--------------------------------------------------------------------------------
                              EXISTING CONDITIONS
                           5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
Volume    Northbound       Southbound        Eastbound        Westbound     Total
Type    Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume


#4 Esplanade / Sacramento Ave
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=366.5,V/C=0.000)][+0.000 V/C]
Base       0    0     0     0    0     0     0    0     0     0    0     0      0
Growth  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
InitBs     0    0     0     0    0     0     0    0     0     0    0     0      0
Zn 1     612  127     0     0  127   404     0    0   612     0    0     0   1882
Zn 2     138  633     0     0  633     0     0    0   138     0    0     0   1542
Zn 3      45   41     0     0   41     0     0    0    22     0    0     0    149
Added    795  801     0     0  801   404     0    0   772     0    0     0   3573
PassBy     0    0     0     0    0     0     0    0     0     0    0     0      0
Future   795  801     0     0  801   404     0    0   772     0    0     0   3573
UseAdj  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
Total    795  801     0     0  801   404     0    0   772     0    0     0   3573

#5 Warner Ave / Legion Avenue
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=7.1,V/C=0.501)][+7.084 D/V]
Base       0    0     0     0    0     0     0    0     0     0    0     0      0
Growth  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
InitBs     0    0     0     0    0     0     0    0     0     0    0     0      0
Zn 1       0  352     0   127  352     0     0    0     0     0    0   127    958
Zn 2       0  311    29     0  311     0     0    0     0    29    0     0    680
Zn 3       0    0     0     0    0     0     0    0     0     0    0     0      0
Added      0  663    29   127  663     0     0    0     0    29    0   127   1638
PassBy     0    0     0     0    0     0     0    0     0     0    0     0      0
Future     0  663    29   127  663     0     0    0     0    29    0   127   1638
UseAdj  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
Total      0  663    29   127  663     0     0    0     0    29    0   127   1638

#6 Walnut Avenue / 2nd Street
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=19.1,V/C=0.255)][+19.131 D/V]
Base       0    0     0     0    0     0     0    0     0     0    0     0      0
Growth  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
InitBs     0    0     0     0    0     0     0    0     0     0    0     0      0
Zn 1       0   17    17     0   17     0     0    0     0    17    0     0     68
Zn 2       0  104    26   138  104     0     0    0     0    26    0   138    536
Zn 3       0    0     0    22    0     0     0    0     0     0    0     0     22
Added      0  121    43   161  121     0     0    0     0    43    0   138    627
PassBy     0    0     0     0    0     0     0    0     0     0    0     0      0
Future     0  121    43   161  121     0     0    0     0    43    0   138    627
UseAdj  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
Total      0  121    43   161  121     0     0    0     0    43    0   138    627
```

```
--------------------------------------------------------------------------------
                           EXISTING CONDITIONS
                       5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
Volume    Northbound       Southbound       Eastbound        Westbound     Total
Type   Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume


#7 2nd Avenue / Cherry St
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=0.0,V/C=0.000)][+0.000 V/C]
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Growth 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
InitBs    0    0     0     0    0     0     0    0     0     0    0     0      0
Zn 1      0    0     0     0    0     0     0   17     0     0   17     0     34
Zn 2      0    0     0     0    0     0     0  164     0     0  164     0    328
Zn 3      0    0     0     0    0     0     0   22     0     0    0     0     22
Added     0    0     0     0    0     0     0  204     0     0  181     0    385
PassBy    0    0     0     0    0     0     0    0     0     0    0     0      0
Future    0    0     0     0    0     0     0  204     0     0  181     0    385
UseAdj 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
Total     0    0     0     0    0     0     0  204     0     0  181     0    385

#8 2nd Street / Ivy Street / Warner Ave
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=19.1,V/C=0.803)][+19.076 D/V]
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Growth 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
InitBs    0    0     0     0    0     0     0    0     0     0    0     0      0
Zn 1      0   92     0   242   92    17    17    0     0     0    0   242    702
Zn 2      0  138    46   202  138     0     0  164     0    46  164   202   1100
Zn 3      0    0     6     0    0     0     0   22     0     6    0     0     34
Added     0  231    52   444  231    17    17  186     0    52  164   444   1838
PassBy    0    0     0     0    0     0     0    0     0     0    0     0      0
Future    0  231    52   444  231    17    17  186     0    52  164   444   1838
UseAdj 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
Total     0  231    52   444  231    17    17  186     0    52  164   444   1838

#9 2nd Street / Hazel St
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=1993.4,V/C=0.000)][+0.000 V/C]
Base      0    0     0     0    0     0     0    0     0     0    0     0      0
Growth 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
InitBs    0    0     0     0    0     0     0    0     0     0    0     0      0
Zn 1      0    0     0     0    0     0     0  242     0     0  242     0    484
Zn 2    216    0   406     0    0     0     0  196   216   406  196     0   1636
Zn 3      0    0     0     0    0     0     0   28     0     0    6     0     34
Added   216    0   406     0    0     0     0  467   216   406  444     0   2155
PassBy    0    0     0     0    0     0     0    0     0     0    0     0      0
Future  216    0   406     0    0     0     0  467   216   406  444     0   2155
UseAdj 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00
Total   216    0   406     0    0     0     0  467   216   406  444     0   2155
```

```
------------------------------------------------------------------------------------
                                EXISTING CONDITIONS
                           5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------------
Volume    Northbound        Southbound        Eastbound         Westbound      Total
Type   Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right  Volume


#10 2nd Street / Chestnut St
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=0.0,V/C=0.000)][+0.000 V/C]
Base      0    0     0     0    0     0     0    0     0     0    0     0       0
Growth 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
InitBs    0    0     0     0    0     0     0    0     0     0    0     0       0
Zn 1      0    0     0     0    0     0     0  242     0     0  242     0     484
Zn 2      0    0     0     0    0     0     0  602     0     0  602     0    1204
Zn 3      0    0     0     0    0     0     0   28     0     0    6     0      34
Added     0    0     0     0    0     0     0  872     0     0  850     0    1722
PassBy    0    0     0     0    0     0     0    0     0     0    0     0       0
Future    0    0     0     0    0     0     0  872     0     0  850     0    1722
UseAdj 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
Total     0    0     0     0    0     0     0  872     0     0  850     0    1722

#11 2nd Street / Normal Ave
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del= 3.4E+0038,V/C=0.000)][+0.000 V
Base      0    0     0     0    0     0     0    0     0     0    0     0       0
Growth 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
InitBs    0    0     0     0    0     0     0    0     0     0    0     0       0
Zn 1      0    0     0     0    0     0     0  242     0     0  242     0     484
Zn 2    196    0   703     0    0     0     0  406   196   703  406     0    2610
Zn 3      0    0     0     0    0     0     0   28     0     0    6     0      34
Added   196    0   703     0    0     0     0  677   196   703  654     0    3129
PassBy    0    0     0     0    0     0     0    0     0     0    0     0       0
Future  196    0   703     0    0     0     0  677   196   703  654     0    3129
UseAdj 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
Total   196    0   703     0    0     0     0  677   196   703  654     0    3129

#12 2nd Street / Broadway
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=21.0,V/C=0.908)][+21.003 D/V]
Base      0    0     0     0    0     0     0    0     0     0    0     0       0
Growth 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
InitBs    0    0     0     0    0     0     0    0     0     0    0     0       0
Zn 1      0    0     0    58  554     0     0   58   185     0  242     0    1097
Zn 2      0    0     0     0  230   512     0  593   516    35  596     0    2482
Zn 3      0    0     0     0   63     0     0    0    28     7    6     0     104
Added     0    0     0    58  848   512     0  651   729    42  845     0    3685
PassBy    0    0     0     0    0     0     0    0     0     0    0     0       0
Future    0    0     0    58  848   512     0  651   729    42  845     0    3685
UseAdj 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
Total     0    0     0    58  848   512     0  651   729    42  845     0    3685
```

```
---------------------------------------------------------------------------------
                          EXISTING CONDITIONS
                       5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------------
Volume     Northbound        Southbound        Eastbound         Westbound      Total
Type    Left Thru Right   Left Thru Right   Left Thru Right   Left Thru Right  Volume


#13 2nd Street / Main Street
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=29.0,V/C=0.979)][+29.006 D/V]
Base       0    0     0      0    0     0      0    0     0      0    0     0       0
Growth  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
InitBs     0    0     0      0    0     0      0    0     0      0    0     0       0
Zn 1     185  554     0      0    0     0      0  115     0      0   58    58     970
Zn 2     516  230    35      0    0     0    512   81     0      0  115     0    1489
Zn 3       6   86     7      0    0     0      0    0     0      0    7     0     106
Added    707  870    42      0    0     0    512  196     0      0  180    58    2565
PassBy     0    0     0      0    0     0      0    0     0      0    0     0       0
Future   707  870    42      0    0     0    512  196     0      0  180    58    2565
UseAdj  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
Total    707  870    42      0    0     0    512  196     0      0  180    58    2565

#14 Park Avenue / Midway
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=17.2,V/C=0.466)][+17.230 D/V]
Base       0    0     0      0    0     0      0    0     0      0    0     0       0
Growth  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
InitBs     0    0     0      0    0     0      0    0     0      0    0     0       0
Zn 1       0  115     0    162  115     0      0    0     0      0    0   162     554
Zn 2       0  115     0    161  115     0      0    0     0      0    0   161     552
Zn 3       0  129    10      0  129     0      0    0     0     10    0     0     278
Added      0  359    10    323  359     0      0    0     0     10    0   323    1384
PassBy     0    0     0      0    0     0      0    0     0      0    0     0       0
Future     0  359    10    323  359     0      0    0     0     10    0   323    1384
UseAdj  1.00 1.00  0.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  0.00    0.83
Total      0  359     0    323  359     0      0    0     0     10    0     0    1051

#15 Midway / Hegan Lane
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=13.6,V/C=0.264)][+13.562 D/V]
Base       0    0     0      0    0     0      0    0     0      0    0     0       0
Growth  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
InitBs     0    0     0      0    0     0      0    0     0      0    0     0       0
Zn 1       0  115     0      0  115     0      0    0     0      0    0     0     230
Zn 2       0  115     0      0  115     0      0    0     0      0    0     0     230
Zn 3       7    0     0      0    0   139    139    0     7      0    0     0     292
Added      7  231     0      0  231   139    139    0     7      0    0     0     754
PassBy     0    0     0      0    0     0      0    0     0      0    0     0       0
Future     7  231     0      0  231   139    139    0     7      0    0     0     754
UseAdj  1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00    1.00
Total      7  231     0      0  231   139    139    0     7      0    0     0     754
```

```
------------------------------------------------------------------------------
                              EXISTING CONDITIONS
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
Volume     Northbound       Southbound        Eastbound        Westbound     Total
Type    Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right  Volume


#16 Hegan lane / ARTC Access
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del= 3.4E+0038,V/C=0.000)][+0.000 V
Base       0    0     0     0    0     0     0    0     0     0    0     0       0
Growth  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
InitBs     0    0     0     0    0     0     0    0     0     0    0     0       0
Zn 1       0    0     0     0    0     0     0    0     0     0    0     0       0
Zn 2       0    0     0     0    0     0     0    0     0     0    0     0       0
Zn 3       2    0   147     0    0     0     0    0     2   147    0     0     298
Added      2    0   147     0    0     0     0    0     2   147    0     0     298
PassBy     0    0     0     0    0     0     0    0     0     0    0     0       0
Future     2    0   147     0    0     0     0    0     2   147    0     0     298
UseAdj  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00    1.00
Total      2    0   147     0    0     0     0    0     2   147    0     0     298
```

KDA

```
------------------------------------------------------------------------------
                           special event ex pm
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                          Trip Generation Report

                          Forecast for pm special

Zone                                     Rate   Rate    Trips Trips   Total % Of
 #   Subzone       Amount  Units          In     Out     In    Out    Trips Total

---- ------------ ------- -------------- ------ ------  ----- -----   ----- -----

  3                125.00 students         0.80   8.00    100  1000    1100 100.0
          Zone 3 Subtotal ............................    100  1000    1100 100.0


------------------------------------------------------------------------------
TOTAL ................................................    100  1000    1100 100.0
```

```
--------------------------------------------------------------------------------
                              special event ex pm
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                           Trip Distribution Report

                          Percent Of Trips pm special

               To Gates
             5     7     8     9
Zone       ----- ----- ----- -----

   1        0.0   0.0   0.0   0.0
   2        0.0   0.0   0.0   0.0
   3       10.0  20.0  60.0  10.0
```

```
--------------------------------------------------------------------------------
                               special event ex pm
                            5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
Volume     Northbound        Southbound        Eastbound         Westbound     Total
Type    Left Thru Right   Left Thru Right   Left Thru Right   Left Thru Right  Volume


#10 2nd Street / Chestnut St
Base      50    0    62      0    0     0      0  558    49     32  449     0   1200
Added      0    0     0      0    0     0      0    0     0      0    0     0      0
PassBy   -50    0   -62      0    0     0      0    0   -49    -32    0     0   -193
Total      0    0     0      0    0     0      0  558     0      0  449     0   1007

#11 2nd Street / Normal Ave
Base      18    1    30     18    3    13     12  562    48     50  449    14   1218
Added      0    0     0      0    0     0      0    0     0      0    0     0      0
PassBy     0    0    62      0    0     0      0  -62     0     32  -32     0      0
Total     18    1    92     18    3    13     12  500    48     82  417    14   1218

#12 2nd Street / Broadway
Base       0    0     0     77  745   113      0  539   126    100  367     0   2067
Added      0    0     0      0    0     0      0    0     0      0    0     0      0
Total      0    0     0     77  745   113      0  539   126    100  367     0   2067

#13 2nd Street / Main Street
Base     135  991   176      0    0     0    148  469     0      0  332    37   2288
Added      0    0     0      0    0     0      0    0     0      0    0     0      0
Total    135  991   176      0    0     0    148  469     0      0  332    37   2288

#14 Park Avenue / Midway
Base       0  267   537    411  232     1      2    0     0    468    2   328   2248
Added      0  200   600      0   20     0      0    0     0     60    0     0    880
Total      0  467  1137    411  252     1      2    0     0    528    2   328   3128

#15 Midway / Hegan Lane
Base      16  374     0      5  408   286    416    0    32      0    0    10   1547
Added     10    0     0      0    0    80    800    0   100      0    0     0    990
Total     26  374     0      5  408   366   1216    0   132      0    0    10   2537

#16 Hegan lane / ARTC Access
Base       8    0    24      0    0     0      0  136     1      7  169     0    345
Added    100    0   900      0    0     0      0    0    10     90    0     0   1100
Total    108    0   924      0    0     0      0  136    11     97  169     0   1445
```

```
------------------------------------------------------------------------------
                             special event ex pm
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #14 Park Avenue / Midway
******************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):        0.946
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        47.2
Optimal Cycle:       116                 Level Of Service:                 D
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:      Split Phase      Split Phase      Split Phase      Split Phase
Rights:          Ignore           Include          Include          Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  1  0  1   1  0  1! 0  0   1  0  0  0  0   1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      0   267   537   411   232     1     2     0     0   468     2   328
Growth Adj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   0   267   537   411   232     1     2     0     0   468     2   328
Added Vol:     0   200   600     0    20     0     0     0     0    60     0     0
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   0   467  1137   411   252     1     2     0     0   528     2   328
User Adj:   1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Volume:    0   467     0   411   252     1     2     0     0   528     2     0
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   0   467     0   411   252     1     2     0     0   528     2     0
PCE Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:    0   467     0   411   252     1     2     0     0   528     2     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:   1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment: 1.00  0.98  1.00  0.95  0.95  0.95  0.93  1.00  1.00  0.93  0.98  1.00
Lanes:      1.00  1.00  1.00  1.44  0.55  0.01  1.00  0.00  0.00  1.00  1.00  1.00
Final Sat.: 1900  1862  1900  2616   993     4  1769     0     0  1769  1862  1900
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:    0.00  0.25  0.00  0.16  0.25  0.25  0.00  0.00  0.00  0.30  0.00  0.00
Crit Moves:       ****                    ****  ****              ****
Green/Cycle: 0.00 0.27  0.00  0.27  0.27  0.27  0.00  0.00  0.00  0.32  0.32  0.00
Volume/Cap: 0.00  0.95  0.00  0.59  0.95  0.95  0.95  0.00  0.00  0.95  0.00  0.00
Delay/Veh:   0.0  56.3   0.0  26.2  50.4  50.4 603.7   0.0   0.0  52.1  18.8   0.0
User DelAdj: 1.00 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  0.0  56.3   0.0  26.2  50.4  50.4 603.7   0.0   0.0  52.1  18.8   0.0
DesignQueue:   0    16     0    14     9     0     0     0     0    17     0     0
******************************************************************************
```

```
-------------------------------------------------------------------------------
                            special event ex pm
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        1.475
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):      227.0
Optimal Cycle:       180               Level Of Service:                 F
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:          Include          Include           Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  0  1  0   1  0  1  0  1   0  0  1! 0  0   0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      16  374    0    5  408  286  416    0   32    0    0   10
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   16  374    0    5  408  286  416    0   32    0    0   10
Added Vol:     10    0    0    0    0   80  800    0  100    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   26  374    0    5  408  366 1216    0  132    0    0   10
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume:    27  394    0    5  429  385 1280    0  139    0    0   11
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   27  394    0    5  429  385 1280    0  139    0    0   11
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:    27  394    0    5  429  385 1280    0  139    0    0   11
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.93 0.98 1.00 0.93 0.98 0.83 0.71 1.00 0.71 1.00 1.00 0.85
Lanes:       1.00 1.00 0.00 1.00 1.00 1.00 0.90 0.00 0.10 0.00 0.00 1.00
Final Sat.:  1769 1862    0 1769 1862 1583 1218    0  132    0    0 1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.21 0.00 0.00 0.23 0.24 1.05 0.00 1.05 0.00 0.00 0.01
Crit Moves:  ****                     **** ****
Green/Cycle: 0.01 0.17 0.00 0.00 0.16 0.16 0.71 0.00 0.71 0.00 0.00 0.71
Volume/Cap:  1.47 1.22 0.00 1.22 1.40 1.47 1.47 0.00 1.47 0.00 0.00 0.01
Delay/Veh:  423.4  158  0.0 585.1  231 266.7 230.9 0.0 230.9  0.0  0.0  3.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 423.4  158  0.0 585.1  231 266.7 230.9 0.0 230.9  0.0  0.0  3.3
DesignQueue:    1   15    0    0   17   15   20    0    2    0    0    0
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                          special event ex pm
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #16 Hegan lane / ARTC Access
*******************************************************************************
Average Delay (sec/veh):    166.4  119.4   Worst Case Level Of Service:        F
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        8    0    24    0    0     0     0  136     1     7  169     0
Growth Adj:   1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     8    0    24    0    0     0     0  136     1     7  169     0
Added Vol:     100    0   900    0    0     0     0    0    10    90    0     0
PasserByVol:     0    0     0    0    0     0     0    0     0     0    0     0
Initial Fut:   108    0   924    0    0     0     0  136    11    97  169     0
User Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95 0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    114    0   973    0    0     0     0  143    12   102  178     0
Reduct Vol:      0    0     0    0    0     0     0    0     0     0    0     0
Final Vol.:    114    0   973    0    0     0     0  143    12   102  178     0
Critical Gap Module:
Critical Gp:   6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   531 xxxx   149  xxxx xxxx xxxxx  xxxx xxxx xxxxx   155 xxxx xxxxx
Potent Cap.:   512 xxxx   903  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1426 xxxx xxxxx
Move Cap.:     483 xxxx   903  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1426 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  828 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  166 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
Shared LOS:     *    F     *     *    *     *     *    *     *     A    *     *
ApproachDel:      166.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        F                *                *                *
```

```
------------------------------------------------------------------------------
                           special event ex pm
                      5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                  Level Of Service Computation Report
         2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #15 Midway / Hegan Lane
******************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        1.079
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        78.3
Optimal Cycle:       180               Level Of Service:                  E
******************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Lanes:       1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      16  374     0     5  408   286   416    0    32     0    0    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   16  374     0     5  408   286   416    0    32     0    0    10
Added Vol:      5    0     0     0    0    42   416    0    52     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   21  374     0     5  408   328   832    0    84     0    0    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    22  394     0     5  429   345   876    0    88     0    0    11
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   22  394     0     5  429   345   876    0    88     0    0    11
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    22  394     0     5  429   345   876    0    88     0    0    11
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  1.00  0.93 0.98  0.83  0.71 1.00  0.71  1.00 1.00  0.85
Lanes:       1.00 1.00  0.00  1.00 1.00  1.00  0.91 0.00  0.09  0.00 0.00  1.00
Final Sat.:  1769 1862     0  1769 1862  1583  1225    0   123     0    0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.21  0.00  0.00 0.23  0.22  0.71 0.00  0.71  0.00 0.00  0.01
Crit Moves:  ****                  ****        ****
Green/Cycle: 0.01 0.22  0.00  0.00 0.21  0.21  0.66 0.00  0.66  0.00 0.00  0.66
Volume/Cap:  1.08 0.95  0.00  0.95 1.08  1.02  1.08 0.00  1.08  0.00 0.00  0.01
Delay/Veh:  265.2 63.0   0.0 398.2 99.4  85.9  67.3  0.0  67.3   0.0  0.0   4.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 265.2 63.0   0.0 398.2 99.4  85.9  67.3  0.0  67.3   0.0  0.0   4.6
DesignQueue:    1   14     0     0   16    13    15    0     2     0    0     0
******************************************************************************
```

```
-------------------------------------------------------------------------------
                              special event ex pm
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                 Level Of Service Detailed Computation Report
                         2000 HCM Operations Method
                          Future Volume Alternative
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
HCM Ops Adjusted Lane Utilization Module:
Lanes:        1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  0  1
Lane Group:     L   RT    RT     L    T    R     LTR  LTR   LTR  xxxx xxxx    R
#LnsInGrps:     1    1     1     1    1    1      1    1     1     0    0     1
------------|----------------||----------------||----------------||----------------|
HCM Ops Input Saturation Adj Module:
Lane Width:    12   12    12    12   12   12     12   12    12    12   12    12
CrosswalkWid         8               8                8                8
% Hev Veh:           2               2                2                2
Grade:              0%              0%               0%               0%
Parking/Hr:         No              No               No               No
Bus Stp/Hr:          0               0                0                0
Area Type:    < < < < < < < < < < < < < < Other > > > > > > > > > > > > > >
Cnft Ped/Hr:         0               0                0                0
ExclusiveRT:      Include          Include          Include          Include
% RT Prtct:          0               0                0                0
------------|----------------||----------------||----------------||----------------|
HCM Ops f(lt) Adj Case Module:
f(lt) Case:     1 xxxx  xxxx     1 xxxx  xxxx      5 xxxx     5   xxxx xxxx  xxxx
------------|----------------||----------------||----------------||----------------|
HCM Ops Saturation Adj Module:
Ln Wid Adj:  1.00 1.00 xxxxx  1.00 1.00  1.00  1.00 xxxx  1.00   xxxx xxxx  1.00
Hev Veh Adj: 0.98 0.98 xxxxx  0.98 0.98  0.98  0.98 xxxx  0.98   xxxx xxxx  0.98
Grade Adj:   1.00 1.00 xxxxx  1.00 1.00  1.00  1.00 xxxx  1.00   xxxx xxxx  1.00
Parking Adj: xxxx 1.00 xxxxx  xxxx xxxx  1.00  1.00 xxxx  1.00   xxxx xxxx  1.00
Bus Stp Adj: xxxx 1.00 xxxxx  xxxx xxxx  1.00  1.00 xxxx  1.00   xxxx xxxx  1.00
Area Adj:    1.00 1.00 xxxxx  1.00 1.00  1.00  1.00 xxxx  1.00   xxxx xxxx  1.00
RT Adj:      xxxx xxxx xxxxx  xxxx xxxx  0.85  0.99 xxxx  0.99   xxxx xxxx  0.87
LT Adj:      0.95 xxxx xxxxx  0.95 xxxx xxxxx  0.73 xxxx  0.73   xxxx xxxx xxxxx
PedBike Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00 1.00  1.00
HCM Sat Adj: 0.93 0.98  1.00  0.93 0.98  0.83  0.71 1.00  0.71   1.00 1.00  0.85
Usr Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00 1.00  1.00
MLF Sat Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00   1.00 1.00  1.00
Fnl Sat Adj: 0.93 0.98  1.00  0.93 0.98  0.83  0.71 1.00  0.71   1.00 1.00  0.85
------------|----------------||----------------||----------------||----------------|
Delay Adjustment Factor Module:
Coordinated:  < < < < < < < < < < < < < < < No   > > > > > > > > > > > > > > > >
Signal Type:  < < < < < < < < < < < < <    Actuated    > > > > > > > > > > > > >
DelAdjFctr:  1.00 1.00  0.00  1.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  1.00
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                              special event ex pm
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
  Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
                          2000 HCM Operations Method
                           Future Volume Alternative
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Approach:                                      North    South     East     West
Cycle Length, C:                              xxxxxx   xxxxxx       80   xxxxxx
Actual Green Time Per Lane Group, G:          xxxxxx   xxxxxx    51.99   xxxxxx
Effective Green Time Per Lane Group, g:       xxxxxx   xxxxxx    52.99   xxxxxx
Opposing Effective Green Time, go:            xxxxxx   xxxxxx    52.99   xxxxxx
Number Of Opposing Lanes, No:                 xxxxxx   xxxxxx        0   xxxxxx
Number Of Lanes In Lane Group, N:             xxxxxx   xxxxxx        1   xxxxxx
Adjusted Left-Turn Flow Rate, Vlt:            xxxxxx   xxxxxx      876   xxxxxx
Proportion of Left Turns in Lane Group, Plt:  xxxxxx   xxxxxx     0.91   xxxxxx
Proportion of Left Turns in Opp Flow, Plto:   xxxxxx   xxxxxx     1.00   xxxxxx
Left Turns Per Cycle, LTC:                    xxxxxx   xxxxxx    19.47   xxxxxx
Adjusted Opposing Flow Rate, Vo:              xxxxxx   xxxxxx        0   xxxxxx
Opposing Flow Per Lane Per Cycle, Volc:       xxxxxx   xxxxxx     0.00   xxxxxx
Opposing Platoon Ratio, Rpo:                  xxxxxx   xxxxxx     1.00   xxxxxx
Lost Time Per Phase, tl:                      xxxxxx   xxxxxx     3.00   xxxxxx
Eff grn until arrival of left-turn car, gf:   xxxxxx   xxxxxx     0.00   xxxxxx
Opposing Queue Ratio, qro:                    xxxxxx   xxxxxx     0.34   xxxxxx
Eff grn blocked by opposing queue, gq:        xxxxxx   xxxxxx     0.00   xxxxxx
Eff grn while left turns filter thru, gu:     xxxxxx   xxxxxx    52.99   xxxxxx
Max opposing cars arriving during gq-gf, n:   xxxxxx   xxxxxx     0.00   xxxxxx
Proportion of Opposing Thru & RT cars, ptho:  xxxxxx   xxxxxx     0.00   xxxxxx
Left-turn Saturation Factor, fs:              xxxxxx   xxxxxx   xxxxxx   xxxxxx
Proportion of Left Turns in Shared Lane, pl:  xxxxxx   xxxxxx   xxxxxx   xxxxxx
Through-car Equivalents, el1:                 xxxxxx   xxxxxx     1.40   xxxxxx
Single Lane Through-car Equivalents, el2:     xxxxxx   xxxxxx     1.00   xxxxxx
Minimum Left Turn Adjustment Factor, fmin:    xxxxxx   xxxxxx     0.07   xxxxxx
Single Lane Left Turn Adjustment Factor, fm:  xxxxxx   xxxxxx     0.73   xxxxxx
Left Turn Adjustment Factor, flt:             xxxxxx   xxxxxx     0.73   xxxxxx
*******************************************************************************
```

```
MITIG8 - ex pm special      Thu Dec 9, 2004 09:02:08              Page 1-1
-------------------------------------------------------------------------------

                              special event ex pm
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                       Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Cycle (sec):           80              Critical Vol./Cap. (X):        0.984
Loss Time (sec):        9 (Y+R =  4 sec) Average Delay (sec/veh):      52.2
Optimal Cycle:        147              Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0     0     0     0     0     0     0
Lanes:        1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      16  374     0     5  408   286   416     0    32     0     0    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   16  374     0     5  408   286   416     0    32     0     0    10
Added Vol:      4    0     0     0    0    32   320     0    40     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:   20  374     0     5  408   318   736     0    72     0     0    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    21  394     0     5  429   335   775     0    76     0     0    11
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Reduced Vol:   21  394     0     5  429   335   775     0    76     0     0    11
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    21  394     0     5  429   335   775     0    76     0     0    11
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  1.00  0.93 0.98  0.83  0.71 1.00  0.71  1.00 1.00  0.85
Lanes:       1.00 1.00  0.00  1.00 1.00  1.00  0.91 0.00  0.09  0.00 0.00  1.00
Final Sat.:  1769 1862     0  1769 1862  1583  1228    0   120     0    0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.21  0.00  0.00 0.23  0.21  0.63 0.00  0.63  0.00 0.00  0.01
Crit Moves:  ****                  ****        ****
Green/Cycle: 0.01 0.24  0.00  0.00 0.23  0.23  0.64 0.00  0.64  0.00 0.00  0.64
Volume/Cap:  0.98 0.87  0.00  0.87 0.98  0.90  0.98 0.00  0.98  0.00 0.00  0.01
Delay/Veh:  226.7 45.7   0.0 324.5 69.3  54.4  40.5  0.0  40.5   0.0  0.0   5.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 226.7 45.7   0.0 324.5 69.3  54.4  40.5  0.0  40.5   0.0  0.0   5.2
DesignQueue:    1   14     0     0   16    12    14    0     1     0    0     0
*******************************************************************************




  Traffix 7.5.1015 (c) 2000 Dowling Assoc. Licensed to kdANDERSON TRANSP.
```

```
-------------------------------------------------------------------------------
                           special event ex pm
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #14 Park Avenue / Midway
*******************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):         0.936
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):         42.9
Optimal Cycle:       112                Level Of Service:                   D
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Ignore          Include          Include          Ignore
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1    2  0  0  1  0    1  0  0  0  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  267   537    411  232     1     2    0     0   468    2   328
Growth Adj:  1.00 1.70  1.50   1.10 1.70  1.00  1.00 1.00  1.00  1.20 1.00  1.10
Initial Bse:    0  454   806    452  394     1     2    0     0   562    2   361
Added Vol:      0   19     1     41   32     0     0    0     0     0    0    16
PasserByVol:    0    0     0      0    0     0     0    0     0     0    0     0
Initial Fut:    0  473   807    493  426     1     2    0     0   562    2   377
User Adj:    1.00 1.00  0.00   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.00   0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.00
PHF Volume:     0  525     0    548  474     1     2    0     0   624    2     0
Reduct Vol:     0    0     0      0    0     0     0    0     0     0    0     0
Reduced Vol:    0  525     0    548  474     1     2    0     0   624    2     0
PCE Adj:     1.00 1.00  0.00   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  0.00   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:     0  525     0    548  474     1     2    0     0   624    2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900   1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.98  1.00   0.90 0.98  0.98  0.93 1.00  1.00  0.93 0.98  1.00
Lanes:       1.00 1.00  1.00   2.00 0.99  0.01  1.00 0.00  0.00  1.00 1.00  1.00
Final Sat.:  1900 1862  1900   3432 1858     4  1769    0     0  1769 1862  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.28  0.00   0.16 0.26  0.26  0.00 0.00  0.00  0.35 0.00  0.00
Crit Moves:       ****         ****             ****             ****
Green/Cycle: 0.00 0.30  0.00   0.17 0.47  0.47  0.00 0.00  0.00  0.38 0.38  0.00
Volume/Cap:  0.00 0.94  0.00   0.94 0.54  0.54  0.94 0.00  0.00  0.94 0.00  0.00
Delay/Veh:    0.0 50.5   0.0   55.3 15.7  15.7 590.0  0.0   0.0  44.6 15.5   0.0
User DelAdj: 1.00 1.00  1.00   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 50.5   0.0   55.3 15.7  15.7 590.0  0.0   0.0  44.6 15.5   0.0
DesignQueue:    0   18     0     21   12     0     0    0     0    19    0     0
*******************************************************************************
```

```
MITIG8 - cum plus Master PlThu Dec 9, 2004 13:30:12                 Page 1-1
-------------------------------------------------------------------------------
                            special event ex pm
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):        0.735
Loss Time (sec):       9 (Y+R =  4 sec)  Average Delay (sec/veh):        20.1
Optimal Cycle:        53                 Level Of Service:                  C
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  1  0    1  0  1  0  1    1  0  1! 0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16  374     1     5  408   286   416    0    32     0    0    10
Growth Adj:  1.90 1.60  1.60  1.60 1.60  1.60  1.60 1.60  1.90  1.00 1.00  1.60
Initial Bse:   30  598     2     8  653   458   666    0    61     0    0    16
Added Vol:      0   12     0     0   29     3     7    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   30  610     2     8  682   461   673    0    61     0    0    16
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    32  643     2     8  718   485   708    0    64     0    0    17
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   32  643     2     8  718   485   708    0    64     0    0    17
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    32  643     2     8  718   485   708    0    64     0    0    17
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  0.98  0.93 0.98  0.83  0.93 1.00  0.93  1.00 1.00  0.85
Lanes:       1.00 0.99  0.01  1.00 1.00  1.00  1.85 0.00  0.15  0.00 0.00  1.00
Final Sat.:  1769 1856     6  1769 1862  1583  3248    0   269     0    0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.35  0.35  0.00 0.39  0.31  0.22 0.00  0.24  0.00 0.00  0.01
Crit Moves:  ****                  ****                       ****        ****
Green/Cycle: 0.02 0.54  0.54  0.01 0.52  0.52  0.32 0.00  0.32  0.00 0.00  0.01
Volume/Cap:  0.73 0.64  0.64  0.64 0.73  0.58  0.67 0.00  0.73  0.00 0.00  0.73
Delay/Veh:   86.8 14.2  14.2 115.9 17.6  14.1  25.0  0.0  26.7   0.0  0.0 116.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  86.8 14.2  14.2 115.9 17.6  14.1  25.0  0.0  26.7   0.0  0.0 116.3
DesignQueue:    1   14     0     0   17    11    22    0     2     0    0     1
*******************************************************************************




  Traffix 7.5.1015 (c) 2000 Dowling Assoc. Licensed to kdANDERSON TRANSP.
```

KDA

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                                Scenario Report
Scenario:             cum plus Master Plan PM

Command:              Default Command
Volume:               cum pm
Geometry:             existing
Impact Fee:           Default Impact Fee
Trip Generation:      pm peak
Trip Distribution:    current
Paths:                Default Paths
Routes:               Default Routes
Configuration:        Default Configuration
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                            Trip Generation Report

                             Forecast for pm peak

Zone                                        Rate   Rate    Trips Trips   Total % Of
 #   Subzone        Amount  Units            In     Out     In    Out    Trips Total

---- ------------ ------- -------------- ------ ------  ----- -----  ----- -----

  1                1940.00 students         0.06   0.15    116   291    407  48.5
          Zone 1 Subtotal ............................    116   291    407  48.5

  2                1935.00 students         0.06   0.15    116   290    406  48.3
          Zone 2 Subtotal ............................    116   290    406  48.3

  3                 125.00 students         0.06   0.15      8    19     27   3.2
          Zone 3 Subtotal ............................      8    19     27   3.2


--------------------------------------------------------------------------------
TOTAL ................................................    240   600    840 100.0
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                        Trip Distribution Report

                        Percent Of Trips current

                                To Gates
            1     2     3     4     5     6     7     8     9    10
Zone      ----- ----- ----- ----- ----- ----- ----- ----- ----- -----

  1        15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
  2        15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
  3        15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                          Turning Movement Report
                                  pm peak

Volume    Northbound       Southbound       Eastbound        Westbound     Total
Type   Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume

#1 Nord Ave / West Sacramento Ave
Base     21  774   311   402  874    10    22   25    10   368   35   472   3323
Added     0   30     1    23   13     0     0    0     0     2    0    60    129
Total    21  804   312   425  887    10    22   25    10   370   35   532   3452

#2 Sacramento Ave / Warner Ave
Base    179  356    96    29  241    96   113  273   169   111  493    69   2224
Added    59   59   152     5   23     0     0    0    23    61    3    12    397
Total   238  415   248    34  264    96   113  273   192   172  496    81   2621

#3 Esplanade / 1st Avenue
Base      0 1344    87     0 1139    91    94  485    49   117  528   153   4087
Added     0   46    55     0   30     0    29   35     0    31    5     0    231
Total     0 1390   142     0 1169    91   123  520    49   148  533   153   4318

#4 Esplanade / Sacramento Ave
Base    407 1556     0     0 1183   217     0    0   282     0    0     0   3645
Added    54  101     0     0   40    20     0    0    85     0    0     0    300
Total   461 1657     0     0 1223   237     0    0   367     0    0     0   3945

#5 Warner Ave / Legion Avenue
Base      0  497   113   133  407     0     0    0     0    68    0   103   1320
Added     0   57     4    16   60     0     0    0     0     1    0     6    144
Total     0  554   117   149  467     0     0    0     0    69    0   109   1464

#6 Walnut Avenue / 2nd Street
Base     69  762   140   144  813    85    70  118    88   135   81   221   2726
Added     0   14     2     8    7     0     0    0     0     5    0    17     53
Total    69  776   142   152  820    85    70  118    88   140   81   238   2779

#7 2nd Avenue / Cherry St
Base      5   20    21   177   81    55    35  382     5    31  426   103   1340
Added     0    0     0     0    0     0     0   10     0     0   23     0     33
Total     5   20    21   177   81    55    35  392     5    31  449   103   1373

#8 2nd Street / Ivy Street / Warner Ave
Base     75  238    73   190  268    56    25  510    52    43  429   187   2145
Added     0   22     3    41   19     2     1    9     0     7   21    38    163
Total    75  260    76   231  287    58    26  519    52    50  450   225   2308

#9 2nd Street / Hazel St
Base     20    0    48     0    1     4     3  741    27    27  627     1   1499
Added    27    0    51     0    0     0     0   42    11    20   38     0    189
PassBy   65    0     0     0    0     0     0  -63    63     0  -65     0      0
Total   112    0    99     0    1     4     3  720   101    47  600     1   1688
```

```
---------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------
Volume    Northbound       Southbound       Eastbound        Westbound     Total
Type   Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume


#10 2nd Street / Chestnut St
Base     65    0    81     0    0     0     0  725    64    42  584     0   1560
Added     0    0     0     0    0     0     0   93     0     0   58     0    151
PassBy  -65    0   -80     0    0     0     0    0   -63   -41    0     0   -249
Total     0    0     1     0    0     0     0  818     1     1  642     0   1462

#11 2nd Street / Normal Ave
Base     23    1    39    23    4    17    16  731    62    65  584    18   1583
Added    25    0    89     0    0     0     0   83    10    35   33     0    275
PassBy    0    0    80     0    0     0     0  -80     0    41  -41     0      0
Total    48    1   208    23    4    17    16  734    72   141  576    18   1858

#12 2nd Street / Broadway
Base      0    0     0   100  969   147     0  701   164   130  477     0   2687
Added     0    0     0     7   85    26     0   82    90     2   43     0    335
Total     0    0     0   107 1054   173     0  783   254   132  520     0   3022

#13 2nd Street / Main Street
Base    176 1288   229     0    0     0   192  610     0     0  432    48   2974
Added    36   68     5     0    0     0    65   25     0     0    9     3    211
Total   212 1356   234     0    0     0   257  635     0     0  441    51   3185

#14 Park Avenue / Midway
Base      0  454   806   452  394     1     2    0     0   562    2   361   3033
Added     0   28     1    41   36     0     0    0     0     1    0    16    123
Total     0  482   807   493  430     1     2    0     0   563    2   377   3156

#15 Midway / Hegan Lane
Base     30  598     2     8  653   458   666    0    61     0    0    16   2491
Added     0   12     0     0   29     7    18    0     1     0    0     0     67
Total    30  610     2     8  682   465   684    0    62     0    0    16   2558

#16 Hegan lane / ARTC Access
Base      8    0    24     0    0     0     0  258     1     7  321     0    620
Added     0    0    19     0    0     0     0    0     0     8    0     0     27
Total     8    0    43     0    0     0     0  258     1    15  321     0    647
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                             Impact Analysis Report
                                Level Of Service

Intersection                                Base           Future        Change
                                         Del/   V/       Del/   V/         in
                                     LOS Veh    C    LOS Veh    C
#  1 Nord Ave / West Sacramento Ave  F 128.4 1.339   F 150.2 1.419   +21.811 D/V

#  2 Sacramento Ave / Warner Ave     D  37.6 0.776   D  50.3 0.910   +12.725 D/V

#  3 Esplanade / 1st Avenue          C  34.8 0.944   D  40.5 0.980   + 5.770 D/V

#  4 Esplanade / Sacramento Ave      F  60.0 0.000   F 121.0 0.000   + 0.000 V/C

#  5 Warner Ave / Legion Avenue      A   9.6 0.533   A   9.7 0.577   + 0.142 D/V

#  6 Walnut Avenue / 2nd Street      C  20.9 0.649   C  21.3 0.669   + 0.442 D/V

#  7 2nd Avenue / Cherry St          F 278.6 0.000   F 313.3 0.000   + 0.000 V/C

#  8 2nd Street / Ivy Street / Warn  B  14.9 0.510   B  15.9 0.603   + 0.990 D/V

#  9 2nd Street / Hazel St           C  22.3 0.000   F 194.2 0.000   + 0.000 V/C

# 10 2nd Street / Chestnut St        E  36.7 0.000   B  11.8 0.000   + 0.000 V/C

# 11 2nd Street / Normal Ave         E  37.5 0.000   F 177.7 0.000   + 0.000 V/C

# 12 2nd Street / Broadway           B  16.9 0.650   B  19.7 0.861   + 2.791 D/V

# 13 2nd Street / Main Street        C  20.9 0.827   C  26.1 0.915   + 5.264 D/V

# 14 Park Avenue / Midway            F 103.8 1.182   F 121.5 1.244   +17.763 D/V

# 15 Midway / Hegan Lane             E  67.2 1.076   E  74.9 1.111   + 7.704 D/V

# 16 Hegan lane / ARTC Access        B  10.8 0.000   B  10.7 0.000   + 0.000 V/C
```

```
--------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
********************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):        0.797
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):       23.7
Optimal Cycle:       55               Level Of Service:                 C
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Permitted        Permitted
Rights:            Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  0  1! 0  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       5  360   171   352  653    11    12    8     2   143   10   230
Growth Adj: 1.00 1.00   1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    5  360   171   352  653    11    12    8     2   143   10   230
User Adj:   1.00 1.00   1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    0.90 0.90   0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     6  400   190   391  726    12    13    9     2   159   11   256
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    6  400   190   391  726    12    13    9     2   159   11   256
PCE Adj:    1.00 1.00   1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00   1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     6  400   190   391  726    12    13    9     2   159   11   256
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900 1900   1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment: 0.93 0.93   0.93  0.93 0.98  0.98  0.81 0.82  0.81  0.71 0.84  0.76
Lanes:      1.00 0.68   0.32  1.00 0.98  0.02  0.55 0.37  0.08  1.00 0.04  0.96
Final Sat.: 1769 1202    571  1769 1828    30   834  577   128  1344   60  1396
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.33   0.33  0.22 0.40  0.40  0.02 0.02  0.02  0.12 0.18  0.18
Crit Moves:      ****         ****                                     ****
Green/Cycle: 0.01 0.42  0.42  0.28 0.69  0.69  0.23 0.23  0.23  0.23 0.23  0.23
Volume/Cap:  0.58 0.80  0.80  0.80 0.58  0.58  0.07 0.07  0.07  0.51 0.80  0.80
Delay/Veh:  100.6 26.4  26.4  35.7  7.1   7.1  24.2 24.2  24.2  28.4 41.6  41.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 100.6 26.4  26.4  35.7  7.1   7.1  24.2 24.2  24.2  28.4 41.6  41.6
DesignQueue:    0   11     5    13   11     0     0    0     0     6    0     9
********************************************************************************
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
*******************************************************************************
Cycle (sec):        80              Critical Vol./Cap. (X):        1.339
Loss Time (sec):     6 (Y+R =  4 sec) Average Delay (sec/veh):     128.4
Optimal Cycle:     180              Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected        Permitted        Permitted
Rights:         Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  0  1  0    1  0  0  1  0    0  0  1! 0  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      16   595   239   309   672     8    17    19     8   283    27   363
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   21   774   311   402   874    10    22    25    10   368    35   472
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    22   814   327   423   920    11    23    26    11   387    37   497
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   22   814   327   423   920    11    23    26    11   387    37   497
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    22   814   327   423   920    11    23    26    11   387    37   497
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.94  0.94  0.93  0.98  0.98  0.40  0.40  0.40  0.74  0.84  0.78
Lanes:       1.00  0.71  0.29  1.00  0.99  0.01  0.38  0.44  0.18  1.00  0.06  0.94
Final Sat.:  1769  1271   511  1769  1836    22   294   332   141  1398   103  1382
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.01  0.64  0.64  0.24  0.50  0.50  0.08  0.08  0.08  0.28  0.36  0.36
Crit Moves:        ****        ****                                       ****
Green/Cycle: 0.02  0.48  0.48  0.18  0.64  0.64  0.27  0.27  0.27  0.27  0.27  0.27
Volume/Cap:  0.78  1.34  1.34  1.34  0.78  0.78  0.29  0.29  0.29  1.03  1.34  1.34
Delay/Veh:  121.1   182 181.5 205.5  13.8  13.8  24.0  24.0  24.0  84.0   198 198.1
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh: 121.1   182 181.5 205.5  13.8  13.8  24.0  24.0  24.0  84.0   198 198.1
DesignQueue:    1    22     9    16    17     0     1     1     0    13     1    17
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------

                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*****************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
*****************************************************************************
Cycle (sec):          100             Critical Vol./Cap. (X):        0.776
Loss Time (sec):       12 (Y+R =  4 sec) Average Delay (sec/veh):      37.6
Optimal Cycle:         72             Level Of Service:                 D
*****************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:          Protected        Protected        Protected        Protected
Rights:             Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  0  1  0    1  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      138  274    74    22  185    74    87  210   130    85  379    53
Growth Adj:   1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   179  356    96    29  240    96   113  273   169   111  493    69
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    189  375   101    30  253   101   119  287   178   116  519    73
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   189  375   101    30  253   101   119  287   178   116  519    73
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    189  375   101    30  253   101   119  287   178   116  519    73
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.95 0.97  0.97  0.95 0.96  0.96  0.95 0.94  0.94  0.95 0.98  0.98
Lanes:        1.00 0.79  0.21  1.00 0.71  0.29  1.00 0.62  0.38  1.00 0.88  0.12
Final Sat.:   1805 1449   390  1805 1300   519  1805 1106   686  1805 1636   230
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:      0.10 0.26  0.26  0.02 0.19  0.19  0.07 0.26  0.26  0.06 0.32  0.32
Crit Moves:   ****                  ****        ****                   ****
Green/Cycle:  0.13 0.36  0.36  0.02 0.25  0.25  0.08 0.40  0.40  0.10 0.41  0.41
Volume/Cap:   0.78 0.71  0.71  0.71 0.78  0.78  0.78 0.66  0.66  0.66 0.78  0.78
Delay/Veh:    56.2 31.1  31.1  92.9 43.0  43.0  66.4 26.9  26.9  52.1 30.6  30.6
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   56.2 31.1  31.1  92.9 43.0  43.0  66.4 26.9  26.9  52.1 30.6  30.6
DesignQueue:     9   14     4     2   11     4     6   10     6     6   19     3
*****************************************************************************
```

```
-------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
              2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap. (X):        0.910
Loss Time (sec):       12 (Y+R =  4 sec) Average Delay (sec/veh):        50.3
Optimal Cycle:        114                Level Of Service:                  D
*******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     138  274    74    22  185    74    87  210   130    85  379    53
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:  179  356    96    29  240    96   113  273   169   111  493    69
Added Vol:     59   59   152     5   23     0     0    0    23    61    3    12
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  238  415   248    34  263    96   113  273   192   172  496    81
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:   251  437   261    35  277   101   119  287   202   181  522    85
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  251  437   261    35  277   101   119  287   202   181  522    85
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   251  437   261    35  277   101   119  287   202   181  522    85
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.94  0.94  0.95 0.96  0.96  0.95 0.94  0.94  0.95 0.98  0.98
Lanes:       1.00 0.63  0.37  1.00 0.73  0.27  1.00 0.59  0.41  1.00 0.86  0.14
Final Sat.:  1805 1123   671  1805 1337   487  1805 1046   736  1805 1600   260
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.39  0.39  0.02 0.21  0.21  0.07 0.27  0.27  0.10 0.33  0.33
Crit Moves:       ****        ****              ****                   ****
Green/Cycle: 0.18 0.43  0.43  0.02 0.27  0.27  0.07 0.32  0.32  0.12 0.36  0.36
Volume/Cap:  0.77 0.91  0.91  0.91 0.77  0.77  0.91 0.87  0.87  0.87 0.91  0.91
Delay/Veh:   49.8 41.7  41.7 158.3 41.1  41.1  98.2 45.9  45.9  73.5 47.1  47.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  49.8 41.7  41.7 158.3 41.1  41.1  98.2 45.9  45.9  73.5 47.1  47.1
DesignQueue:   12   15     9     2   12     4     6   12     8     9   20     3
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 Esplanade / 1st Avenue
********************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        0.944
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):       34.8
Optimal Cycle:       114              Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  2  0  1   0  0  1  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1034    67     0  876    70    72  373    38    90  406   118
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:    0 1344    87     0 1139    91    94  485    49   117  528   153
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0 1415    92     0 1199    96    99  510    52   123  556   161
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0 1415    92     0 1199    96    99  510    52   123  556   161
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0 1415    92     0 1199    96    99  510    52   123  556   161
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.94  0.94  0.95 0.99  0.99  0.95 0.97  0.97
Lanes:       0.00 2.00  1.00  0.00 1.85  0.15  1.00 0.91  0.09  1.00 0.78  0.22
Final Sat.:     0 3610  1615     0 3306   265  1805 1700   173  1805 1423   412
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.39  0.06  0.00 0.36  0.36  0.05 0.30  0.30  0.07 0.39  0.39
Crit Moves:       ****        ****              ****                   ****
Green/Cycle: 0.00 0.42  0.42  0.00 0.42  0.42  0.06 0.38  0.38  0.09 0.41  0.41
Volume/Cap:  0.00 0.94  0.14  0.00 0.87  0.87  0.94 0.78  0.78  0.78 0.94  0.94
Delay/Veh:    0.0 34.8  14.6   0.0 27.5  27.5 107.3 27.1  27.1  57.4 42.7  42.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 34.8  14.6   0.0 27.5  27.5 107.3 27.1  27.1  57.4 42.7  42.7
DesignQueue:    0   41     2     0   34     3     4   15     2     5   16     5
********************************************************************************
```

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                      Level Of Service Computation Report
              2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #3 Esplanade / 1st Avenue
******************************************************************************
Cycle (sec):           80              Critical Vol./Cap. (X):         0.980
Loss Time (sec):        9 (Y+R =  4 sec) Average Delay (sec/veh):        40.5
Optimal Cycle:        143              Level Of Service:                   D
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Protected        Protected
Rights:           Include          Include           Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  0  2  0  1    0  0  1  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1034    67     0  876    70    72  373    38    90  406   118
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:    0 1344    87     0 1139    91    94  485    49   117  528   153
Added Vol:      0   46    55     0   30     0    29   35     0    31    5     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1390   142     0 1169    91   123  520    49   148  533   153
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0 1463   150     0 1230    96   129  547    52   156  561   161
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0 1463   150     0 1230    96   129  547    52   156  561   161
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0 1463   150     0 1230    96   129  547    52   156  561   161
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.94  0.94  0.95 0.99  0.99  0.95 0.97  0.97
Lanes:       0.00 2.00  1.00  0.00 1.86  0.14  1.00 0.91  0.09  1.00 0.78  0.22
Final Sat.:     0 3610  1615     0 3312   258  1805 1713   163  1805 1428   410
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.41  0.09  0.00 0.37  0.37  0.07 0.32  0.32  0.09 0.39  0.39
Crit Moves:       ****        ****             ****                   ****
Green/Cycle: 0.00 0.41  0.41  0.00 0.41  0.41  0.07 0.37  0.37  0.10 0.40  0.40
Volume/Cap:  0.00 0.98  0.22  0.00 0.90  0.90  0.98 0.86  0.86  0.86 0.98  0.98
Delay/Veh:    0.0 41.7  15.3   0.0 29.6  29.6 109.0 33.3  33.3  66.1 51.7  51.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 41.7  15.3   0.0 29.6  29.6 109.0 33.3  33.3  66.1 51.7  51.7
DesignQueue:    0   42     4     0   35     3     5   17     2     6   17     5
******************************************************************************
```

```
-------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
              2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #4 Esplanade / Sacramento Ave
*******************************************************************************
Average Delay (sec/veh):      60.0  10.4     Worst Case Level Of Service:      F
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0   0  0  1  1  0   0  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     313 1197     0     0  910   167     0     0   217     0     0     0
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:  407 1556     0     0 1183   217     0     0   282     0     0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:   428 1638     0     0 1245   229     0     0   297     0     0     0
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Final Vol.:   428 1638     0     0 1245   229     0     0   297     0     0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1474 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   737  xxxx xxxx xxxxx
Potent Cap.:  453 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   361  xxxx xxxx xxxxx
Move Cap.:    453 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   361  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del: 60.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  47.8 xxxxx xxxx xxxxx
LOS by Move:    F    *     *     *    *     *     *    *     E     *    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx             47.8            xxxxxx
ApproachLOS:        *                *                E                *
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Esplanade / Sacramento Ave
*******************************************************************************
Average Delay (sec/veh):     121.0   24.7  Worst Case Level Of Service:       F
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled       Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:         1  0  2  0  0   0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      313 1197     0     0  910   167     0     0   217     0     0     0
Growth Adj:   1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   407 1556     0     0 1183   217     0     0   282     0     0     0
Added Vol:      54  101     0     0   40    20     0     0    85     0     0     0
PasserByVol:     0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:   461 1657     0     0 1223   237     0     0   367     0     0     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    485 1744     0     0 1287   250     0     0   386     0     0     0
Reduct Vol:      0    0     0     0    0     0     0     0     0     0     0     0
Final Vol.:    485 1744     0     0 1287   250     0     0   386     0     0     0
Critical Gap Module:
Critical Gp:   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1537 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   768  xxxx xxxx xxxxx
Potent Cap.:   429 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   344  xxxx xxxx xxxxx
Move Cap.:     429 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   344  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:115.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 121.0 xxxxx xxxx xxxxx
LOS by Move:     F    *     *     *    *     *     *    *     F     *    *     *
Movement:       LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:      *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      xxxxxx            xxxxxx             121.0            xxxxxx
ApproachLOS:         *                 *                 F                 *
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #5 Warner Ave / Legion Avenue
********************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):         0.533
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):         9.6
Optimal Cycle:       28               Level Of Service:                 A
********************************************************************************
Approach:       North Bound       South Bound       East Bound        West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:         Permitted         Permitted         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:     0    20    0     0    20    0     0     0     0     0    20    0
Lanes:         0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0  382    87   102  313     0     0    0     0    52    0    79
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:    0  497   113   133  407     0     0    0     0    68    0   103
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0  523   119   140  428     0     0    0     0    71    0   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  523   119   140  428     0     0    0     0    71    0   108
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0  523   119   140  428     0     0    0     0    71    0   108
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.98  0.95  0.50 1.00  1.00  1.00 1.00  1.00  0.81 1.00  0.58
Lanes:       0.00 0.81  0.19  1.00 1.00  0.00  0.00 0.00  0.00  0.32 0.00  0.68
Final Sat.:     0 1501   342   956 1900     0     0    0     0   491    0   747
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.35  0.35  0.15 0.23  0.00  0.00 0.00  0.00  0.14 0.00  0.14
Crit Moves:       ****                                            ****
Green/Cycle: 0.00 0.65  0.65  0.65 0.65  0.00  0.00 0.00  0.00  0.27 0.00  0.27
Volume/Cap:  0.00 0.53  0.53  0.22 0.34  0.00  0.00 0.00  0.00  0.53 0.00  0.53
Delay/Veh:    0.0  7.8   7.8   5.8  6.4   0.0   0.0  0.0   0.0  26.5  0.0  26.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  7.8   7.8   5.8  6.4   0.0   0.0  0.0   0.0  26.5  0.0  26.5
DesignQueue:    0    9     2     2    7     0     0    0     0     2    0     4
********************************************************************************
```

```
------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #5 Warner Ave / Legion Avenue
******************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.577
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):         9.7
Optimal Cycle:        31                Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0   20    0     0   20    0     0    0    0     0   20    0
Lanes:        0  0  0  1  0   1  0  1  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0  382    87   102  313     0     0    0     0    52    0    79
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   0  497   113   133  407     0     0    0     0    68    0   103
Added Vol:     0   57     4    16   60     0     0    0     0     1    0     6
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   0  554   117   149  467     0     0    0     0    69    0   109
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    0  583   123   156  491     0     0    0     0    72    0   114
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0  583   123   156  491     0     0    0     0    72    0   114
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0  583   123   156  491     0     0    0     0    72    0   114
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.98  0.95  0.49 1.00  1.00  1.00 1.00  1.00  0.81 1.00  0.57
Lanes:       0.00 0.82  0.18  1.00 1.00  0.00  0.00 0.00  0.00  0.31 0.00  0.69
Final Sat.:    0 1526   322   929 1900     0     0    0     0   475    0   752
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.38  0.38  0.17 0.26  0.00  0.00 0.00  0.00  0.15 0.00  0.15
Crit Moves:       ****                                          ****
Green/Cycle: 0.00 0.66  0.66  0.66 0.66  0.00  0.00 0.00  0.00  0.26 0.00  0.26
Volume/Cap:  0.00 0.58  0.58  0.25 0.39  0.00  0.00 0.00  0.00  0.58 0.00  0.58
Delay/Veh:    0.0  8.1   8.1   5.7  6.4   0.0   0.0  0.0   0.0  28.2  0.0  28.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  8.1   8.1   5.7  6.4   0.0   0.0  0.0   0.0  28.2  0.0  28.2
DesignQueue:    0   10     2     2    8     0     0    0     0     2    0     4
******************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):         0.649
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):         20.9
Optimal Cycle:        44                Level Of Service:                   C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  1  0  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      53  586   108   111  625    65    54   91    68   104   62   170
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   69  762   140   144  813    84    70  118    88   135   81   221
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    73  802   148   152  855    89    74  125    93   142   85   233
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   73  802   148   152  855    89    74  125    93   142   85   233
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    73  802   148   152  855    89    74  125    93   142   85   233
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.91  0.91  0.93 0.92  0.92  0.81 0.82  0.79  0.55 0.56  0.76
Lanes:       1.00 1.69  0.31  1.00 1.81  0.19  0.25 0.43  0.32  0.63 0.37  1.00
Final Sat.:  1769 2918   538  1769 3159   329   389  657   489   659  394  1445
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.27  0.27  0.09 0.27  0.27  0.19 0.19  0.19  0.22 0.22  0.16
Crit Moves:       ****        ****                                     ****
Green/Cycle: 0.07 0.42  0.42  0.13 0.48  0.48  0.33 0.33  0.33  0.33 0.33  0.33
Volume/Cap:  0.56 0.65  0.65  0.65 0.56  0.56  0.57 0.57  0.57  0.65 0.65  0.49
Delay/Veh:   41.3 19.4  19.4  39.2 15.1  15.1  23.6 23.6  23.6  27.0 27.0  22.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  41.3 19.4  19.4  39.2 15.1  15.1  23.6 23.6  23.6  27.0 27.0  22.1
DesignQueue:    3   22     4     6   21     2     2    4     3     4    3     7
********************************************************************************
```

```
-----------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
*****************************************************************************
Cycle (sec):         80                Critical Vol./Cap. (X):        0.669
Loss Time (sec):      9 (Y+R =  4 sec) Average Delay (sec/veh):        21.3
Optimal Cycle:       46                Level Of Service:                  C
*****************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  1  0  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      53   586   108   111   625    65    54    91    68   104    62   170
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   69   762   140   144   813    84    70   118    88   135    81   221
Added Vol:      0    14     2     8     7     0     0     0     0     5     0    17
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   69   776   142   152   820    84    70   118    88   140    81   238
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    73   817   150   160   863    89    74   125    93   148    85   251
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   73   817   150   160   863    89    74   125    93   148    85   251
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    73   817   150   160   863    89    74   125    93   148    85   251
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.91  0.91  0.93  0.92  0.92  0.81  0.82  0.79  0.55  0.55  0.76
Lanes:       1.00  1.69  0.31  1.00  1.81  0.19  0.25  0.43  0.32  0.64  0.36  1.00
Final Sat.:  1769  2920   536  1769  3162   326   388   656   488   662   380  1445
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.28  0.28  0.09  0.27  0.27  0.19  0.19  0.19  0.22  0.22  0.17
Crit Moves:        ****        ****                                      ****
Green/Cycle: 0.07  0.42  0.42  0.14  0.48  0.48  0.33  0.33  0.33  0.33  0.33  0.33
Volume/Cap:  0.57  0.67  0.67  0.67  0.57  0.57  0.57  0.57  0.57  0.67  0.67  0.52
Delay/Veh:   41.7  20.0  20.0  40.0  15.3  15.3  23.4  23.4  23.4  27.8  27.8  22.5
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  41.7  20.0  20.0  40.0  15.3  15.3  23.4  23.4  23.4  27.8  27.8  22.5
DesignQueue:    3    23     4     6    21     2     2     4     3     5     3     8
*****************************************************************************
```

```
-------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 2nd Avenue / Cherry St
********************************************************************************
Average Delay (sec/veh):    278.6  00.0  Worst Case Level Of Service:         F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       4   15    16   136   62    42    27  294     4    24  328    79
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:    5   20    21   177   81    55    35  382     5    31  426   103
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     5   21    22   186   85    57    37  402     5    33  449   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     5   21    22   186   85    57    37  402     5    33  449   108
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  851 1142   244   894 1090   318   577 xxxx xxxxx   428 xxxx xxxxx
Potent Cap.:  257  202   763   239  217   683  1007 xxxx xxxxx  1142 xxxx xxxxx
Move Cap.:    142  182   738   194  195   661   990 xxxx xxxxx  1123 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  265 xxxxx  xxxx  222 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 21.6 xxxxx xxxxx  279 xxxxx   8.8 xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    C     *     *    F     *     A    *     *     A    *     *
ApproachDel:       21.6             278.6            xxxxxx           xxxxxx
ApproachLOS:         C                F                *                *
```

```
-------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 2nd Avenue / Cherry St
*******************************************************************************
Average Delay (sec/veh):     313.3   72.3  Worst Case Level Of Service:        F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign        Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:        4   15    16    136   62    42     27  294     4     24  328    79
Growth Adj:   1.30 1.30  1.30   1.30 1.30  1.30   1.30 1.30  1.30   1.30 1.30  1.30
Initial Bse:     5   20    21    177   81    55     35  382     5     31  426   103
Added Vol:       0    0     0      0    0     0      0   10     0      0   23     0
PasserByVol:     0    0     0      0    0     0      0    0     0      0    0     0
Initial Fut:     5   20    21    177   81    55     35  392     5     31  449   103
User Adj:     1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95   0.95 0.95  0.95   0.95 0.95  0.95   0.95 0.95  0.95
PHF Volume:      5   21    22    186   85    57     37  413     5     33  473   108
Reduct Vol:      0    0     0      0    0     0      0    0     0      0    0     0
Final Vol.:      5   21    22    186   85    57     37  413     5     33  473   108
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9    7.5  6.5   6.9    4.1 xxxx xxxxx    4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3    3.5  4.0   3.3    2.2 xxxx xxxxx    2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol:   874 1176   249    923 1125   331    601 xxxx xxxxx    438 xxxx xxxxx
Potent Cap.:   247  193   757    228  207   671    986 xxxx xxxxx   1132 xxxx xxxxx
Move Cap.:     133  173   732    184  186   649    970 xxxx xxxxx   1113 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx    8.7 xxxx xxxxx    8.2 xxxx xxxxx
LOS by Move:     *    *     *      *    *     *      A    *     *      A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  253 xxxxx   xxxx  211 xxxxx   xxxx xxxx xxxxx   xxxx xxxx xxxxx
Shrd StpDel:xxxxx 22.5 xxxxx xxxxx  313 xxxxx    8.9 xxxx xxxxx    8.3 xxxx xxxxx
Shared LOS:      *    C     *      *    F     *      A    *     *      A    *     *
ApproachDel:        22.5             313.3            xxxxxx           xxxxxx
ApproachLOS:          C                F                *                *
```

```
-----------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*****************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
*****************************************************************************
Cycle (sec):         80              Critical Vol./Cap. (X):         0.510
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):       14.9
Optimal Cycle:       27              Level Of Service:                   B
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      58  183   56   146  206   43    19  392   40    33  330  144
Growth Adj:  1.30 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30
Initial Bse:   75  238   73   190  268   56    25  510   52    43  429  187
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95
PHF Volume:    79  250   77   200  282   59    26  536   55    45  452  197
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   79  250   77   200  282   59    26  536   55    45  452  197
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:    79  250   77   200  282   59    26  536   55    45  452  197
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.43 0.95 0.93  0.44 0.95 0.94  0.84 0.84 0.83  0.79 0.79 0.76
Lanes:       1.00 0.76 0.24  1.00 0.83 0.17  0.08 1.74 0.18  0.13 1.29 0.58
Final Sat.:   819 1369  422   842 1497  313   134 2764  284   192 1931  842
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.18 0.18  0.24 0.19 0.19  0.19 0.19 0.19  0.23 0.23 0.23
Crit Moves:                  ****                                  ****
Green/Cycle: 0.47 0.47 0.47  0.47 0.47 0.47  0.46 0.46 0.46  0.46 0.46 0.46
Volume/Cap:  0.21 0.39 0.39  0.51 0.40 0.40  0.42 0.42 0.42  0.51 0.51 0.51
Delay/Veh:   12.9 14.3 14.3  16.1 14.4 14.4  14.7 14.7 14.7  15.6 15.6 15.6
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  12.9 14.3 14.3  16.1 14.4 14.4  14.7 14.7 14.7  15.6 15.6 15.6
DesignQueue:    2    6    2     5    7    1     1   13    1     1   11    5
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
********************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):         0.603
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        15.9
Optimal Cycle:        33              Level Of Service:                  B
********************************************************************************
Approach:       North Bound       South Bound        East Bound        West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||-----------------||-----------------||-----------------|
Control:         Permitted         Permitted         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|-----------------||-----------------||-----------------||-----------------|
Volume Module:
Base Vol:      58  183     56   146  206     43    19  392     40    33  330    144
Growth Adj:  1.30 1.30   1.30  1.30 1.30   1.30  1.30 1.30   1.30  1.30 1.30   1.30
Initial Bse:   75  238     73   190  268     56    25  510     52    43  429    187
Added Vol:      0   22      3    41   19      2     1    9      0     7   21     38
PasserByVol:    0    0      0     0    0      0     0    0      0     0    0      0
Initial Fut:   75  260     76   231  287     58    26  519     52    50  450    225
User Adj:    1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
PHF Adj:     0.95 0.95   0.95  0.95 0.95   0.95  0.95 0.95   0.95  0.95 0.95   0.95
PHF Volume:    79  274     80   243  302     61    27  546     55    53  474    237
Reduct Vol:     0    0      0     0    0      0     0    0      0     0    0      0
Reduced Vol:   79  274     80   243  302     61    27  546     55    53  474    237
PCE Adj:     1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
MLF Adj:     1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
Final Vol.:    79  274     80   243  302     61    27  546     55    53  474    237
------------|-----------------||-----------------||-----------------||-----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900   1900  1900 1900   1900  1900 1900   1900  1900 1900   1900
Adjustment:  0.42 0.95   0.93  0.43 0.96   0.95  0.83 0.83   0.82  0.78 0.78   0.75
Lanes:       1.00 0.77   0.23  1.00 0.83   0.17  0.08 1.74   0.18  0.14 1.23   0.63
Final Sat.:   807 1388    405   822 1508    305   136 2748    277   202 1809    904
------------|-----------------||-----------------||-----------------||-----------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.20   0.20  0.30 0.20   0.20  0.20 0.20   0.20  0.26 0.26   0.26
Crit Moves:                    ****                                   ****
Green/Cycle: 0.49 0.49   0.49  0.49 0.49   0.49  0.43 0.43   0.43  0.43 0.43   0.43
Volume/Cap:  0.20 0.40   0.40  0.60 0.41   0.41  0.46 0.46   0.46  0.60 0.60   0.60
Delay/Veh:   11.8 13.2   13.2  17.3 13.3   13.3  16.2 16.2   16.2  18.2 18.2   18.2
User DelAdj: 1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00  1.00 1.00   1.00
AdjDel/Veh:  11.8 13.2   13.2  17.3 13.3   13.3  16.2 16.2   16.2  18.2 18.2   18.2
DesignQueue:    2    7      2     6    7      1     1   14      1     1   13      6
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
         2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #9 2nd Street / Hazel St
********************************************************************************
Average Delay (sec/veh):      22.3  1.3    Worst Case Level Of Service:       C
********************************************************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:          Include          Include          Include           Include
Lanes:       0  0  1! 0  0   0  0  0  1  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      15    0    37    0    1     3    2  570    21    21  482     1
Growth Adj:  1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   20    0    48    0    1     4    3  741    27    27  627     1
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    21    0    51    0    1     4    3  780    29    29  660     1
Reduct Vol:     0    0     0    0    0     0    0    0     0     0    0     0
Final Vol.:    21    0    51    0    1     4    3  780    29    29  660     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9 xxxxx  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1228 xxxx   444  xxxx 1572   370   681 xxxx xxxxx   829 xxxx xxxxx
Potent Cap.:  136 xxxx   567  xxxx  111   633   921 xxxx xxxxx   812 xxxx xxxxx
Move Cap.:    126 xxxx   548  xxxx  103   612   906 xxxx xxxxx   798 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.0 xxxx xxxxx   9.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  279 xxxxx  xxxx xxxx   275  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 22.3 xxxxx xxxxx xxxx  18.4   9.0 xxxx xxxxx   9.7 xxxx xxxxx
Shared LOS:     *    C     *     *    *     C     A    *     *     A    *     *
ApproachDel:      22.3             18.4             xxxxxx            xxxxxx
ApproachLOS:        C                C                 *                 *
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #9 2nd Street / Hazel St
********************************************************************************
Average Delay (sec/veh):    194.2  24.5  Worst Case Level Of Service:       F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  1  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      15    0    37     0    1    3     2  570    21    21  482     1
Growth Adj:  1.30 1.30  1.30  1.30 1.30 1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   20    0    48     0    1    4     3  741    27    27  627     1
Added Vol:     27    0    51     0    0    0     0   42    11    20   38     0
PasserByVol:   65    0     0     0    0    0     0  -63    63     0  -65     0
Initial Fut:  112    0    99     0    1    4     3  720   101    47  600     1
User Adj:    1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95 0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:   117    0   104     0    1    4     3  758   107    50  631     1
Reduct Vol:     0    0     0     0    0    0     0    0     0     0    0     0
Final Vol.:   117    0   104     0    1    4     3  758   107    50  631     1
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9 xxxxx  6.5  6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx  4.0  3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1273 xxxx   472  xxxx 1641  356   653 xxxx xxxxx   885 xxxx xxxxx
Potent Cap.:  127 xxxx   544  xxxx  101  646   944 xxxx xxxxx   774 xxxx xxxxx
Move Cap.:    114 xxxx   526  xxxx   91  625   928 xxxx xxxxx   761 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.9 xxxx xxxxx   9.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *    *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  180 xxxxx  xxxx xxxx  253  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  194 xxxxx xxxxx xxxx 19.5   8.9 xxxx xxxxx  10.1 xxxx xxxxx
Shared LOS:     *    F     *     *    *    C     A    *     *     B    *     *
ApproachDel:      194.2             19.5           xxxxxx           xxxxxx
ApproachLOS:        F                C               *                *
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #10 2nd Street / Chestnut St
********************************************************************************
Average Delay (sec/veh):       36.7  3.7  Worst Case Level Of Service:         E
********************************************************************************
Approach:        North Bound       South Bound        East Bound        West Bound
Movement:       L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:          Stop Sign         Stop Sign        Uncontrolled      Uncontrolled
Rights:            Include           Include           Include           Include
Lanes:          0  0  1! 0  0     0  0  0  0  0     0  0  1  1  0     0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        50    0    62     0    0     0     0  558    49    32  449     0
Growth Adj:    1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:     65    0    81     0    0     0     0  725    64    42  584     0
User Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:       0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:      68    0    85     0    0     0     0  764    67    44  614     0
Reduct Vol:       0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      68    0    85     0    0     0     0  764    67    44  614     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:    6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:    3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   1232 xxxx   455  xxxx xxxx xxxxx  xxxx xxxx xxxxx   851 xxxx xxxxx
Potent Cap.:    172 xxxx   558  xxxx xxxx xxxxx  xxxx xxxx xxxxx   796 xxxx xxxxx
Move Cap.:      159 xxxx   539  xxxx xxxx xxxxx  xxxx xxxx xxxxx   783 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.6 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     *    *     *     A    *     *
Movement:       LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  261 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 36.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.9 xxxx xxxxx
Shared LOS:      *    E     *     *    *     *     *    *     *     A    *     *
ApproachDel:        36.7            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:          E                *                 *                 *
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
             2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #10 2nd Street / Chestnut St
********************************************************************************
Average Delay (sec/veh):      11.8          Worst Case Level Of Service:       B
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      50    0    62     0    0     0     0  558    49    32  449     0
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   65    0    81     0    0     0     0  725    64    42  584     0
Added Vol:      0    0     0     0    0     0     0   93     0     0   58     0
PasserByVol:  -65    0   -80     0    0     0     0    0   -63   -41    0     0
Initial Fut:    0    0     1     0    0     0     0  818     1     1  642     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0    0     1     0    0     0     0  861     1     1  675     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0    0     1     0    0     0     0  861     1     1  675     0
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   471  xxxx xxxx xxxxx  xxxx xxxx xxxxx   882 xxxx xxxxx
Potent Cap.: xxxx xxxx   545  xxxx xxxx xxxxx  xxxx xxxx xxxxx   775 xxxx xxxxx
Move Cap.:   xxxx xxxx   527  xxxx xxxx xxxxx  xxxx xxxx xxxxx   762 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  527 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 11.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.7 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:      11.8            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
```

```
-----------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*****************************************************************************
Intersection #11 2nd Street / Normal Ave
*****************************************************************************
Average Delay (sec/veh):       37.5  2.9  Worst Case Level Of Service:     E
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      18    1    30    18    3    13    12  562    48    50  449    14
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   23    1    39    23    4    17    16  731    62    65  584    18
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    25    1    41    25    4    18    16  769    66    68  614    19
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    25    1    41    25    4    18    16  769    66    68  614    19
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1321 1645   457  1219 1668   357   654 xxxx xxxxx   855 xxxx xxxxx
Potent Cap.:  117  101   556   139   97   645   943 xxxx xxxxx   794 xxxx xxxxx
Move Cap.:     97   87   537   112   84   624   927 xxxx xxxxx   780 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.9 xxxx xxxxx   9.6 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  193 xxxxx  xxxx  157 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 33.2 xxxxx xxxxx 37.5 xxxxx   9.0 xxxx xxxxx  10.1 xxxx xxxxx
Shared LOS:     *    D     *     *    E     *     A    *     *     B    *     *
ApproachDel:       33.2             37.5           xxxxxx           xxxxxx
ApproachLOS:         D                E               *                *
```

```
-------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 2nd Street / Normal Ave
*******************************************************************************
Average Delay (sec/veh):     177.7   40.4   Worst Case Level Of Service:      F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      18    1    30     18    3    13     12  562    48     50  449    14
Growth Adj:  1.30 1.30  1.30   1.30 1.30  1.30   1.30 1.30  1.30   1.30 1.30  1.30
Initial Bse:   23    1    39     23    4    17     16  731    62     65  584    18
Added Vol:     25    0    89      0    0     0      0   83    10     35   33     0
PasserByVol:    0    0    80      0    0     0      0  -80     0     41  -41     0
Initial Fut:   48    1   208     23    4    17     16  734    72    141  576    18
User Adj:    1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95   0.95 0.95  0.95   0.95 0.95  0.95   0.95 0.95  0.95
PHF Volume:    51    1   219     25    4    18     16  772    76    148  606    19
Reduct Vol:     0    0     0      0    0     0      0    0     0      0    0     0
Final Vol.:    51    1   219     25    4    18     16  772    76    148  606    19
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9    7.5  6.5   6.9    4.1 xxxx xxxxx    4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3    3.5  4.0   3.3    2.2 xxxx xxxxx    2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: 1485 1805   464   1372 1834   353    645 xxxx xxxxx    868 xxxx xxxxx
Potent Cap.:   88   80   550    107   77   650    950 xxxx xxxxx    784 xxxx xxxxx
Move Cap.:     65   60   532     49   58   628    934 xxxx xxxxx    771 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx    8.9 xxxx xxxxx    9.7 xxxx xxxxx
LOS by Move:    *    *     *      *    *     *      A    *     *      A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  222 xxxxx   xxxx   78 xxxxx   xxxx xxxx xxxxx   xxxx xxxx xxxxx
Shrd StpDel:xxxxx  178 xxxxx  xxxxx  105 xxxxx    8.9 xxxx xxxxx   10.8 xxxx xxxxx
Shared LOS:     *    F     *      *    F     *      A    *     *      B    *     *
ApproachDel:      177.7            104.8            xxxxxx           xxxxxx
ApproachLOS:        F                F                 *                *
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #12 2nd Street / Broadway
********************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        0.650
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        16.9
Optimal Cycle:        46               Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0   20     0    0   20     0    0   20     0
Lanes:        0  0  0  0  0   0  1  1  1  0   0  0  1  1  0   0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   77  745   113    0  539   126  100  367     0
Growth Adj:  1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30
Initial Bse:    0    0     0  100  969   147    0  701   164  130  477     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:     0    0     0  111 1076   163    0  779   182  144  530     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0  111 1076   163    0  779   182  144  530     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     0    0     0  111 1076   163    0  779   182  144  530     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.86 0.86  0.86 1.00 0.90  0.89 0.54 0.54  1.00
Lanes:       0.00 0.00  0.00 0.25 2.39  0.36 0.00 1.62  0.38 0.43 1.57  0.00
Final Sat.:     0    0     0  403 3907   592    0 2781   650  442 1627     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.28 0.28  0.28 0.00 0.28  0.28 0.33 0.33  0.00
Crit Moves:                       ****                            ****
Green/Cycle: 0.00 0.00  0.00 0.42 0.42  0.42 0.00 0.50  0.50 0.50 0.50  0.00
Volume/Cap:  0.00 0.00  0.00 0.65 0.65  0.65 0.00 0.56  0.56 0.65 0.65  0.00
Delay/Veh:    0.0  0.0   0.0 19.1 19.1  19.1  0.0 14.2  14.2 16.2 16.2   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 19.1 19.1  19.1  0.0 14.2  14.2 16.2 16.2   0.0
DesignQueue:    0    0     0    3   29     4    0   19     4    3   12     0
********************************************************************************
```

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #12 2nd Street / Broadway
******************************************************************************
Cycle (sec):          80                  Critical Vol./Cap. (X):        0.861
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):         19.7
Optimal Cycle:        71                  Level Of Service:                  B
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase      Split Phase        Permitted         Permitted
Rights:           Include          Include          Include           Include
Min. Green:     0     0     0     0    20     0     0    20     0     0    20     0
Lanes:        0  0  0  0  0    0  1  1  1  0    0  0  1  1  0    0  1  1  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0     0     0    77   745   113     0   539   126   100   367     0
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:    0     0     0   100   969   147     0   701   164   130   477     0
Added Vol:      0     0     0     7    85    26     0    82    90     2    43     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     0     0   107  1054   173     0   783   254   132   520     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:     0     0     0   119  1171   192     0   870   282   147   578     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0   119  1171   192     0   870   282   147   578     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0     0     0   119  1171   192     0   870   282   147   578     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.86  0.86  0.86  1.00  0.90  0.88  0.16  0.93  1.00
Lanes:       0.00  0.00  0.00  0.24  2.37  0.39  0.00  1.51  0.49  1.00  1.00  0.00
Final Sat.:     0     0     0   393  3865   634     0  2564   831   298  1769     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.30  0.30  0.30  0.00  0.34  0.34  0.49  0.33  0.00
Crit Moves:                               ****                    ****
Green/Cycle: 0.00  0.00  0.00  0.35  0.35  0.35  0.00  0.57  0.57  0.57  0.57  0.00
Volume/Cap:  0.00  0.00  0.00  0.86  0.86  0.86  0.00  0.59  0.59  0.86  0.57  0.00
Delay/Veh:    0.0   0.0   0.0  28.8  28.8  28.8   0.0  11.5  11.5  23.4  11.4   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  28.8  28.8  28.8   0.0  11.5  11.5  23.4  11.4   0.0
DesignQueue:    0     0     0     4    36     6     0    18     6     3    12     0
******************************************************************************
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #13 2nd Street / Main Street
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):         0.827
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):       20.9
Optimal Cycle:        61              Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0   20     0    0    0     0     0   20     0     0   20     0
Lanes:        0  1  1  1  0   0  0  0  0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     135  991   176    0    0     0   148  469     0     0  332    37
Growth Adj:  1.30 1.30  1.30 1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:  176 1288   229    0    0     0   192  610     0     0  432    48
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   195 1431   254    0    0     0   214  677     0     0  480    53
Reduct Vol:     0    0     0    0    0     0     0    0     0     0    0     0
Reduced Vol:  195 1431   254    0    0     0   214  677     0     0  480    53
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   195 1431   254    0    0     0   214  677     0     0  480    53
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.86  0.86 1.00 1.00  1.00  0.62 0.62  1.00  1.00 0.92  0.91
Lanes:       0.31 2.28  0.41 0.00 0.00  0.00  0.48 1.52  0.00  0.00 1.80  0.20
Final Sat.:   506 3716   660    0    0     0   564 1783     0     0 3136   346
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.39 0.39  0.39 0.00 0.00  0.00  0.38 0.38  0.00  0.00 0.15  0.15
Crit Moves:             ****                       ****
Green/Cycle: 0.47 0.47  0.47 0.00 0.00  0.00  0.46 0.46  0.00  0.00 0.46  0.46
Volume/Cap:  0.83 0.83  0.83 0.00 0.00  0.00  0.83 0.83  0.00  0.00 0.33  0.33
Delay/Veh:   21.2 21.2  21.2  0.0  0.0   0.0  24.2 24.2   0.0   0.0 13.9  13.9
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  21.2 21.2  21.2  0.0  0.0   0.0  24.2 24.2   0.0   0.0 13.9  13.9
DesignQueue:    5   37     7    0    0     0     5   17     0     0   12     1
*******************************************************************************
```

```
------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #13 2nd Street / Main Street
******************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):         0.915
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        26.1
Optimal Cycle:        94               Level Of Service:                   C
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0   20     0    0    0     0    0   20     0    0   20     0
Lanes:        0  1  1  1  0   0  0  0  0  0   0  1  1  0  0   0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     135  991   176     0    0     0   148  469     0     0  332    37
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:  176 1288   229     0    0     0   192  610     0     0  432    48
Added Vol:     36   68     5     0    0     0    65   25     0     0    9     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  212 1356   234     0    0     0   257  635     0     0  441    51
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   235 1507   260     0    0     0   286  705     0     0  490    57
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  235 1507   260     0    0     0   286  705     0     0  490    57
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   235 1507   260     0    0     0   286  705     0     0  490    57
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.86  0.86  1.00 1.00  1.00  0.60 0.60  1.00  1.00 0.92  0.91
Lanes:       0.35 2.26  0.39  0.00 0.00  0.00  0.58 1.42  0.00  0.00 1.79  0.21
Final Sat.:   574 3682   635     0    0     0   655 1614     0     0 3116   363
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.41 0.41  0.41  0.00 0.00  0.00  0.44 0.44  0.00  0.00 0.16  0.16
Crit Moves:  ****                                   ****
Green/Cycle: 0.45 0.45  0.45  0.00 0.00  0.00  0.48 0.48  0.00  0.00 0.48  0.48
Volume/Cap:  0.91 0.91  0.91  0.00 0.00  0.00  0.91 0.91  0.00  0.00 0.33  0.33
Delay/Veh:   27.2 27.2  27.2   0.0  0.0   0.0  31.2 31.2   0.0   0.0 13.1  13.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  27.2 27.2  27.2   0.0  0.0   0.0  31.2 31.2   0.0   0.0 13.1  13.1
DesignQueue:    6   41     7     0    0     0     7   18     0     0   12     1
******************************************************************************
```

```
------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                     Level Of Service Computation Report
              2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #14 Park Avenue / Midway
******************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        1.182
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):      103.8
Optimal Cycle:       180               Level Of Service:                  F
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase      Split Phase      Split Phase
Rights:            Ignore          Include           Include          Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  1  0  1   1  0  1! 0  0   1  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   267   537   411   232     1     2     0     0   468     2   328
Growth Adj:  1.00  1.70  1.50  1.10  1.70  1.00  1.00  1.00  1.00  1.20  1.00  1.10
Initial Bse:    0   454   806   452   394     1     2     0     0   562     2   361
User Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:     0.90  0.90  0.00  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00
PHF Volume:     0   504     0   502   438     1     2     0     0   624     2     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   504     0   502   438     1     2     0     0   624     2     0
PCE Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:     0   504     0   502   438     1     2     0     0   624     2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.98  1.00  0.95  0.95  0.95  0.93  1.00  1.00  0.93  0.98  1.00
Lanes:       1.00  1.00  1.00  1.36  0.63  0.01  1.00  0.00  0.00  1.00  1.00  1.00
Final Sat.:  1900  1862  1900  2473  1151     3  1769     0     0  1769  1862  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.27  0.00  0.20  0.38  0.38  0.00  0.00  0.00  0.35  0.00  0.00
Crit Moves:        ****                    ****  ****              ****
Green/Cycle: 0.00  0.23  0.00  0.32  0.32  0.32  0.00  0.00  0.00  0.30  0.30  0.00
Volume/Cap:  0.00  1.18  0.00  0.63  1.18  1.18  1.18  0.00  0.00  1.18  0.00  0.00
Delay/Veh:    0.0   135   0.0  24.0   122 121.9 834.6   0.0   0.0 128.3  19.7   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   135   0.0  24.0   122 121.9 834.6   0.0   0.0 128.3  19.7   0.0
DesignQueue:    0    19     0    16    15     0     0     0     0    21     0     0
******************************************************************************
```

```
-----------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #14 Park Avenue / Midway
*****************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        1.244
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):      121.5
Optimal Cycle:       180               Level Of Service:                  F
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase      Split Phase      Split Phase
Rights:          Ignore          Include          Include           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   1  0  1! 0  0   1  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   267   537   411   232     1     2     0     0   468     2   328
Growth Adj:  1.00 1.70  1.50  1.10 1.70  1.00  1.00 1.00  1.00  1.20 1.00  1.10
Initial Bse:   0   454   806   452   394     1     2     0     0   562     2   361
Added Vol:     0    28     1    41    36     0     0     0     0     1     0    16
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   0   482   807   493   430     1     2     0     0   563     2   377
User Adj:    1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.00  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.00
PHF Volume:    0   535     0   548   478     1     2     0     0   625     2     0
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   0   535     0   548   478     1     2     0     0   625     2     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:    0   535     0   548   478     1     2     0     0   625     2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.98  1.00  0.95 0.95  0.95  0.93 1.00  1.00  0.93 0.98  1.00
Lanes:       1.00 1.00  1.00  1.36 0.63  0.01  1.00 0.00  0.00  1.00 1.00  1.00
Final Sat.:  1900 1862  1900  2474 1151     2  1769    0     0  1769 1862  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.29  0.00  0.22 0.42  0.42  0.00 0.00  0.00  0.35 0.00  0.00
Crit Moves:       ****                   ****  ****              ****
Green/Cycle: 0.00 0.23  0.00  0.33 0.33  0.33  0.00 0.00  0.00  0.28 0.28  0.00
Volume/Cap:  0.00 1.24  0.00  0.66 1.24  1.24  1.24 0.00  0.00  1.24 0.00  0.00
Delay/Veh:    0.0  159   0.0  23.9  146 146.4 888.0  0.0   0.0 154.2 20.5   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  159   0.0  23.9  146 146.4 888.0  0.0   0.0 154.2 20.5   0.0
DesignQueue:    0   20     0    17   16     0     0    0     0    22    0     0
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #15 Midway / Hegan Lane
********************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):        1.076
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):         67.2
Optimal Cycle:       180                 Level Of Service:                  E
********************************************************************************
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted         Permitted
Rights:           Include          Include           Include           Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0   1  0  1  0  1   0  0  1! 0  0   0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16   374     1     5   408   286   416     0    32     0     0    10
Growth Adj:  1.90  1.60  1.60  1.60  1.60  1.60  1.60  1.60  1.90  1.00  1.00  1.60
Initial Bse:   30   598     2     8   653   458   666     0    61     0     0    16
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    32   630     2     8   687   482   701     0    64     0     0    17
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   32   630     2     8   687   482   701     0    64     0     0    17
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    32   630     2     8   687   482   701     0    64     0     0    17
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.98  0.98  0.93  0.98  0.83  0.71  1.00  0.71  1.00  1.00  0.85
Lanes:       1.00  0.99  0.01  1.00  1.00  1.00  0.92  0.00  0.08  0.00  0.00  1.00
Final Sat.:  1769  1856     6  1769  1862  1583  1235     0   113     0     0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02  0.34  0.34  0.00  0.37  0.30  0.57  0.00  0.57  0.00  0.00  0.01
Crit Moves:  ****                    ****        ****
Green/Cycle: 0.02  0.36  0.36  0.00  0.34  0.34  0.53  0.00  0.53  0.00  0.00  0.53
Volume/Cap:  1.08  0.96  0.96  0.96  1.08  0.89  1.08  0.00  1.08  0.00  0.00  0.02
Delay/Veh:  228.3  49.7  49.7 323.2  83.9  41.1  74.8   0.0  74.8   0.0   0.0   9.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh: 228.3  49.7  49.7 323.2  83.9  41.1  74.8   0.0  74.8   0.0   0.0   9.0
DesignQueue:    1    20     0     0    22    15    16     0     2     0     0     0
********************************************************************************
```

```
-------------------------------------------------------------------------------
                       CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):         1.111
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):       74.9
Optimal Cycle:       180              Level Of Service:                   E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16  374     1     5  408   286   416     0    32     0     0    10
Growth Adj:  1.90 1.60  1.60  1.60 1.60  1.60  1.60 1.60  1.90  1.00 1.00  1.60
Initial Bse:   30  598     2     8  653   458   666     0    61     0     0    16
Added Vol:      0   12     0     0   29     7    18     0     1     0     0     0
PasserByVol:    0    0     0     0    0     0     0     0     0     0     0     0
Initial Fut:   30  610     2     8  682   465   684     0    62     0     0    16
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    32  643     2     8  718   489   720     0    65     0     0    17
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Reduced Vol:   32  643     2     8  718   489   720     0    65     0     0    17
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    32  643     2     8  718   489   720     0    65     0     0    17
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  0.98  0.93 0.98  0.83  0.71 1.00  0.71  1.00 1.00  0.85
Lanes:       1.00 0.99  0.01  1.00 1.00  1.00  0.92 0.00  0.08  0.00 0.00  1.00
Final Sat.:  1769 1856     6  1769 1862  1583  1236    0   112     0    0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.35  0.35  0.00 0.39  0.31  0.58 0.00  0.58  0.00 0.00  0.01
Crit Moves:  ****                    ****         ****
Green/Cycle: 0.02 0.36  0.36  0.00 0.35  0.35  0.52 0.00  0.52  0.00 0.00  0.52
Volume/Cap:  1.11 0.97  0.97  0.97 1.11  0.89  1.11 0.00  1.11  0.00 0.00  0.02
Delay/Veh:  242.9 51.6  51.6 331.0 96.0  41.1  87.6  0.0  87.6   0.0  0.0   9.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 242.9 51.6  51.6 331.0 96.0  41.1  87.6  0.0  87.6   0.0  0.0   9.2
DesignQueue:    1   20     0     0   23    15    17     0     2     0     0     0
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                       CUMULATIVE plus MASTER PLAN (4,000)
                           5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                        Level Of Service Computation Report
               2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #16 Hegan lane / ARTC Access
********************************************************************************
Average Delay (sec/veh):     10.8  0.6  Worst Case Level Of Service:           B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1!  0  0   0  0  1!  0  0   0  0  0  1  0   0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8    0    24     0    0     0     0  136     1     7  169     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.90  1.00  1.00 1.90  1.00
Initial Bse:    8    0    24     0    0     0     0  258     1     7  321     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     8    0    25     0    0     0     0  272     1     7  338     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     8    0    25     0    0     0     0  272     1     7  338     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  625 xxxx   273  xxxx xxxx xxxxx  xxxx xxxx xxxxx   273 xxxx xxxxx
Potent Cap.:  452 xxxx   771  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1290 xxxx xxxxx
Move Cap.:    450 xxxx   771  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1290 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  654 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 10.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:       10.8            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

```
cum plus Master Plan PM    Wed Dec 8, 2004 06:13:28            Page 37-1
------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #16 Hegan lane / ARTC Access
******************************************************************************
Average Delay (sec/veh):     10.7   1.0   Worst Case Level Of Service:       B
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8    0    24     0    0     0     0  136     1     7  169     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.90  1.00  1.00 1.90  1.00
Initial Bse:    8    0    24     0    0     0     0  258     1     7  321     0
Added Vol:      0    0    19     0    0     0     0    0     0     8    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    8    0    43     0    0     0     0  258     1    15  321     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     8    0    45     0    0     0     0  272     1    16  338     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     8    0    45     0    0     0     0  272     1    16  338     0
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  642 xxxx   273  xxxx xxxx xxxxx  xxxx xxxx xxxxx   273 xxxx xxxxx
Potent Cap.:  442 xxxx   771  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1290 xxxx xxxxx
Move Cap.:    437 xxxx   771  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1290 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  689 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 10.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:       10.7            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *











   Traffix 7.5.1015 (c) 2000 Dowling Assoc. Licensed to kdANDERSON TRANSP.
```

KDA

```
--------------------------------------------------------------------------------
                        EXISTING plus MASTER PLAN (4,000)
                           5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                                 Scenario Report
Scenario:               ex plus Master Plan

Command:                Default Command
Volume:                 ex am
Geometry:               existing
Impact Fee:             Default Impact Fee
Trip Generation:        am peak
Trip Distribution:      current
Paths:                  Default Paths
Routes:                 Default Routes
Configuration:          Default Configuration
```

```
--------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                         Trip Distribution Report

                         Percent Of Trips current

                                 To Gates
             1     2     3     4     5     6     7     8     9    10
Zone       ----- ----- ----- ----- ----- ----- ----- ----- ----- -----

  1        15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
  2        15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
  3        15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                           Turning Movement Report
                                   am peak

Volume    Northbound       Southbound        Eastbound        Westbound      Total
Type   Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right  Volume

#1 Nord Ave / West Sacramento Ave
Base      5  360   171   352  653    11    12    8     2   143   10   230    1957
Added     0    8     2    64   38     0     0    0     0     1    0    16     129
Total     5  368   173   416  691    11    12    8     2   144   10   246    2086

#2 Sacramento Ave / Warner Ave
Base     51   76    46    39  260    32    58  307    96    37  164    28    1194
Added    16   16    41    13   67     0     0    0    67   172    1     3     396
Total    67   92    87    52  327    32    58  307   163   209  165    31    1590

#3 Esplanade / 1st Avenue
Base      0  675    67     0  850    71    59  378    45    82  274    87    2588
Added     0   12    15     0   85     0     8    9     0    87   15     0     231
Total     0  687    82     0  935    71    67  387    45   169  289    87    2819

#4 Esplanade / Sacramento Ave
Base    264  750     0     0  869   233     0    0   213     0    0     0    2329
Added    94   27     0     0  114    58     0    0    44     0    0     0     337
Total   358  777     0     0  983   291     0    0   257     0    0     0    2666

#5 Warner Ave / Legion Avenue
Base      0  123    83   161  220     0     0    0     0    39    0    54     680
Added     0   61     1     4   56     0     0    0     0     4    0    18     144
Total     0  184    84   165  276     0     0    0     0    43    0    72     824

#6 Walnut Avenue / 2nd Street
Base     27  488    82   126  534     3    46   63    65    46   50    91    1621
Added     0    6     6    23   15     0     0    0     0     1    0     5      56
Total    27  494    88   149  549     3    46   63    65    47   50    96    1677

#7 2nd Avenue / Cherry St
Base      2   17     7    17   10     4    47  249    11    20  207   250     841
Added     0    0     0     0    0     0     0   29     0     0    6     0      35
Total     2   17     7    17   10     4    47  278    11    20  213   250     876

#8 2nd Street / Ivy Street / Warner Ave
Base     99   89    21    48   75    19    21  238    13    10  359    62    1054
Added     0   18     7    37   23     1     2   27     0     2    5    41     163
Total    99  107    28    85   98    20    23  265    13    12  364   103    1217

#9 2nd Street / Hazel St
Base     21    0    12     2    0     5     1  249    37    11  398     5     741
Added     7    0    14     0    0     0     0   40    31    58   41     0     191
PassBy   26    0     0     0    0     0     0  -29    29     0  -26     0       0
Total    54    0    26     2    0     5     1  260    97    69  413     5     932
```

```
--------------------------------------------------------------------------------
                        EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
Volume     Northbound       Southbound       Eastbound        Westbound     Total
Type    Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume


#10 2nd Street / Chestnut St
Base      26    0    24     0    0     0     0  246    29    46  394     0    765
Added      0    0     0     0    0     0     0   54     0     0   99     0    153
PassBy   -26    0   -24     0    0     0     0    0   -29   -46    0     0   -125
Total      0    0     0     0    0     0     0  300     0     0  493     0    793

#11 2nd Street / Normal Ave
Base       3    3    19     9    0    10     7  228    33    42  424    15    793
Added      7    0    24     0    0     0     0   26    28   100   93     0    278
PassBy     0    0    24     0    0     0     0  -24     0    46  -46     0      0
Total     10    3    67     9    0    10     7  230    61   188  471    15   1071

#12 2nd Street / Broadway
Base       0    0     0    48  660    87     0  200    50    55  343     0   1443
Added      0    0     0     2   61    73     0   22    27     6  120     0    311
Total      0    0     0    50  721   160     0  222    77    61  463     0   1754

#13 2nd Street / Main Street
Base     104  695   113     0    0     0    82  164     0     0  291    24   1473
Added    100   90     1     0    0     0    17    7     0     0   26     8    249
Total    204  785   114     0    0     0    99  171     0     0  317    32   1722

#14 Park Avenue / Midway
Base       1  244   406   259  220     2     2    0     2   478    0   310   1924
Added      0   37     0    11   26     0     0    0     0     1    0    46    121
Total      1  281   406   270  246     2     2    0     2   479    0   356   2045

#15 Midway / Hegan Lane
Base      39  445     0    11  319   362   202    4    24     0    4     4   1414
Added      1   33     0     0    8    20     5    0     0     0    0     0     67
Total     40  478     0    11  327   382   207    4    24     0    4     4   1481

#16 Hegan lane / ARTC Access
Base       3    0     6     0    0     0     0  117    27    66   88     0    307
Added      0    0     5     0    0     0     0    0     0    21    0     0     26
Total      3    0    11     0    0     0     0  117    27    87   88     0    333
```

```
---------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------
                           Impact Analysis Report
                              Level Of Service

Intersection                               Base            Future        Change
                                        Del/   V/        Del/   V/         in
                                    LOS Veh    C     LOS Veh    C
#  1 Nord Ave / West Sacramento Ave  C  23.7 0.797   C  27.4 0.860   + 3.746 D/V

#  2 Sacramento Ave / Warner Ave     C  27.5 0.537   D  37.3 0.764   + 9.784 D/V

#  3 Esplanade / 1st Avenue          C  20.5 0.663   C  23.6 0.759   + 3.068 D/V

#  4 Esplanade / Sacramento Ave      C  22.6 0.000   E  40.1 0.000   + 0.000 V/C

#  5 Warner Ave / Legion Avenue      A   9.5 0.219   A   9.8 0.278   + 0.295 D/V

#  6 Walnut Avenue / 2nd Street      B  17.2 0.432   B  17.5 0.454   + 0.305 D/V

#  7 2nd Avenue / Cherry St          C  16.9 0.000   C  17.5 0.000   + 0.000 V/C

#  8 2nd Street / Ivy Street / Warn  B  11.7 0.259   B  12.2 0.286   + 0.419 D/V

#  9 2nd Street / Hazel St           B  13.4 0.000   C  19.4 0.000   + 0.000 V/C

# 10 2nd Street / Chestnut St        B  13.0 0.000   A   0.0 0.000   + 0.000 V/C

# 11 2nd Street / Normal Ave         B  13.6 0.000   C  20.7 0.000   + 0.000 V/C

# 12 2nd Street / Broadway           B  13.5 0.349   B  14.3 0.437   + 0.766 D/V

# 13 2nd Street / Main Street        B  12.8 0.337   B  13.0 0.403   + 0.128 D/V

# 14 Park Avenue / Midway            C  31.3 0.780   C  34.5 0.829   + 3.247 D/V

# 15 Midway / Hegan Lane             B  16.5 0.520   B  16.5 0.547   + 0.018 D/V

# 16 Hegan lane / ARTC Access        A   9.7 0.000   A   9.6 0.000   + 0.000 V/C
```

```
--------------------------------------------------------------------------------
                  CUMULATIVE plus MASTER PLAN (4,000)
                    5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
         2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
********************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):        1.419
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):      150.2
Optimal Cycle:      180               Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  0  1  0    1  0  0  1  0    0  0  1! 0  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16   595   239   309   672     8    17    19     8   283    27   363
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   21   774   311   402   874    10    22    25    10   368    35   472
Added Vol:      0    30     1    23    13     0     0     0     0     2     0    60
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   21   804   312   425   887    10    22    25    10   370    35   532
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    22   846   328   447   933    11    23    26    11   389    37   560
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   22   846   328   447   933    11    23    26    11   389    37   560
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    22   846   328   447   933    11    23    26    11   389    37   560
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.94  0.94  0.93  0.98  0.98  0.41  0.41  0.41  0.73  0.84  0.78
Lanes:       1.00  0.72  0.28  1.00  0.99  0.01  0.38  0.44  0.18  1.00  0.06  0.94
Final Sat.:  1769  1285   498  1769  1837    22   300   339   143  1393    92  1394
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01  0.66  0.66  0.25  0.51  0.51  0.08  0.08  0.08  0.28  0.40  0.40
Crit Moves:        ****        ****                                      ****
Green/Cycle: 0.02  0.46  0.46  0.18  0.63  0.63  0.28  0.28  0.28  0.28  0.28  0.28
Volume/Cap:  0.81  1.42  1.42  1.42  0.81  0.81  0.27  0.27  0.27  0.99  1.42  1.42
Delay/Veh:  133.4   217 217.0 239.1  15.7  15.7  22.9  22.9  22.9  70.2   231 230.7
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh: 133.4   217 217.0 239.1  15.7  15.7  22.9  22.9  22.9  70.2   231 230.7
DesignQueue:    1    24     9    17    18     0     1     1     0    13     1    19
********************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
********************************************************************************
Cycle (sec):         80                Critical Vol./Cap. (X):        0.860
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):        27.4
Optimal Cycle:       70                Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:          Include          Include           Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  0  1! 0  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      5  360  171   352  653   11    12    8    2   143   10  230
Growth Adj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   5  360  171   352  653   11    12    8    2   143   10  230
Added Vol:     0    8    2    64   38    0     0    0    0     1    0   16
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   5  368  173   416  691   11    12    8    2   144   10  246
User Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:    0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:    6  409  192   462  768   12    13    9    2   160   11  273
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   6  409  192   462  768   12    13    9    2   160   11  273
PCE Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:    6  409  192   462  768   12    13    9    2   160   11  273
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment: 0.93 0.93 0.93  0.93 0.98 0.98  0.78 0.79 0.78  0.71 0.84 0.76
Lanes:      1.00 0.68 0.32  1.00 0.98 0.02  0.55 0.37 0.08  1.00 0.04 0.96
Final Sat.: 1769 1206  566  1769 1830   29   804  557  124  1343   56 1398
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.34 0.34  0.26 0.42 0.42  0.02 0.02 0.02  0.12 0.20 0.20
Crit Moves:      ****       ****                                     ****
Green/Cycle: 0.01 0.39 0.39  0.30 0.69 0.69  0.23 0.23 0.23  0.23 0.23 0.23
Volume/Cap: 0.61 0.86 0.86  0.86 0.61 0.61  0.07 0.07 0.07  0.52 0.86 0.86
Delay/Veh: 116.0 32.7 32.7  39.5  7.4  7.4  24.4 24.4 24.4  28.8 49.5 49.5
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh: 116.0 32.7 32.7  39.5  7.4  7.4  24.4 24.4 24.4  28.8 49.5 49.5
DesignQueue:   0   12    6    15   12    0     0    0    0     6    0   10
********************************************************************************
```

```
------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
******************************************************************************
Cycle (sec):          100               Critical Vol./Cap. (X):        0.537
Loss Time (sec):       12 (Y+R =  4 sec) Average Delay (sec/veh):        27.5
Optimal Cycle:         43               Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      51    76    46    39   260    32    58   307    96    37   164    28
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   51    76    46    39   260    32    58   307    96    37   164    28
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    57    84    51    43   289    36    64   341   107    41   182    31
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   57    84    51    43   289    36    64   341   107    41   182    31
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    57    84    51    43   289    36    64   341   107    41   182    31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  0.94  0.94  0.95  0.98  0.98  0.95  0.96  0.96  0.95  0.98  0.98
Lanes:       1.00  0.62  0.38  1.00  0.89  0.11  1.00  0.76  0.24  1.00  0.85  0.15
Final Sat.:  1805  1115   677  1805  1661   207  1805  1394   437  1805  1588   270
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.08  0.08  0.02  0.17  0.17  0.04  0.24  0.24  0.02  0.11  0.11
Crit Moves:  ****                    ****              ****        ****
Green/Cycle: 0.06  0.29  0.29  0.09  0.32  0.32  0.12  0.46  0.46  0.04  0.38  0.38
Volume/Cap:  0.54  0.26  0.26  0.26  0.54  0.54  0.30  0.54  0.54  0.54  0.30  0.30
Delay/Veh:   51.1  27.5  27.5  43.1  28.6  28.6  41.2  20.3  20.3  54.3  22.0  22.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  51.1  27.5  27.5  43.1  28.6  28.6  41.2  20.3  20.3  54.3  22.0  22.0
DesignQueue:    3     3     2     2    11     1     3    11     3     2     6     1
******************************************************************************
```

```
-----------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                  Level Of Service Computation Report
         2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
*****************************************************************************
Cycle (sec):          100                Critical Vol./Cap. (X):        0.764
Loss Time (sec):       12 (Y+R =  4 sec) Average Delay (sec/veh):        37.3
Optimal Cycle:         70                Level Of Service:                  D
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:   0     0     0   0     0     0   0     0     0   0     0     0
Lanes:       1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      51   76    46    39  260    32    58  307    96    37  164    28
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   51   76    46    39  260    32    58  307    96    37  164    28
Added Vol:     16   16    41    13   67     0     0    0    67   172    1     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   67   92    87    52  327    32    58  307   163   209  165    31
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    74  102    97    58  363    36    64  341   181   232  183    34
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   74  102    97    58  363    36    64  341   181   232  183    34
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    74  102    97    58  363    36    64  341   181   232  183    34
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.93  0.93  0.95 0.99  0.99  0.95 0.95  0.95  0.95 0.98  0.98
Lanes:       1.00 0.51  0.49  1.00 0.91  0.09  1.00 0.65  0.35  1.00 0.84  0.16
Final Sat.:  1805  903   859  1805 1706   169  1805 1177   625  1805 1564   291
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.11  0.11  0.03 0.21  0.21  0.04 0.29  0.29  0.13 0.12  0.12
Crit Moves:  ****                  ****              ****        ****
Green/Cycle: 0.05 0.26  0.26  0.07 0.28  0.28  0.13 0.38  0.38  0.17 0.42  0.42
Volume/Cap:  0.76 0.44  0.44  0.44 0.76  0.76  0.28 0.76  0.76  0.76 0.28  0.28
Delay/Veh:   76.3 31.6  31.6  46.6 39.7  39.7  40.1 32.2  32.2  50.6 19.2  19.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  76.3 31.6  31.6  46.6 39.7  39.7  40.1 32.2  32.2  50.6 19.2  19.2
DesignQueue:    4    4     4     3   15     2     3   13     7    11    6     1
*****************************************************************************
```

```
------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #3 Esplanade / 1st Avenue
******************************************************************************
Cycle (sec):         80                Critical Vol./Cap. (X):        0.663
Loss Time (sec):      9 (Y+R =  4 sec) Average Delay (sec/veh):        20.5
Optimal Cycle:       45                Level Of Service:                  C
******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  2  0  1    0  0  1  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  675    67    0  850    71   59  378    45   82  274    87
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0  675    67    0  850    71   59  378    45   82  274    87
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:     0  750    74    0  944    79   66  420    50   91  304    97
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0  750    74    0  944    79   66  420    50   91  304    97
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     0  750    74    0  944    79   66  420    50   91  304    97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 0.95  0.85 1.00 0.94  0.94 0.95 0.98  0.98 0.95 0.96  0.96
Lanes:       0.00 2.00  1.00 0.00 1.85  0.15 1.00 0.89  0.11 1.00 0.76  0.24
Final Sat.:     0 3610  1615    0 3291   275 1805 1671   199 1805 1389   443
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.21  0.05 0.00 0.29  0.29 0.04 0.25  0.25 0.05 0.22  0.22
Crit Moves:  ****                 ****                 ****      ****
Green/Cycle: 0.00 0.43  0.43 0.00 0.43  0.43 0.07 0.38  0.38 0.08 0.39  0.39
Volume/Cap:  0.00 0.48  0.11 0.00 0.66  0.66 0.56 0.66  0.66 0.66 0.56  0.56
Delay/Veh:    0.0 16.5  13.6  0.0 19.2  19.2 42.3 23.0  23.0 47.5 20.1  20.1
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0 16.5  13.6  0.0 19.2  19.2 42.3 23.0  23.0 47.5 20.1  20.1
DesignQueue:    0   20     2    0   26     2    3   12     1    4    9     3
******************************************************************************
```

```
---------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
***************************************************************************
Intersection #3 Esplanade / 1st Avenue
***************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        0.759
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        23.6
Optimal Cycle:        57               Level Of Service:                  C
***************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:       0  0  2  0  1   0  0  1  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  675    67     0  850    71    59  378    45    82  274    87
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  675    67     0  850    71    59  378    45    82  274    87
Added Vol:      0   12    15     0   85     0     8    9     0    87   15     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  687    82     0  935    71    67  387    45   169  289    87
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0  763    91     0 1039    79    74  430    50   188  321    97
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  763    91     0 1039    79    74  430    50   188  321    97
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0  763    91     0 1039    79    74  430    50   188  321    97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.94  0.94  0.95 0.98  0.98  0.95 0.97  0.97
Lanes:       0.00 2.00  1.00  0.00 1.86  0.14  1.00 0.90  0.10  1.00 0.77  0.23
Final Sat.:     0 3610  1615     0 3318   252  1805 1675   195  1805 1408   425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.21  0.06  0.00 0.31  0.31  0.04 0.26  0.26  0.10 0.23  0.23
Crit Moves:  ****                  ****              ****        ****
Green/Cycle: 0.00 0.41  0.41  0.00 0.41  0.41  0.07 0.34  0.34  0.14 0.40  0.40
Volume/Cap:  0.00 0.51  0.14  0.00 0.76  0.76  0.57 0.76  0.76  0.76 0.57  0.57
Delay/Veh:    0.0 17.8  14.7   0.0 22.5  22.5  41.6 28.9  28.9  46.0 19.5  19.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 17.8  14.7   0.0 22.5  22.5  41.6 28.9  28.9  46.0 19.5  19.5
DesignQueue:    0   21     2     0   29     2     3   14     2     7    9     3
***************************************************************************
```

```
------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #4 Esplanade / Sacramento Ave
******************************************************************************
Average Delay (sec/veh):      22.6  2.03  Worst Case Level Of Service:       C
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      264  750    0     0  869   233     0    0   213     0    0     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   264  750    0     0  869   233     0    0   213     0    0     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    293  833    0     0  966   259     0    0   237     0    0     0
Reduct Vol:      0    0    0     0    0     0     0    0     0     0    0     0
Final Vol.:    293  833    0     0  966   259     0    0   237     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1224 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   612  xxxx xxxx xxxxx
Potent Cap.:   565 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   436  xxxx xxxx xxxxx
Move Cap.:     565 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   436  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del: 18.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  22.6 xxxxx xxxx xxxxx
LOS by Move:    C    *     *     *    *     *     *    *     C     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      xxxxxx           xxxxxx            22.6           xxxxxx
ApproachLOS:         *                *                C               *
```

```
--------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Esplanade / Sacramento Ave
********************************************************************************
Average Delay (sec/veh):     40.1  9.1   Worst Case Level Of Service:      E
********************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:     264  750    0     0  869   233     0    0   213     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  264  750    0     0  869   233     0    0   213     0    0     0
Added Vol:     94   27    0     0  114    58     0    0    44     0    0     0
PasserByVol:    0    0    0     0    0     0     0    0     0     0    0     0
Initial Fut:  358  777    0     0  983   291     0    0   257     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   398  863    0     0 1092   323     0    0   286     0    0     0
Reduct Vol:     0    0    0     0    0     0     0    0     0     0    0     0
Final Vol.:   398  863    0     0 1092   323     0    0   286     0    0     0
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: 1416 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   708  xxxx xxxx xxxxx
Potent Cap.:  477 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   377  xxxx xxxx xxxxx
Move Cap.:    477 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   377  xxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del: 40.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  38.9 xxxxx xxxx xxxxx
LOS by Move:    E    *     *     *    *     *     *    *     E     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx            38.9            xxxxxx
ApproachLOS:        *                *                E                *
```

```
--------------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                  Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #5 Warner Ave / Legion Avenue
********************************************************************************
Cycle (sec):         80              Critical Vol./Cap. (X):         0.219
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):        9.5
Optimal Cycle:       26              Level Of Service:                  A
********************************************************************************
Approach:      North Bound       South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||-----------------||-----------------||-----------------|
Control:        Permitted         Permitted         Permitted         Permitted
Rights:          Include           Include           Include           Include
Min. Green:     0    20     0    0    20     0    0     0     0    0    20     0
Lanes:        0  0  0  1  0    1  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|-----------------||-----------------||-----------------||-----------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       0   123    83   161   220     0     0     0     0    39     0    54
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   123    83   161   220     0     0     0     0    39     0    54
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:     0   137    92   179   244     0     0     0     0    43     0    60
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   137    92   179   244     0     0     0     0    43     0    60
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0   137    92   179   244     0     0     0     0    43     0    60
------------|-----------------||-----------------||-----------------||-----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.95  0.91  0.62  1.00  1.00  1.00  1.00  1.00  0.80  1.00  0.70
Lanes:       0.00  0.59  0.41  1.00  1.00  0.00  0.00  0.00  0.00  0.38  0.00  0.62
Final Sat.:     0  1059   711  1178  1900     0     0     0     0   585     0   816
------------|-----------------||-----------------||-----------------||-----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.13  0.13  0.15  0.13  0.00  0.00  0.00  0.00  0.07  0.00  0.07
Crit Moves:        ****                                            ****
Green/Cycle: 0.00  0.59  0.59  0.59  0.59  0.00  0.00  0.00  0.00  0.34  0.00  0.34
Volume/Cap:  0.00  0.22  0.22  0.26  0.22  0.00  0.00  0.00  0.00  0.22  0.00  0.22
Delay/Veh:    0.0   7.8   7.8   8.1   7.8   0.0   0.0   0.0   0.0  19.3   0.0  19.3
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   7.8   7.8   8.1   7.8   0.0   0.0   0.0   0.0  19.3   0.0  19.3
DesignQueue:    0     3     2     3     5     0     0     0     0     1     0     2
********************************************************************************
```

```
------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #5 Warner Ave / Legion Avenue
******************************************************************************
Cycle (sec):           80                Critical Vol./Cap. (X):        0.278
Loss Time (sec):        6 (Y+R =  4 sec) Average Delay (sec/veh):         9.8
Optimal Cycle:         26                Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0   20     0     0   20     0     0    0     0     0   20     0
Lanes:        0  0  0  1  0   1  0  1  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       0  123    83   161  220     0     0    0     0    39    0    54
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  123    83   161  220     0     0    0     0    39    0    54
Added Vol:      0   61     1     4   56     0     0    0     0     4    0    18
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  184    84   165  276     0     0    0     0    43    0    72
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0  204    93   183  307     0     0    0     0    48    0    80
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  204    93   183  307     0     0    0     0    48    0    80
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0  204    93   183  307     0     0    0     0    48    0    80
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.96  0.93  0.60 1.00  1.00  1.00 1.00  1.00  0.81 1.00  0.69
Lanes:       0.00 0.68  0.32  1.00 1.00  0.00  0.00 0.00  0.00  0.34 0.00  0.66
Final Sat.:     0 1239   565  1143 1900     0     0    0     0   518    0   863
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.16  0.16  0.16 0.16  0.00  0.00 0.00  0.00  0.09 0.00  0.09
Crit Moves:       ****                                          ****
Green/Cycle: 0.00 0.59  0.59  0.59 0.59  0.00  0.00 0.00  0.00  0.33 0.00  0.33
Volume/Cap:  0.00 0.28  0.28  0.27 0.27  0.00  0.00 0.00  0.00  0.28 0.00  0.28
Delay/Veh:    0.0  8.1   8.1   8.1  8.1   0.0   0.0  0.0   0.0  19.9  0.0  19.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  8.1   8.1   8.1  8.1   0.0   0.0  0.0   0.0  19.9  0.0  19.9
DesignQueue:    0    4     2     3    6     0     0    0     0     1    0     2
******************************************************************************
```

```
-------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                      Level Of Service Computation Report
              2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
*******************************************************************************
Cycle (sec):           80                Critical Vol./Cap. (X):        0.432
Loss Time (sec):        9 (Y+R =  4 sec) Average Delay (sec/veh):        17.2
Optimal Cycle:         30                Level Of Service:                  B
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||-----------------||-----------------||-----------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:          Include          Include           Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  1  0  0  1
------------|-----------------||-----------------||-----------------||-----------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      27  488    82   126  534     3    46   63    65    46   50    91
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   27  488    82   126  534     3    46   63    65    46   50    91
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    30  542    91   140  593     3    51   70    72    51   56   101
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   30  542    91   140  593     3    51   70    72    51   56   101
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    30  542    91   140  593     3    51   70    72    51   56   101
------------|-----------------||-----------------||-----------------||-----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.91  0.91  0.93 0.93  0.93  0.84 0.84  0.83  0.81 0.81  0.79
Lanes:       1.00 1.71  0.29  1.00 1.99  0.01  0.26 0.36  0.38  0.48 0.52  1.00
Final Sat.:  1769 2963   497  1769 3516    18   419  575   592   733  804  1507
------------|-----------------||-----------------||-----------------||-----------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.18  0.18  0.08 0.17  0.17  0.12 0.12  0.12  0.07 0.07  0.07
Crit Moves:       ****        ****                   ****
Green/Cycle: 0.06 0.42  0.42  0.18 0.55  0.55  0.28 0.28  0.28  0.28 0.28  0.28
Volume/Cap:  0.31 0.43  0.43  0.43 0.31  0.31  0.43 0.43  0.43  0.25 0.25  0.24
Delay/Veh:   38.1 16.5  16.5  29.9  9.8   9.8  24.2 24.2  24.2  22.5 22.5  22.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  38.1 16.5  16.5  29.9  9.8   9.8  24.2 24.2  24.2  22.5 22.5  22.4
DesignQueue:    1   15     2     5   12     0     2    2     2     2    2     3
*******************************************************************************
```

```
---------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------------

                      Level Of Service Computation Report
              2000 HCM Operations Method (Future Volume Alternative)
*********************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
*********************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):         0.454
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):         17.5
Optimal Cycle:        31                 Level Of Service:                  B
*********************************************************************************
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted         Permitted
Rights:           Include          Include           Include           Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      27  488    82   126  534     3    46   63    65    46   50    91
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   27  488    82   126  534     3    46   63    65    46   50    91
Added Vol:      0    6     6    23   15     0     0    0     0     1    0     5
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   27  494    88   149  549     3    46   63    65    47   50    96
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    30  549    98   166  610     3    51   70    72    52   56   107
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   30  549    98   166  610     3    51   70    72    52   56   107
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    30  549    98   166  610     3    51   70    72    52   56   107
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.91  0.91  0.93 0.93  0.93  0.84 0.84  0.83  0.80 0.80  0.79
Lanes:       1.00 1.70  0.30  1.00 1.99  0.01  0.26 0.36  0.38  0.48 0.52  1.00
Final Sat.:  1769 2933   524  1769 3517    17   419  575   591   730  786  1504
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.19  0.19  0.09 0.17  0.17  0.12 0.12  0.12  0.07 0.07  0.07
Crit Moves:       ****        ****                   ****
Green/Cycle: 0.06 0.41  0.41  0.21 0.56  0.56  0.27 0.27  0.27  0.27 0.27  0.27
Volume/Cap:  0.31 0.45  0.45  0.45 0.31  0.31  0.45 0.45  0.45  0.27 0.27  0.27
Delay/Veh:   38.1 17.2  17.2  28.7  9.3   9.3  25.2 25.2  25.2  23.4 23.4  23.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  38.1 17.2  17.2  28.7  9.3   9.3  25.2 25.2  25.2  23.4 23.4  23.4
DesignQueue:    1   15     3     6   12     0     2    2     2     2    2     4
*********************************************************************************
```

```
------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #7 2nd Avenue / Cherry St
******************************************************************************
Average Delay (sec/veh):     16.9   /.80   Worst Case Level Of Service:       C
******************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:         Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:       2   17     7    17   10     4    47  249    11    20  207   250
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    2   17     7    17   10     4    47  249    11    20  207   250
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     2   17     7    17   10     4    47  249    11    20  207   250
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     2   17     7    17   10     4    47  249    11    20  207   250
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  537  886   170   639  766   269   477 xxxx xxxxx   280 xxxx xxxxx
Potent Cap.:  431  286   851   365  335   736  1096 xxxx xxxxx  1294 xxxx xxxxx
Move Cap.:    385  259   822   316  304   711  1077 xxxx xxxxx  1273 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  328 xxxxx  xxxx  336 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 16.9 xxxxx xxxxx 16.8 xxxxx   8.5 xxxx xxxxx   7.9 xxxx xxxxx
Shared LOS:     *    C     *     *    C     *     A    *     *     A    *     *
ApproachDel:        16.9             16.8            xxxxxx           xxxxxx
ApproachLOS:          C                C                *                *
```

```
-----------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                  Level Of Service Computation Report
         2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #7 2nd Avenue / Cherry St
*****************************************************************************
Average Delay (sec/veh):     17.5    1.8  Worst Case Level Of Service:      C
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        2   17     7    17   10     4    47  249    11    20  207   250
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     2   17     7    17   10     4    47  249    11    20  207   250
Added Vol:       0    0     0     0    0     0     0   29     0     0    6     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     2   17     7    17   10     4    47  278    11    20  213   250
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:      2   17     7    17   10     4    47  278    11    20  213   250
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      2   17     7    17   10     4    47  278    11    20  213   250
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   569  921   185   660  801   272   483 xxxx xxxxx   309 xxxx xxxxx
Potent Cap.:   409  273   833   353  320   732  1090 xxxx xxxxx  1263 xxxx xxxxx
Move Cap.:     365  247   805   305  290   708  1072 xxxx xxxxx  1242 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.4 xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  313 xxxxx  xxxx  323 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 17.5 xxxxx xxxxx 17.3 xxxxx   8.5 xxxx xxxxx   7.9 xxxx xxxxx
Shared LOS:      *    C     *     *    C     *     A    *     *     A    *     *
ApproachDel:        17.5             17.3            xxxxxx           xxxxxx
ApproachLOS:          C                C                *                *
```

```
---------------------------------------------------------------------------------
                  EXISTING plus MASTER PLAN (4,000)
                     5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*********************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
*********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.259
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        11.7
Optimal Cycle:        19                Level Of Service:                  B
*********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      99    89    21   48    75    19   21   238    13   10   359    62
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   99    89    21   48    75    19   21   238    13   10   359    62
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90
PHF Volume:   110    99    23   53    83    21   23   264    14   11   399    69
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:  110    99    23   53    83    21   23   264    14   11   399    69
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:   110    99    23   53    83    21   23   264    14   11   399    69
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  0.62  0.95  0.93 0.60  0.95  0.92 0.84  0.84  0.83 0.86  0.86  0.84
Lanes:       1.00  0.81  0.19 1.00  0.79  0.21 0.15  1.76  0.09 0.05  1.66  0.29
Final Sat.:  1180  1461   339 1138  1433   362  244  2802   149   75  2720   470
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09  0.07  0.07 0.05  0.06  0.06 0.09  0.09  0.09 0.15  0.15  0.15
Crit Moves:  ****                                                 ****
Green/Cycle: 0.36  0.36  0.36 0.36  0.36  0.36 0.57  0.57  0.57 0.57  0.57  0.57
Volume/Cap:  0.26  0.19  0.19 0.13  0.16  0.16 0.17  0.17  0.17 0.26  0.26  0.26
Delay/Veh:   18.4  17.8  17.8 17.4  17.5  17.5  8.4   8.4   8.4  8.9   8.9   8.9
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:  18.4  17.8  17.8 17.4  17.5  17.5  8.4   8.4   8.4  8.9   8.9   8.9
DesignQueue:    3     3     1    2     2     1    0     5     0    0     8     1
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
********************************************************************************
Cycle (sec):          80             Critical Vol./Cap. (X):         0.286
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):      12.2
Optimal Cycle:        20             Level Of Service:                  B
********************************************************************************
Approach:       North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted         Permitted         Permitted
Rights:          Include          Include           Include           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      99    89    21    48    75    19    21   238    13    10   359    62
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   99    89    21    48    75    19    21   238    13    10   359    62
Added Vol:      0    18     7    37    23     1     2    27     0     2     5    41
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   99   107    28    85    98    20    23   265    13    12   364   103
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:   110   119    31    94   109    22    26   294    14    13   404   114
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  110   119    31    94   109    22    26   294    14    13   404   114
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   110   119    31    94   109    22    26   294    14    13   404   114
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.58  0.95  0.92  0.56  0.96  0.93  0.83  0.83  0.83  0.85  0.85  0.82
Lanes:       1.00  0.79  0.21  1.00  0.83  0.17  0.16  1.76  0.08  0.05  1.51  0.44
Final Sat.:  1111  1422   370  1065  1504   304   247  2791   133    79  2446   690
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10  0.08  0.08  0.09  0.07  0.07  0.11  0.11  0.11  0.17  0.17  0.17
Crit Moves:  ****                                                       ****
Green/Cycle: 0.35  0.35  0.35  0.35  0.35  0.35  0.58  0.58  0.58  0.58  0.58  0.58
Volume/Cap:  0.29  0.24  0.24  0.25  0.21  0.21  0.18  0.18  0.18  0.29  0.29  0.29
Delay/Veh:   19.4  18.8  18.8  19.1  18.6  18.6   8.0   8.0   8.0   8.6   8.6   8.6
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  19.4  18.8  18.8  19.1  18.6  18.6   8.0   8.0   8.0   8.6   8.6   8.6
DesignQueue:    3     4     1     3     3     1     0     6     0     0     8     2
********************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #9 2nd Street / Hazel St      0.8
********************************************************************************
Average Delay (sec/veh):      13.4       Worst Case Level Of Service:         B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       21    0   12     2    0    5     1  249   37    11  398    5
Growth Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    21    0   12     2    0    5     1  249   37    11  398    5
User Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:      0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:     23    0   13     2    0    6     1  277   41    12  442    6
Reduct Vol:      0    0    0     0    0    0     0    0    0     0    0    0
Final Vol.:     23    0   13     2    0    6     1  277   41    12  442    6
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5 xxxx  6.9   7.5 xxxx  6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5 xxxx  3.3   3.5 xxxx  3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   585 xxxx  199   650 xxxx  264   468 xxxx xxxxx   338 xxxx xxxxx
Potent Cap.:   399 xxxx  815   358 xxxx  741  1104 xxxx xxxxx  1233 xxxx xxxxx
Move Cap.:     379 xxxx  788   338 xxxx  716  1086 xxxx xxxxx  1212 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:    *    *    *     *    *    *     A    *    *     A    *    *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  467 xxxxx  xxxx  542 xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Shrd StpDel:xxxxx 13.4 xxxxx xxxxx 11.7 xxxxx   8.3 xxxx xxxxx   8.0 xxxx xxxxx
Shared LOS:     *    B    *     *    B    *     A    *    *     A    *    *
ApproachDel:        13.4             11.7            xxxxxx           xxxxxx
ApproachLOS:          B                B                *                *
```

```
-----------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------

                  Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #9 2nd Street / Hazel St
*****************************************************************************
Average Delay (sec/veh):       19.4  2.4   Worst Case Level Of Service:      C
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      21    0    12    2    0     5    1  249    37   11  398     5
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   21    0    12    2    0     5    1  249    37   11  398     5
Added Vol:      7    0    14    0    0     0    0   40    31   58   41     0
PasserByVol:   26    0     0    0    0     0    0  -29    29    0  -26     0
Initial Fut:   54    0    26    2    0     5    1  260    97   69  413     5
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:    60    0    29    2    0     6    1  289   108   77  459     6
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:    60    0    29    2    0     6    1  289   108   77  459     6
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9  7.5 xxxx   6.9  4.1 xxxx xxxxx  4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3  3.5 xxxx   3.3  2.2 xxxx xxxxx  2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  768 xxxx   238  802 xxxx   272  484 xxxx xxxxx  417 xxxx xxxxx
Potent Cap.:  295 xxxx   769  279 xxxx   732 1089 xxxx xxxxx 1153 xxxx xxxxx
Move Cap.:    267 xxxx   744  245 xxxx   707 1071 xxxx xxxxx 1134 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  8.4 xxxx xxxxx  8.2 xxxx xxxxx
LOS by Move:    *    *     *    *    *     *    A    *     *    A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  338 xxxxx xxxx  459 xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Shrd StpDel:xxxxx 19.4 xxxxx xxxxx 13.0 xxxxx  8.4 xxxx xxxxx  8.4 xxxx xxxxx
Shared LOS:     *    C     *    *    B     *    A    *     *    A    *     *
ApproachDel:       19.4             13.0            xxxxxx           xxxxxx
ApproachLOS:         C                B                *                *
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #10 2nd Street / Chestnut St
*******************************************************************************
Average Delay (sec/veh):     13.0   1.3   Worst Case Level Of Service:       B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      26    0    24    0    0     0     0  246    29    46  394     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   26    0    24    0    0     0     0  246    29    46  394     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    29    0    27    0    0     0     0  273    32    51  438     0
Reduct Vol:     0    0     0    0    0     0     0    0     0     0    0     0
Final Vol.:    29    0    27    0    0     0     0  273    32    51  438     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  651 xxxx   193  xxxx xxxx xxxxx  xxxx xxxx xxxxx   326 xxxx xxxxx
Potent Cap.:  406 xxxx   822  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1245 xxxx xxxxx
Move Cap.:    380 xxxx   795  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1225 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  507 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 13.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.1 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:       13.0            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #10 2nd Street / Chestnut St
*******************************************************************************
Average Delay (sec/veh):       0.0         Worst Case Level Of Service:       A
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:         Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:            Include          Include          Include          Include
Lanes:         0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       26    0    24     0    0     0     0  246    29    46  394     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    26    0    24     0    0     0     0  246    29    46  394     0
Added Vol:       0    0     0     0    0     0     0   54     0     0   99     0
PasserByVol:   -26    0   -24     0    0     0     0    0   -29   -46    0     0
Initial Fut:     0    0     0     0    0     0     0  300     0     0  493     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      0    0     0     0    0     0     0  333     0     0  548     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      0    0     0     0    0     0     0  333     0     0  548     0
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx     0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:      xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #11 2nd Street / Normal Ave
*******************************************************************************
Average Delay (sec/veh):       13.6    1.2  Worst Case Level Of Service:       B
*******************************************************************************
Approach:      North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled      Uncontrolled
Rights:          Include           Include          Include           Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:        3     3    19     9     0    10     7   228    33    42   424    15
Growth Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:     3     3    19     9     0    10     7   228    33    42   424    15
User Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:      3     3    19     9     0    10     7   228    33    42   424    15
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:      3     3    19     9     0    10     7   228    33    42   424    15
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5   6.5   6.9   7.5  xxxx   6.9   4.1  xxxx xxxxx   4.1  xxxx xxxxx
FollowUpTim:  3.5   4.0   3.3   3.5  xxxx   3.3   2.2  xxxx xxxxx   2.2  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  595   822   171   685  xxxx   260   459  xxxx xxxxx   281  xxxx xxxxx
Potent Cap.:  392   311   850   338  xxxx   745  1113  xxxx xxxxx  1293  xxxx xxxxx
Move Cap.:    363   289   822   307  xxxx   721  1094  xxxx xxxxx  1272  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx   8.3  xxxx xxxxx   7.8  xxxx xxxxx
LOS by Move:    *     *     *     *     *     *     A     *     *     A     *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx   598 xxxxx  xxxx   440 xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Shrd StpDel:xxxxx  11.3 xxxxx xxxxx  13.6 xxxxx   8.3  xxxx xxxxx   7.9  xxxx xxxxx
Shared LOS:     *     B     *     *     B     *     A     *     *     A     *     *
ApproachDel:        11.3              13.6             xxxxxx            xxxxxx
ApproachLOS:          B                 B                 *                 *
```

```
--------------------------------------------------------------------------------
                         EXISTING plus MASTER PLAN (4,000)
                           5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                        Level Of Service Computation Report
             2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #11 2nd Street / Normal Ave
********************************************************************************
Average Delay (sec/veh):      20.7  2.9  Worst Case Level Of Service:         C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:       3    3    19     9    0    10     7  228    33    42  424    15
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3    3    19     9    0    10     7  228    33    42  424    15
Added Vol:      7    0    24     0    0     0     0   26    28   100   93     0
PasserByVol:    0    0    24     0    0     0     0  -24     0    46  -46     0
Initial Fut:   10    3    67     9    0    10     7  230    61   188  471    15
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    10    3    67     9    0    10     7  230    61   188  471    15
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    10    3    67     9    0    10     7  230    61   188  471    15
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5 xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5 xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  926 1177   186  1025 xxxx   283   506 xxxx xxxxx   311 xxxx xxxxx
Potent Cap.:  227  193   831   192 xxxx   720  1069 xxxx xxxxx  1261 xxxx xxxxx
Move Cap.:    187  153   804   145 xxxx   696  1051 xxxx xxxxx  1240 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.4 xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  511 xxxxx  xxxx  249 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 13.3 xxxxx xxxxx 20.7 xxxxx   8.4 xxxx xxxxx   8.4 xxxx xxxxx
Shared LOS:     *    B     *     *    C     *     A    *     *     A    *     *
ApproachDel:        13.3             20.7            xxxxxx           xxxxxx
ApproachLOS:          B                C                *                *
```

```
-------------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 2nd Street / Broadway
*******************************************************************************
Cycle (sec):        80              Critical Vol./Cap. (X):        0.349
Loss Time (sec):     6 (Y+R =  4 sec) Average Delay (sec/veh):      13.5
Optimal Cycle:      46              Level Of Service:                 B
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0    20     0    0    20     0    0    20     0
Lanes:        0  0  0  0  0   0  1  1  1  0   0  0  1  1  0   0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      0     0     0    48   660    87     0   200    50    55   343     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   0     0     0    48   660    87     0   200    50    55   343     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    0     0     0    53   733    97     0   222    56    61   381     0
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   0     0     0    53   733    97     0   222    56    61   381     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0     0     0    53   733    97     0   222    56    61   381     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.86  0.86  0.86  1.00  0.90  0.89  0.81  0.81  1.00
Lanes:       0.00  0.00  0.00  0.18  2.49  0.33  0.00  1.59  0.41  0.28  1.72  0.00
Final Sat.:    0     0     0   295  4086   541     0  2732   689   425  2652     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.18  0.18  0.18  0.00  0.08  0.08  0.14  0.14  0.00
Crit Moves:                          ****                                ****
Green/Cycle: 0.00  0.00  0.00  0.51  0.51  0.51  0.00  0.41  0.41  0.41  0.41  0.00
Volume/Cap:  0.00  0.00  0.00  0.35  0.35  0.35  0.00  0.20  0.20  0.35  0.35  0.00
Delay/Veh:    0.0   0.0   0.0  11.6  11.6  11.6   0.0  15.2  15.2  16.4  16.4   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  11.6  11.6  11.6   0.0  15.2  15.2  16.4  16.4   0.0
DesignQueue:   0     0     0     1    17     2     0     6     1     2    10     0
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #12 2nd Street / Broadway
********************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        0.437
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):      14.3
Optimal Cycle:        46              Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include           Include          Include
Min. Green:    0    0    0    0   20    0    0   20    0    0   20    0
Lanes:        0  0  0  0  0   0  1  1  1  0   0  0  1  1  0   0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        0    0    0    48  660   87     0  200   50    55  343    0
Growth Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:     0    0    0    48  660   87     0  200   50    55  343    0
Added Vol:       0    0    0     2   61   73     0   22   27     6  120    0
PasserByVol:     0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:     0    0    0    50  721  160     0  222   77    61  463    0
User Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:      0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:      0    0    0    56  801  178     0  247   86    68  514    0
Reduct Vol:      0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:     0    0    0    56  801  178     0  247   86    68  514    0
PCE Adj:      1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:      1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:      0    0    0    56  801  178     0  247   86    68  514    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:   1.00 1.00 1.00  0.85 0.85 0.85  1.00 0.89 0.88  0.81 0.81 1.00
Lanes:        0.00 0.00 0.00  0.16 2.32 0.52  0.00 1.48 0.52  0.23 1.77 0.00
Final Sat.:      0    0    0   261 3732  829     0 2510  874   359 2711    0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.00 0.00  0.21 0.21 0.21  0.00 0.10 0.10  0.19 0.19 0.00
Crit Moves:                        ****                              ****
Green/Cycle:  0.00 0.00 0.00  0.49 0.49 0.49  0.00 0.43 0.43  0.43 0.43 0.00
Volume/Cap:   0.00 0.00 0.00  0.44 0.44 0.44  0.00 0.23 0.23  0.44 0.44 0.00
Delay/Veh:     0.0  0.0  0.0  13.3 13.3 13.3   0.0 14.3 14.3  16.1 16.1  0.0
User DelAdj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:    0.0  0.0  0.0  13.3 13.3 13.3   0.0 14.3 14.3  16.1 16.1  0.0
DesignQueue:     0    0    0     1   19    4     0    6    2     2   13    0
********************************************************************************
```

```
-------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #13 2nd Street / Main Street
*******************************************************************************
Cycle (sec):            80               Critical Vol./Cap. (X):        0.337
Loss Time (sec):         6 (Y+R =  4 sec) Average Delay (sec/veh):       12.8
Optimal Cycle:          46               Level Of Service:                  B
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0   20    0     0    0    0     0   20    0     0   20    0
Lanes:         0  1  1  1  0    0  0  0  0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:     104  695   113     0    0     0    82  164     0     0  291    24
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  104  695   113     0    0     0    82  164     0     0  291    24
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   116  772   126     0    0     0    91  182     0     0  323    27
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  116  772   126     0    0     0    91  182     0     0  323    27
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   116  772   126     0    0     0    91  182     0     0  323    27
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.86  0.86  1.00 1.00  1.00  0.69 0.69  1.00  1.00 0.92  0.92
Lanes:       0.34 2.29  0.37  0.00 0.00  0.00  0.67 1.33  0.00  0.00 1.85  0.15
Final Sat.:   560 3724   608     0    0     0   874 1748     0     0 3226   270
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.21  0.21  0.00 0.00  0.00  0.10 0.10  0.00  0.00 0.10  0.10
Crit Moves:       ****                              ****
Green/Cycle: 0.62 0.62  0.62  0.00 0.00  0.00  0.31 0.31  0.00  0.00 0.31  0.31
Volume/Cap:  0.34 0.34  0.34  0.00 0.00  0.00  0.34 0.34  0.00  0.00 0.32  0.32
Delay/Veh:    7.5  7.5   7.5   0.0  0.0   0.0  21.5 21.5   0.0   0.0 21.4  21.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   7.5  7.5   7.5   0.0  0.0   0.0  21.5 21.5   0.0   0.0 21.4  21.4
DesignQueue:    2   14     2     0    0     0     3    6     0     0   10     1
*******************************************************************************
```

```
------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                   Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #13 2nd Street / Main Street
******************************************************************************
Cycle (sec):           80              Critical Vol./Cap. (X):        0.403
Loss Time (sec):        6 (Y+R =  4 sec) Average Delay (sec/veh):      13.0
Optimal Cycle:         46              Level Of Service:                  B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase      Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0   20    0     0    0    0     0   20    0     0   20    0
Lanes:        0  1  1  1  0   0  0  0  0  0   0  1  1  0  0   0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:     104  695   113     0    0     0    82  164     0     0  291    24
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  104  695   113     0    0     0    82  164     0     0  291    24
Added Vol:    100   90     1     0    0     0    17    7     0     0   26     8
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  204  785   114     0    0     0    99  171     0     0  317    32
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   227  872   127     0    0     0   110  190     0     0  352    36
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  227  872   127     0    0     0   110  190     0     0  352    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   227  872   127     0    0     0   110  190     0     0  352    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.86  0.86  1.00 1.00  1.00  0.64 0.64  1.00  1.00 0.92  0.92
Lanes:       0.56 2.13  0.31  0.00 0.00  0.00  0.73 1.27  0.00  0.00 1.81  0.19
Final Sat.:   911 3501   510     0    0     0   890 1537     0     0 3165   324
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.25 0.25  0.25  0.00 0.00  0.00  0.12 0.12  0.00  0.00 0.11  0.11
Crit Moves:       ****                              ****
Green/Cycle: 0.62 0.62  0.62  0.00 0.00  0.00  0.31 0.31  0.00  0.00 0.31  0.31
Volume/Cap:  0.40 0.40  0.40  0.00 0.00  0.00  0.40 0.40  0.00  0.00 0.36  0.36
Delay/Veh:    7.9  7.9   7.9   0.0  0.0   0.0  22.3 22.3   0.0   0.0 21.8  21.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   7.9  7.9   7.9   0.0  0.0   0.0  22.3 22.3   0.0   0.0 21.8  21.8
DesignQueue:    4   16     2     0    0     0     3    6     0     0   11     1
******************************************************************************
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #14 Park Avenue / Midway
*******************************************************************************
Cycle (sec):         80                Critical Vol./Cap. (X):        0.780
Loss Time (sec):     12 (Y+R =  4 sec) Average Delay (sec/veh):        31.3
Optimal Cycle:       68                Level Of Service:                  C
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase      Split Phase      Split Phase
Rights:            Ignore           Include          Include          Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:         1  0  1  0  1    1  0  1! 0  0    0  0  1! 0  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:        1  244   406   259  220     2     2    0     2   478    0   310
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     1  244   406   259  220     2     2    0     2   478    0   310
User Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:      0.90 0.90  0.00  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.00
PHF Volume:      1  271     0   288  244     2     2    0     2   531    0     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     1  271     0   288  244     2     2    0     2   531    0     0
PCE Adj:      1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:      1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:      1  271     0   288  244     2     2    0     2   531    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.93 0.98  1.00  0.95 0.95  0.95  0.89 1.00  0.89  0.93 1.00  1.00
Lanes:        1.00 1.00  1.00  1.37 0.62  0.01  0.50 0.00  0.50  1.00 1.00  1.00
Final Sat.:   1769 1862  1900  2481 1134     9   848    0   848  1769 1900  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.15  0.00  0.12 0.22  0.22  0.00 0.00  0.00  0.30 0.00  0.00
Crit Moves:        ****              ****       ****              ****
Green/Cycle:  0.19 0.19  0.00  0.28 0.28  0.28  0.00 0.00  0.00  0.38 0.00  0.00
Volume/Cap:   0.00 0.78  0.00  0.42 0.78  0.78  0.78 0.00  0.78  0.78 0.00  0.00
Delay/Veh:    26.5 41.8   0.0  24.0 32.5  32.5 278.4  0.0 278.4  27.4  0.0   0.0
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   26.5 41.8   0.0  24.0 32.5  32.5 278.4  0.0 278.4  27.4  0.0   0.0
DesignQueue:     0   10     0    10    8     0     0    0     0    16    0     0
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #14 Park Avenue / Midway
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        0.829
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):      34.5
Optimal Cycle:        77              Level Of Service:                 C
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase      Split Phase      Split Phase      Split Phase
Rights:           Ignore           Include          Include          Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  1  0  1   1  0  1! 0  0   0  0  1! 0  0   1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      1   244   406   259   220     2     2     0     2   478     0   310
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   1   244   406   259   220     2     2     0     2   478     0   310
Added Vol:     0    37     0    11    26     0     0     0     0     1     0    46
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   1   281   406   270   246     2     2     0     2   479     0   356
User Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:     0.90  0.90  0.00  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00
PHF Volume:    1   312     0   300   273     2     2     0     2   532     0     0
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   1   312     0   300   273     2     2     0     2   532     0     0
PCE Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:    1   312     0   300   273     2     2     0     2   532     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.98  1.00  0.96  0.96  0.96  0.89  1.00  0.89  0.93  1.00  1.00
Lanes:       1.00  1.00  1.00  1.35  0.64  0.01  0.50  0.00  0.50  1.00  1.00  1.00
Final Sat.:  1769  1862  1900  2456  1166     9   848     0   848  1769  1900  1900
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.17  0.00  0.12  0.23  0.23  0.00  0.00  0.00  0.30  0.00  0.00
Crit Moves:        ****              ****        ****              ****
Green/Cycle: 0.20  0.20  0.00  0.28  0.28  0.28  0.00  0.00  0.00  0.36  0.00  0.00
Volume/Cap:  0.00  0.83  0.00  0.43  0.83  0.83  0.83  0.00  0.83  0.83  0.00  0.00
Delay/Veh:   25.5  44.8   0.0  23.7  35.2  35.2 321.8   0.0 321.8  32.1   0.0   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  25.5  44.8   0.0  23.7  35.2  35.2 321.8   0.0 321.8  32.1   0.0   0.0
DesignQueue:   0    12     0    10     9     0     0     0     0    16     0     0
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #15 Midway / Hegan Lane
********************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):         0.520
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):          16.5
Optimal Cycle:        35                 Level Of Service:                   B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted         Permitted
Rights:           Include          Include          Include           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      39  445     0    11  319   362   202     4    24     0     4     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   39  445     0    11  319   362   202     4    24     0     4     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    43  494     0    12  354   402   224     4    27     0     4     4
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Reduced Vol:   43  494     0    12  354   402   224     4    27     0     4     4
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    43  494     0    12  354   402   224     4    27     0     4     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  1.00  0.93 0.98  0.83  0.71 0.71  0.71  1.00 0.91  0.91
Lanes:       1.00 1.00  0.00  1.00 1.00  1.00  0.88 0.01  0.11  0.00 0.50  0.50
Final Sat.:  1769 1862     0  1769 1862  1583  1184   21   143     0  869   869
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.27  0.00  0.01 0.19  0.25  0.19 0.19  0.19  0.00 0.00  0.00
Crit Moves:       ****        ****                   ****
Green/Cycle: 0.05 0.51  0.00  0.01 0.48  0.48  0.36 0.36  0.36  0.00 0.36  0.36
Volume/Cap:  0.53 0.52  0.00  0.52 0.40  0.53  0.52 0.52  0.52  0.00 0.01  0.01
Delay/Veh:   44.0 13.6   0.0  58.7 13.8  15.4  20.9 20.9  20.9   0.0 16.3  16.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  44.0 13.6   0.0  58.7 13.8  15.4  20.9 20.9  20.9   0.0 16.3  16.3
DesignQueue:    2   12     0     1    9    10     7    0     1     0    0     0
********************************************************************************
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.547
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        16.5
Optimal Cycle:        36                Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0   1  0  1  0  1   0  0  1! 0  0   0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      39  445     0   11  319   362  202     4    24    0     4     4
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   39  445     0   11  319   362  202     4    24    0     4     4
Added Vol:      1   33     0    0    8    20    5     0     0    0     0     0
PasserByVol:    0    0     0    0    0     0    0     0     0    0     0     0
Initial Fut:   40  478     0   11  327   382  207     4    24    0     4     4
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:    44  531     0   12  363   424  230     4    27    0     4     4
Reduct Vol:     0    0     0    0    0     0    0     0     0    0     0     0
Reduced Vol:   44  531     0   12  363   424  230     4    27    0     4     4
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    44  531     0   12  363   424  230     4    27    0     4     4
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.93 0.98  1.00 0.93 0.98  0.83 0.71 0.71  0.71 1.00 0.91  0.91
Lanes:       1.00 1.00  0.00 1.00 1.00  1.00 0.88 0.02  0.10 0.00 0.50  0.50
Final Sat.:  1769 1862     0 1769 1862  1583 1188   21   139    0  869   869
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.29  0.00 0.01 0.19  0.27 0.19 0.19  0.19 0.00 0.00  0.00
Crit Moves:       ****       ****                    ****
Green/Cycle: 0.05 0.52  0.00 0.01 0.49  0.49 0.35 0.35  0.35 0.00 0.35  0.35
Volume/Cap:  0.55 0.55  0.00 0.55 0.40  0.55 0.55 0.55  0.55 0.00 0.01  0.01
Delay/Veh:   45.2 13.5   0.0 65.3 13.3  15.2 22.0 22.0  22.0  0.0 16.8  16.8
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  45.2 13.5   0.0 65.3 13.3  15.2 22.0 22.0  22.0  0.0 16.8  16.8
DesignQueue:    2   12     0    1    9    10    7     0     1    0     0     0
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*****************************************************************************
Intersection #16 Hegan lane / ARTC Access
*****************************************************************************
Average Delay (sec/veh):        9.7           Worst Case Level Of Service:    A
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        3    0     6     0    0     0     0  117    27    66   88     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     3    0     6     0    0     0     0  117    27    66   88     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      3    0     7     0    0     0     0  130    30    73   98     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      3    0     7     0    0     0     0  130    30    73   98     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  389 xxxx    145  xxxx xxxx xxxxx  xxxx xxxx xxxxx   160 xxxx xxxxx
Potent Cap.:  618 xxxx    908  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1419 xxxx xxxxx
Move Cap.:    593 xxxx    908  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1419 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  771 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
Shared LOS:      *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:          9.7            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:           A                *                *                *
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #16 Hegan lane / ARTC Access
*******************************************************************************
Average Delay (sec/veh):        9.6  2.4   Worst Case Level Of Service:        A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:       3    0     6     0    0     0     0  117    27    66   88     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3    0     6     0    0     0     0  117    27    66   88     0
Added Vol:      0    0     5     0    0     0     0    0     0    21    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    3    0    11     0    0     0     0  117    27    87   88     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     3    0    12     0    0     0     0  130    30    97   98     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     3    0    12     0    0     0     0  130    30    97   98     0
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  436 xxxx   145  xxxx xxxx xxxxx  xxxx xxxx xxxxx   160 xxxx xxxxx
Potent Cap.:  581 xxxx   908  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1419 xxxx xxxxx
Move Cap.:    549 xxxx   908  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1419 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  796 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:         9.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:          A                *                *                *
```

KDA

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                                Scenario Report
Scenario:             ex plus Master Plan PM

Command:              Default Command
Volume:               ex pm
Geometry:             existing
Impact Fee:           Default Impact Fee
Trip Generation:      pm peak
Trip Distribution:    current
Paths:                Default Paths
Routes:               Default Routes
Configuration:        Default Configuration
```

```
---------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------------
                          Trip Generation Report

                           Forecast for pm peak

Zone                                          Rate   Rate   Trips Trips  Total % Of
 #   Subzone        Amount  Units              In     Out    In    Out   Trips Total
---- ------------ ------- -------------- ------ ------  ----- -----  ----- -----

  1                1940.00 students          0.06   0.15    116   291    407  48.5
            Zone 1 Subtotal ............................    116   291    407  48.5

  2                1935.00 students          0.06   0.15    116   290    406  48.3
            Zone 2 Subtotal ............................    116   290    406  48.3

  3                 125.00 students          0.06   0.15      8    19     27   3.2
            Zone 3 Subtotal ............................      8    19     27   3.2

---------------------------------------------------------------------------------
TOTAL ...................................................  240   600    840 100.0
```

```
------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                         Trip Distribution Report

                         Percent Of Trips current

                                  To Gates
             1     2     3     4     5     6     7     8     9    10
Zone       ----- ----- ----- ----- ----- ----- ----- ----- ----- -----

  1         15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
  2         15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
  3         15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
```

```
---------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------
                           Turning Movement Report
                                   pm peak

Volume     Northbound        Southbound        Eastbound         Westbound      Total
Type    Left Thru Right   Left Thru Right   Left Thru Right   Left Thru Right  Volume

#1 Nord Ave / West Sacramento Ave
Base      16  595   239    309  672     8     17   19     8    283   27   363    2556
Added      0   30     1     23   13     0      0    0     0      2    0    60     129
Total     16  625   240    332  685     8     17   19     8    285   27   423    2685

#2 Sacramento Ave / Warner Ave
Base     138  274    74    222  185    74     87  210   130     85  379    53    1911
Added     59   59   152      5   23     0      0    0    23     61    3    12     397
Total    197  333   226    227  208    74     87  210   153    146  382    65    2308

#3 Esplanade / 1st Avenue
Base       0 1034    67      0  876    70     72  373    38     90  406   118    3144
Added      0   46    55      0   30     0     29   35     0     31    5     0     231
Total      0 1080   122      0  906    70    101  408    38    121  411   118    3375

#4 Esplanade / Sacramento Ave
Base     313 1197     0      0  869   233      0    0   217      0    0     0    2829
Added     54  101     0      0   40    20      0    0    85      0    0     0     300
Total    367 1298     0      0  909   253      0    0   302      0    0     0    3129

#5 Warner Ave / Legion Avenue
Base       0  382    87    102  313     0      0    0     0     52    0    79    1015
Added      0   57     4     16   60     0      0    0     0      1    0     6     144
Total      0  439    91    118  373     0      0    0     0     53    0    85    1159

#6 Walnut Avenue / 2nd Street
Base      53  586   108    111  625    65     54   91    68    104   62   170    2097
Added      0   14     2      8    7     0      0    0     0      5    0    17      53
Total     53  600   110    119  632    65     54   91    68    109   62   187    2150

#7 2nd Avenue / Cherry St
Base       4   15    16    136   62    42     27  294     4     24  328    79    1031
Added      0    0     0      0    0     0      0   10     0      0   23     0      33
Total      4   15    16    136   62    42     27  304     4     24  351    79    1064

#8 2nd Street / Ivy Street / Warner Ave
Base      58  183    56    146  206    43     19  392    40     33  330   144    1650
Added      0   22     3     41   19     2      1    9     0      7   21    38     163
Total     58  205    59    187  225    45     20  401    40     40  351   182    1813

#9 2nd Street / Hazel St
Base      15    0    37      0    1     3      2  570    21     21  482     1    1153
Added     27    0    51      0    0     0      0   42    11     20   38     0     189
PassBy    50    0     0      0    0     0      0  -49    49      0  -50     0       0
Total     92    0    88      0    1     3      2  563    81     41  470     1    1342
```

```
-------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
Volume    Northbound      Southbound      Eastbound       Westbound     Total
Type    Left Thru Right Left Thru Right Left Thru Right Left Thru Right Volume


#10 2nd Street / Chestnut St
Base      50    0    62    0    0    0    0  558   49   32  449    0   1200
Added      0    0     0    0    0    0    0   93    0    0   58    0    151
PassBy   -50    0   -62    0    0    0    0    0  -49  -32    0    0   -193
Total      0    0     0    0    0    0    0  651    0    0  507    0   1158

#11 2nd Street / Normal Ave
Base      18    1    30   18    3   13   12  562   48   50  449   14   1218
Added     25    0    89    0    0    0    0   83   10   35   33    0    275
PassBy     0    0    62    0    0    0    0  -62    0   32  -32    0      0
Total     43    1   181   18    3   13   12  583   58  117  450   14   1493

#12 2nd Street / Broadway
Base       0    0     0   77  745  113    0  539  126  100  367    0   2067
Added      0    0     0    7   85   26    0   82   90    2   43    0    335
Total      0    0     0   84  830  139    0  621  216  102  410    0   2402

#13 2nd Street / Main Street
Base     135  991   176    0    0    0  148  469    0    0  332   37   2288
Added     36   68     5    0    0    0   65   25    0    0    9    3    211
Total    171 1059   181    0    0    0  213  494    0    0  341   40   2499

#14 Park Avenue / Midway
Base       0  267   537  411  232    1    2    0    0  468    2  328   2248
Added      0   28     1   41   36    0    0    0    0    1    0   16    123
Total      0  295   538  452  268    1    2    0    0  469    2  344   2371

#15 Midway / Hegan Lane
Base      16  374     0    5  408  286  416    0   32    0    0   10   1547
Added      0   12     0    0   29    7   18    0    1    0    0    0     67
Total     16  386     0    5  437  293  434    0   33    0    0   10   1614

#16 Hegan lane / ARTC Access
Base       8    0    24    0    0    0    0  136    1    7  169    0    345
Added      0    0    19    0    0    0    0    0    0    8    0    0     27
Total      8    0    43    0    0    0    0  136    1   15  169    0    372
```

```
------------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                         Impact Analysis Report
                            Level Of Service

Intersection                                  Base            Future      Change
                                            Del/   V/       Del/   V/       in
                                         LOS Veh    C    LOS Veh    C
#  1 Nord Ave / West Sacramento Ave      D  47.2 1.008   E  62.0 1.085  +14.774 D/V

#  2 Sacramento Ave / Warner Ave         D  36.4 0.708   D  49.1 0.866  +12.686 D/V

#  3 Esplanade / 1st Avenue              C  22.6 0.725   C  24.2 0.763  + 1.672 D/V

#  4 Esplanade / Sacramento Ave          C  20.4 0.000   D  32.4 0.000  + 0.000 V/C

#  5 Warner Ave / Legion Avenue          A   8.3 0.398   A   8.1 0.441   -0.195 D/V

#  6 Walnut Avenue / 2nd Street          B  18.1 0.476   B  18.4 0.495  + 0.282 D/V

#  7 2nd Avenue / Cherry St              E  48.4 0.000   F  55.6 0.000  + 0.000 V/C

#  8 2nd Street / Ivy Street / Warn      B  13.7 0.361   B  14.3 0.443  + 0.623 D/V

#  9 2nd Street / Hazel St               C  15.7 0.000   E  43.1 0.000  + 0.000 V/C

# 10 2nd Street / Chestnut St            C  19.4 0.000   A   0.0 0.000  + 0.000 V/C

# 11 2nd Street / Normal Ave             C  21.5 0.000   E  38.3 0.000  + 0.000 V/C

# 12 2nd Street / Broadway               B  14.7 0.437   B  15.3 0.526  + 0.657 D/V

# 13 2nd Street / Main Street            B  15.6 0.574   B  16.9 0.658  + 1.354 D/V

# 14 Park Avenue / Midway                C  29.9 0.767   C  32.5 0.822  + 2.686 D/V

# 15 Midway / Hegan Lane                 C  22.2 0.666   C  22.9 0.702  + 0.689 D/V

# 16 Hegan lane / ARTC Access            A   9.5 0.000   A   9.5 0.000  + 0.000 V/C
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                    Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        1.008
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):       47.2
Optimal Cycle:       180              Level Of Service:                  D
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0     0     0    0     0     0     0     0     0    0     0     0
Lanes:         1  0  0  1  0   1  0  0  1  0     0  0  1! 0  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        16  595   239   309  672     8    17   19     8   283   27   363
Growth Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     16  595   239   309  672     8    17   19     8   283   27   363
User Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:       0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:      17  626   252   325  707     8    18   20     8   298   28   382
Reduct Vol:       0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     17  626   252   325  707     8    18   20     8   298   28   382
PCE Adj:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:       1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      17  626   252   325  707     8    18   20     8   298   28   382
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:      1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:    0.93 0.94  0.94  0.93 0.98  0.98  0.59 0.59  0.59  0.74 0.84  0.84
Lanes:         1.00 0.71  0.29  1.00 0.99  0.01  0.39 0.44  0.17  1.00 0.07  0.93
Final Sat.:    1769 1270   511  1769 1837    21   441  490   196  1402  109  1492
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:       0.01 0.49  0.49  0.18 0.38  0.38  0.04 0.04  0.04  0.21 0.26  0.26
Crit Moves:         ****        ****                                     ****
Green/Cycle:   0.02 0.49  0.49  0.18 0.65  0.65  0.25 0.25  0.25  0.25 0.25  0.25
Volume/Cap:    0.59 1.01  1.01  1.01 0.59  0.59  0.16 0.16  0.16  0.84 1.01  1.01
Delay/Veh:     66.9 52.9  52.9  84.9  8.5   8.5  23.5 23.5  23.5  44.0 76.5  76.5
User DelAdj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:    66.9 52.9  52.9  84.9  8.5   8.5  23.5 23.5  23.5  44.0 76.5  76.5
DesignQueue:      1   16     7    12   12     0     1    1     0    10    1    13
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
*******************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):         1.085
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        62.0
Optimal Cycle:       180               Level Of Service:                  E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  0  1  0    0  0  1! 0  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      16   595   239   309   672     8    17    19     8   283    27   363
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   16   595   239   309   672     8    17    19     8   283    27   363
Added Vol:      0    30     1    23    13     0     0     0     0     2     0    60
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   16   625   240   332   685     8    17    19     8   285    27   423
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    17   658   253   349   721     8    18    20     8   300    28   445
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   17   658   253   349   721     8    18    20     8   300    28   445
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    17   658   253   349   721     8    18    20     8   300    28   445
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.94  0.94  0.93  0.98  0.98  0.54  0.54  0.54  0.74  0.84  0.84
Lanes:       1.00  0.72  0.28  1.00  0.99  0.01  0.39  0.44  0.17  1.00  0.06  0.94
Final Sat.:  1769  1288   495  1769  1838    20   401   445   178  1397    95  1505
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01  0.51  0.51  0.20  0.39  0.39  0.04  0.04  0.04  0.21  0.30  0.30
Crit Moves:        ****        ****                                      ****
Green/Cycle: 0.02  0.47  0.47  0.18  0.64  0.64  0.27  0.27  0.27  0.27  0.27  0.27
Volume/Cap:  0.62  1.09  1.09  1.09  0.62  0.62  0.16  0.16  0.16  0.79  1.09  1.09
Delay/Veh:   74.4  77.9  77.9 107.6   9.7   9.7  22.4  22.4  22.4  37.5  97.1  97.1
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  74.4  77.9  77.9 107.6   9.7   9.7  22.4  22.4  22.4  37.5  97.1  97.1
DesignQueue:    1    18     7    13    13     0     1     1     0    10     1    15
*******************************************************************************
```

```
------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
******************************************************************************
Cycle (sec):         100                Critical Vol./Cap. (X):        0.708
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        36.4
Optimal Cycle:        61                Level Of Service:                  D
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      138   274    74   222   185    74    87   210   130    85   379    53
Growth Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   138   274    74   222   185    74    87   210   130    85   379    53
User Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    145   288    78   234   195    78    92   221   137    89   399    56
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   145   288    78   234   195    78    92   221   137    89   399    56
PCE Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    145   288    78   234   195    78    92   221   137    89   399    56
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:   0.95  0.97  0.97  0.95  0.96  0.96  0.95  0.94  0.94  0.95  0.98  0.98
Lanes:        1.00  0.79  0.21  1.00  0.71  0.29  1.00  0.62  0.38  1.00  0.88  0.12
Final Sat.:   1805  1447   392  1805  1299   520  1805  1106   686  1805  1636   230
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.08  0.20  0.20  0.13  0.15  0.15  0.05  0.20  0.20  0.05  0.24  0.24
Crit Moves:         ****        ****              ****                    ****
Green/Cycle:  0.16  0.28  0.28  0.18  0.30  0.30  0.07  0.33  0.33  0.08  0.34  0.34
Volume/Cap:   0.50  0.71  0.71  0.71  0.50  0.50  0.71  0.60  0.60  0.60  0.71  0.71
Delay/Veh:    39.5  36.8  36.8  45.3  29.4  29.4  61.9  29.4  29.4  50.9  32.1  32.1
User DelAdj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   39.5  36.8  36.8  45.3  29.4  29.4  61.9  29.4  29.4  50.9  32.1  32.1
DesignQueue:     7    12     3    11     8     3     5     9     5     5    16     2
******************************************************************************
```

```
--------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap. (X):        0.866
Loss Time (sec):       12 (Y+R =  4 sec) Average Delay (sec/veh):        49.1
Optimal Cycle:         96                 Level Of Service:                 D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected         Protected         Protected
Rights:          Include          Include           Include           Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  0  1  0    1  0  0  1  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      138   274    74   222   185    74    87   210   130    85   379    53
Growth Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   138   274    74   222   185    74    87   210   130    85   379    53
Added Vol:      59    59   152     5    23     0     0     0    23    61     3    12
PasserByVol:     0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   197   333   226   227   208    74    87   210   153   146   382    65
User Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    207   351   238   239   219    78    92   221   161   154   402    68
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   207   351   238   239   219    78    92   221   161   154   402    68
PCE Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    207   351   238   239   219    78    92   221   161   154   402    68
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:     1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:   0.95  0.94  0.94  0.95  0.96  0.96  0.95  0.94  0.94  0.95  0.98  0.98
Lanes:        1.00  0.60  0.40  1.00  0.74  0.26  1.00  0.58  0.42  1.00  0.86  0.14
Final Sat.:   1805  1063   721  1805  1346   480  1805  1030   750  1805  1589   269
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:      0.11  0.33  0.33  0.13  0.16  0.16  0.05  0.21  0.21  0.09  0.25  0.25
Crit Moves:         ****        ****                    ****        ****
Green/Cycle:  0.22  0.38  0.38  0.15  0.31  0.31  0.06  0.25  0.25  0.10  0.29  0.29
Volume/Cap:   0.52  0.87  0.87  0.87  0.52  0.52  0.88  0.87  0.87  0.87  0.88  0.88
Delay/Veh:    35.5  40.0  40.0  65.2  29.0  29.0  98.1  52.4  52.4  77.7  49.2  49.2
User DelAdj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   35.5  40.0  40.0  65.2  29.0  29.0  98.1  52.4  52.4  77.7  49.2  49.2
DesignQueue:     9    13     9    12     9     3     5    10     7     8    17     3
********************************************************************************
```

```
------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #3 Esplanade / 1st Avenue
******************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):        0.725
Loss Time (sec):      9 (Y+R =  4 sec) Average Delay (sec/veh):       22.6
Optimal Cycle:       52               Level Of Service:                 C
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  2  0  1   0  0  1  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1034    67     0  876    70    72  373    38    90  406   118
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1034    67     0  876    70    72  373    38    90  406   118
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0 1088    71     0  922    74    76  393    40    95  427   124
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0 1088    71     0  922    74    76  393    40    95  427   124
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0 1088    71     0  922    74    76  393    40    95  427   124
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.94  0.94  0.95 0.99  0.99  0.95 0.97  0.97
Lanes:       0.00 2.00  1.00  0.00 1.85  0.15  1.00 0.91  0.09  1.00 0.77  0.23
Final Sat.:     0 3610  1615     0 3305   265  1805 1700   173  1805 1422   413
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.30  0.04  0.00 0.28  0.28  0.04 0.23  0.23  0.05 0.30  0.30
Crit Moves:       ****        ****             ****                   ****
Green/Cycle: 0.00 0.42  0.42  0.00 0.42  0.42  0.06 0.38  0.38  0.09 0.41  0.41
Volume/Cap:  0.00 0.73  0.11  0.00 0.67  0.67  0.73 0.60  0.60  0.60 0.73  0.73
Delay/Veh:    0.0 21.4  14.4   0.0 20.2  20.2  59.2 21.1  21.1  41.5 23.1  23.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 21.4  14.4   0.0 20.2  20.2  59.2 21.1  21.1  41.5 23.1  23.1
DesignQueue:    0   31     2     0   26     2     3   11     1     4   12     3
******************************************************************************
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                      Level Of Service Computation Report
              2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Esplanade / 1st Avenue
*******************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):         0.763
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):         24.2
Optimal Cycle:        58                Level Of Service:                   C
*******************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       0  0  2  0  1   0  0  1  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1034    67     0  876    70    72  373    38    90  406   118
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1034    67     0  876    70    72  373    38    90  406   118
Added Vol:      0   46    55     0   30     0    29   35     0    31    5     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0 1080   122     0  906    70   101  408    38   121  411   118
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0 1137   128     0  954    74   106  429    40   127  433   124
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0 1137   128     0  954    74   106  429    40   127  433   124
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0 1137   128     0  954    74   106  429    40   127  433   124
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.94  0.94  0.95 0.99  0.99  0.95 0.97  0.97
Lanes:       0.00 2.00  1.00  0.00 1.86  0.14  1.00 0.91  0.09  1.00 0.78  0.22
Final Sat.:     0 3610  1615     0 3313   257  1805 1715   160  1805 1428   409
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.31  0.08  0.00 0.29  0.29  0.06 0.25  0.25  0.07 0.30  0.30
Crit Moves:       ****        ****             ****                  ****
Green/Cycle: 0.00 0.41  0.41  0.00 0.41  0.41  0.08 0.37  0.37  0.10 0.40  0.40
Volume/Cap:  0.00 0.76  0.19  0.00 0.70  0.70  0.76 0.68  0.68  0.68 0.76  0.76
Delay/Veh:    0.0 22.5  15.1   0.0 20.8  20.8  57.9 23.8  23.8  43.9 25.6  25.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 22.5  15.1   0.0 20.8  20.8  57.9 23.8  23.8  43.9 25.6  25.6
DesignQueue:    0   32     3     0   27     2     4   13     1     5   13     4
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                  EXISTING plus MASTER PLAN (4,000)
                     5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*****************************************************************************
Intersection #4 Esplanade / Sacramento Ave
*****************************************************************************
Average Delay (sec/veh):       20.4 3.6    Worst Case Level Of Service:      C
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0   0  0  1  1  0   0  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      313 1197     0     0  869   233     0    0   217     0    0     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   313 1197     0     0  869   233     0    0   217     0    0     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    329 1260     0     0  915   245     0    0   228     0    0     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    329 1260     0     0  915   245     0    0   228     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  1160 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   580  xxxx xxxx xxxxx
Potent Cap.:   598 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   458  xxxx xxxx xxxxx
Move Cap.:     598 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   458  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:  18.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  20.4 xxxxx xxxx xxxxx
LOS by Move:     C    *     *     *    *     *     *    *     C     *    *     *
Movement:       LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:      *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      xxxxxx           xxxxxx             20.4            xxxxxx
ApproachLOS:         *                *                 C                *
```

```
-------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Esplanade / Sacramento Ave
*******************************************************************************
Average Delay (sec/veh):      32.4  6.9   Worst Case Level Of Service:        D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled       Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0   0  0  1  1  0   0  0  0  0  1   0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:     313 1197     0     0  869   233     0    0   217     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  313 1197     0     0  869   233     0    0   217     0    0     0
Added Vol:     54  101     0     0   40    20     0    0    85     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  367 1298     0     0  909   253     0    0   302     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:   386 1366     0     0  957   266     0    0   318     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:   386 1366     0     0  957   266     0    0   318     0    0     0
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1223 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   612  xxxx xxxx xxxxx
Potent Cap.:  566 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   436  xxxx xxxx xxxxx
Move Cap.:    566 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   436  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del: 24.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  32.4 xxxxx xxxx xxxxx
LOS by Move:    C    *     *     *    *     *     *    *     D     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx             32.4           xxxxxx
ApproachLOS:        *                *                 D               *
```

```
-------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 Warner Ave / Legion Avenue
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        0.398
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        8.3
Optimal Cycle:        26              Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Permitted        Permitted         Permitted         Permitted
Rights:          Include          Include           Include           Include
Min. Green:    0   20     0    0   20     0     0    0     0     0   20     0
Lanes:        0  0  0  1  0   1  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        0  382    87   102  313     0     0    0     0    52    0    79
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0  382    87   102  313     0     0    0     0    52    0    79
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:      0  402    92   107  329     0     0    0     0    55    0    83
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0  402    92   107  329     0     0    0     0    55    0    83
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      0  402    92   107  329     0     0    0     0    55    0    83
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   1.00 0.98  0.96  0.54 1.00  1.00  1.00 1.00  1.00  0.79 1.00  0.68
Lanes:        0.00 0.81  0.19  1.00 1.00  0.00  0.00 0.00  0.00  0.37 0.00  0.63
Final Sat.:      0 1503   344  1025 1900     0     0    0     0   546    0   824
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.27  0.27  0.10 0.17  0.00  0.00 0.00  0.00  0.10 0.00  0.10
Crit Moves:        ****                                           ****
Green/Cycle:  0.00 0.67  0.67  0.67 0.67  0.00  0.00 0.00  0.00  0.25 0.00  0.25
Volume/Cap:   0.00 0.40  0.40  0.16 0.26  0.00  0.00 0.00  0.00  0.40 0.00  0.40
Delay/Veh:     0.0  6.1   6.1   4.9  5.3   0.0   0.0  0.0   0.0  25.6  0.0  25.6
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:    0.0  6.1   6.1   4.9  5.3   0.0   0.0  0.0   0.0  25.6  0.0  25.6
DesignQueue:     0    6     1     2    5     0     0    0     0     2    0     3
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #5 Warner Ave / Legion Avenue
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):         0.441
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):          8.1
Optimal Cycle:        26                Level Of Service:                   A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    20     0    0    20     0    0     0     0    0    20     0
Lanes:        0  0  0  1  0   1  0  1  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       0   382    87   102   313     0     0     0     0    52     0    79
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   382    87   102   313     0     0     0     0    52     0    79
Added Vol:      0    57     4    16    60     0     0     0     0     1     0     6
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0   439    91   118   373     0     0     0     0    53     0    85
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:     0   462    96   124   393     0     0     0     0    56     0    89
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   462    96   124   393     0     0     0     0    56     0    89
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0   462    96   124   393     0     0     0     0    56     0    89
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.98  0.96  0.51  1.00  1.00  1.00  1.00  1.00  0.79  1.00  0.68
Lanes:       0.00  0.83  0.17  1.00  1.00  0.00  0.00  0.00  0.00  0.35  0.00  0.65
Final Sat.:     0  1533   319   974  1900     0     0     0     0   526     0   837
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.30  0.30  0.13  0.21  0.00  0.00  0.00  0.00  0.11  0.00  0.11
Crit Moves:        ****                                            ****
Green/Cycle: 0.00  0.68  0.68  0.68  0.68  0.00  0.00  0.00  0.00  0.24  0.00  0.24
Volume/Cap:  0.00  0.44  0.44  0.19  0.30  0.00  0.00  0.00  0.00  0.44  0.00  0.44
Delay/Veh:    0.0   6.0   6.0   4.7   5.2   0.0   0.0   0.0   0.0  26.7   0.0  26.7
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   6.0   6.0   4.7   5.2   0.0   0.0   0.0   0.0  26.7   0.0  26.7
DesignQueue:    0     7     1     2     6     0     0     0     0     2     0     3
********************************************************************************
```

```
-----------------------------------------------------------------------------
                  EXISTING plus MASTER PLAN (4,000)
                     5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------

                    Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*****************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
*****************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):         0.476
Loss Time (sec):      9 (Y+R =  4 sec) Average Delay (sec/veh):        18.1
Optimal Cycle:       32               Level Of Service:                  B
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0   1  0  1  1  0   0  0  1! 0  0   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      53   586   108   111   625    65    54    91    68   104    62   170
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   53   586   108   111   625    65    54    91    68   104    62   170
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    56   617   114   117   658    68    57    96    72   109    65   179
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   56   617   114   117   658    68    57    96    72   109    65   179
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    56   617   114   117   658    68    57    96    72   109    65   179
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.91  0.91  0.93  0.92  0.92  0.83  0.84  0.82  0.63  0.64  0.80
Lanes:       1.00  1.69  0.31  1.00  1.81  0.19  0.25  0.43  0.32  0.63  0.37  1.00
Final Sat.:  1769  2917   539  1769  3162   327   400   674   505   752   449  1511
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.21  0.21  0.07  0.21  0.21  0.14  0.14  0.14  0.14  0.14  0.12
Crit Moves:        ****        ****                                      ****
Green/Cycle: 0.08  0.44  0.44  0.14  0.51  0.51  0.30  0.30  0.30  0.30  0.30  0.30
Volume/Cap:  0.41  0.48  0.48  0.48  0.41  0.41  0.47  0.47  0.47  0.48  0.48  0.39
Delay/Veh:   37.2  15.9  15.9  33.2  12.5  12.5  23.3  23.3  23.3  23.6  23.6  22.5
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  37.2  15.9  15.9  33.2  12.5  12.5  23.3  23.3  23.3  23.6  23.6  22.5
DesignQueue:    2    16     3     5    15     2     2     3     2     3     2     6
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.495
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        18.4
Optimal Cycle:        33                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0   1  0  1  1  0   0  0  1! 0  0   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      53  586   108   111  625    65    54   91    68   104   62   170
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   53  586   108   111  625    65    54   91    68   104   62   170
Added Vol:      0   14     2     8    7     0     0    0     0     5    0    17
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   53  600   110   119  632    65    54   91    68   109   62   187
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    56  632   116   125  665    68    57   96    72   115   65   197
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   56  632   116   125  665    68    57   96    72   115   65   197
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    56  632   116   125  665    68    57   96    72   115   65   197
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.91  0.91  0.93 0.92  0.92  0.83 0.83  0.82  0.62 0.63  0.80
Lanes:       1.00 1.69  0.31  1.00 1.81  0.19  0.25 0.43  0.32  0.64 0.36  1.00
Final Sat.:  1769 2920   536  1769 3165   324   400  673   505   756  428  1511
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.22  0.22  0.07 0.21  0.21  0.14 0.14  0.14  0.15 0.15  0.13
Crit Moves:       ****        ****                                   ****
Green/Cycle: 0.08 0.44  0.44  0.14 0.50  0.50  0.31 0.31  0.31  0.31 0.31  0.31
Volume/Cap:  0.42 0.49  0.49  0.49 0.42  0.42  0.46 0.46  0.46  0.49 0.49  0.42
Delay/Veh:   37.4 16.4  16.4  33.1 12.6  12.6  23.1 23.1  23.1  23.7 23.7  22.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  37.4 16.4  16.4  33.1 12.6  12.6  23.1 23.1  23.1  23.7 23.7  22.7
DesignQueue:    2   17     3     5   15     2     2    3     2     4    2     6
********************************************************************************
```

```
ex plus Master Plan PM      Tue Dec 7, 2004 15:05:50                  Page 18-1
--------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 2nd Avenue / Cherry St   12.2
********************************************************************************
Average Delay (sec/veh):       48.4          Worst Case Level Of Service:      E
********************************************************************************
Approach:       North Bound       South Bound        East Bound        West Bound
Movement:      L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign        Uncontrolled      Uncontrolled
Rights:          Include           Include           Include           Include
Lanes:         0  0  1! 0  0     0  0  1! 0  0     0  1  0  1  0     0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:        4   15    16    136   62    42     27  294     4     24  328    79
Growth Adj:   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
Initial Bse:     4   15    16    136   62    42     27  294     4     24  328    79
User Adj:     1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00   1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95   0.95 0.95  0.95   0.95 0.95  0.95   0.95 0.95  0.95
PHF Volume:      4   16    17    143   65    44     28  309     4     25  345    83
Reduct Vol:      0    0     0      0    0     0      0    0     0      0    0     0
Final Vol.:      4   16    17    143   65    44     28  309     4     25  345    83
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5  6.5   6.9    7.5  6.5   6.9    4.1 xxxx xxxxx    4.1 xxxx xxxxx
FollowUpTim:   3.5  4.0   3.3    3.5  4.0   3.3    2.2 xxxx xxxxx    2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   664  887   197    697  848   254    448 xxxx xxxxx    334 xxxx xxxxx
Potent Cap.:   350  285   818    332  301   751   1123 xxxx xxxxx   1237 xxxx xxxxx
Move Cap.:     251  263   791    289  277   726   1104 xxxx xxxxx   1216 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx    8.3 xxxx xxxxx    8.0 xxxx xxxxx
LOS by Move:     *    *     *      *    *     *      A    *     *      A    *     *
Movement:      LT - LTR - RT     LT - LTR - RT     LT - LTR - RT     LT - LTR - RT
Shared Cap.: xxxx  375 xxxxx   xxxx  319 xxxxx   xxxx xxxx xxxxx   xxxx xxxx xxxxx
Shrd StpDel:xxxxx 15.6 xxxxx xxxxx 48.4 xxxxx    8.3 xxxx xxxxx    8.0 xxxx xxxxx
Shared LOS:      *    C     *      *    E     *      A    *     *      A    *     *
ApproachDel:        15.6              48.4            xxxxxx            xxxxxx
ApproachLOS:          C                 E                *                 *

Traffix 7.5.1015 (c) 2000 Dowling Assoc. Licensed to kdANDERSON TRANSP.
```

```
--------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #7 2nd Avenue / Cherry St
********************************************************************************
Average Delay (sec/veh):        55.6  13.5   Worst Case Level Of Service:      F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       4   15    16   136   62    42    27  294     4    24  328    79
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    4   15    16   136   62    42    27  294     4    24  328    79
Added Vol:      0    0     0     0    0     0     0   10     0     0   23     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    4   15    16   136   62    42    27  304     4    24  351    79
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     4   16    17   143   65    44    28  320     4    25  369    83
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     4   16    17   143   65    44    28  320     4    25  369    83
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  687  922   202   726  883   266   473 xxxx xxxxx   344 xxxx xxxxx
Potent Cap.:  337  272   811   316  287   738  1100 xxxx xxxxx  1226 xxxx xxxxx
Move Cap.:    239  250   784   274  264   714  1081 xxxx xxxxx  1206 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  361 xxxxx  xxxx  304 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 16.1 xxxxx xxxxx 55.6 xxxxx   8.4 xxxx xxxxx   8.0 xxxx xxxxx
Shared LOS:     *    C     *     *    F     *     A    *     *     A    *     *
ApproachDel:        16.1             55.6            xxxxxx           xxxxxx
ApproachLOS:          C                F                *                *
```

```
-----------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------

                      Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*****************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
*****************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        0.361
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):       13.7
Optimal Cycle:        22               Level Of Service:                 B
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       58  183    56  146  206    43   19  392    40   33  330   144
Growth Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    58  183    56  146  206    43   19  392    40   33  330   144
User Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95
PHF Volume:     61  193    59  154  217    45   20  413    42   35  347   152
Reduct Vol:      0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    61  193    59  154  217    45   20  413    42   35  347   152
PCE Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:     61  193    59  154  217    45   20  413    42   35  347   152
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:   0.50 0.95  0.94 0.51 0.95  0.95 0.85 0.85  0.85 0.81 0.81  0.79
Lanes:        1.00 0.76  0.24 1.00 0.83  0.17 0.08 1.74  0.18 0.13 1.29  0.58
Final Sat.:    947 1373   420  967 1501   311  136 2816   286  200 1982   868
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.06 0.14  0.14 0.16 0.14  0.14 0.15 0.15  0.15 0.18 0.18  0.18
Crit Moves:                   ****                                ****
Green/Cycle:  0.44 0.44  0.44 0.44 0.44  0.44 0.48 0.48  0.48 0.48 0.48  0.48
Volume/Cap:   0.15 0.32  0.32 0.36 0.33  0.33 0.30 0.30  0.30 0.36 0.36  0.36
Delay/Veh:    13.5 14.8  14.8 15.4 14.9  14.9 12.6 12.6  12.6 13.0 13.0  13.0
User DelAdj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   13.5 14.8  14.8 15.4 14.9  14.9 12.6 12.6  12.6 13.0 13.0  13.0
DesignQueue:     2    5     2    4    6     1    0   10     1    1    8     4
*****************************************************************************
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
*******************************************************************************
Cycle (sec):         80            Critical Vol./Cap. (X):        0.443
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):    14.3
Optimal Cycle:       24            Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      58   183    56   146   206    43    19   392    40    33   330   144
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   58   183    56   146   206    43    19   392    40    33   330   144
Added Vol:      0    22     3    41    19     2     1     9     0     7    21    38
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   58   205    59   187   225    45    20   401    40    40   351   182
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    61   216    62   197   237    47    21   422    42    42   369   192
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   61   216    62   197   237    47    21   422    42    42   369   192
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    61   216    62   197   237    47    21   422    42    42   369   192
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.49  0.95  0.94  0.50  0.96  0.95  0.85  0.85  0.84  0.79  0.80  0.78
Lanes:       1.00  0.78  0.22  1.00  0.83  0.17  0.09  1.74  0.17  0.14  1.22  0.64
Final Sat.:   931  1397   401   942  1514   300   139  2794   278   209  1838   956
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07  0.15  0.15  0.21  0.16  0.16  0.15  0.15  0.15  0.20  0.20  0.20
Crit Moves:                    ****                                    ****
Green/Cycle: 0.47  0.47  0.47  0.47  0.47  0.47  0.45  0.45  0.45  0.45  0.45  0.45
Volume/Cap:  0.14  0.33  0.33  0.44  0.33  0.33  0.33  0.33  0.33  0.44  0.44  0.44
Delay/Veh:   12.1  13.4  13.4  14.8  13.5  13.5  14.2  14.2  14.2  15.2  15.2  15.2
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  12.1  13.4  13.4  14.8  13.5  13.5  14.2  14.2  14.2  15.2  15.2  15.2
DesignQueue:    1     5     2     5     6     1     1    11     1     1     9     5
*******************************************************************************
```

```
------------------------------------------------------------------------------
                   EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                  Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #9 2nd Street / Hazel St
******************************************************************************
Average Delay (sec/veh):      15.7   29     Worst Case Level Of Service:     C
***********************************14*****************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:          Include          Include          Include           Include
Lanes:       0  0  1! 0  0   0  0  0  1  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      15    0    37    0    1     3     2  570    21    21  482     1
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   15    0    37    0    1     3     2  570    21    21  482     1
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95 0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    16    0    39    0    1     3     2  600    22    22  507     1
Reduct Vol:     0    0     0    0    0     0     0    0     0     0    0     0
Final Vol.:    16    0    39    0    1     3     2  600    22    22  507     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9 xxxxx  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  954 xxxx   351  xxxx 1218   294   528 xxxx xxxxx   642 xxxx xxxxx
Potent Cap.:  216 xxxx   651  xxxx  182   708  1049 xxxx xxxxx   952 xxxx xxxxx
Move Cap.:    203 xxxx   629  xxxx  171   685  1031 xxxx xxxxx   936 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.5 xxxx xxxxx   8.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  392 xxxxx  xxxx xxxx   392  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 15.7 xxxxx xxxxx xxxx  14.3   8.5 xxxx xxxxx   8.9 xxxx xxxxx
Shared LOS:     *    C     *     *    *     B     A    *     *     A    *     *
ApproachDel:       15.7             14.3            xxxxxx            xxxxxx
ApproachLOS:         C                B                *                 *
```

```
-----------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #9 2nd Street / Hazel St
*****************************************************************************
Average Delay (sec/veh):      43.1  6.1   Worst Case Level Of Service:     E
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  1  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      15     0    37     0     1     3     2   570    21    21   482     1
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   15     0    37     0     1     3     2   570    21    21   482     1
Added Vol:     27     0    51     0     0     0     0    42    11    20    38     0
PasserByVol:   50     0     0     0     0     0     0   -49    49     0   -50     0
Initial Fut:   92     0    88     0     1     3     2   563    81    41   470     1
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    97     0    93     0     1     3     2   593    85    43   495     1
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:    97     0    93     0     1     3     2   593    85    43   495     1
Critical Gap Module:
Critical Gp:  7.5  xxxx   6.9 xxxxx   6.5   6.9   4.1  xxxx xxxxx   4.1  xxxx xxxxx
FollowUpTim:  3.5  xxxx   3.3 xxxxx   4.0   3.3   2.2  xxxx xxxxx   2.2  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1014  xxxx   379  xxxx  1304   288   516  xxxx xxxxx   698  xxxx xxxxx
Potent Cap.:  196  xxxx   625  xxxx   162   715  1060  xxxx xxxxx   908  xxxx xxxxx
Move Cap.:    180  xxxx   604  xxxx   148   691  1043  xxxx xxxxx   893  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx   8.5  xxxx xxxxx   9.0  xxxx xxxxx
LOS by Move:    *     *     *     *     *     *     A     *     *     A     *     *
Movement:     LT  - LTR -  RT    LT  - LTR -  RT    LT  - LTR -  RT    LT  - LTR -  RT
Shared Cap.: xxxx   274 xxxxx  xxxx  xxxx   361  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Shrd StpDel:xxxxx  43.1 xxxxx xxxxx  xxxx  15.1   8.5  xxxx xxxxx   9.2  xxxx xxxxx
Shared LOS:     *     E     *     *     *     C     A     *     *     A     *     *
ApproachDel:        43.1              15.1             xxxxxx            xxxxxx
ApproachLOS:          E                 C                 *                 *
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #10 2nd Street / Chestnut St
*******************************************************************************
Average Delay (sec/veh):      19.4 2.1     Worst Case Level Of Service:      C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      50    0    62     0    0     0     0  558    49    32  449     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   50    0    62     0    0     0     0  558    49    32  449     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    53    0    65     0    0     0     0  587    52    34  473     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    53    0    65     0    0     0     0  587    52    34  473     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  957 xxxx   359  xxxx xxxx xxxxx  xxxx xxxx xxxxx   659 xxxx xxxxx
Potent Cap.:  259 xxxx   643  xxxx xxxx xxxxx  xxxx xxxx xxxxx   939 xxxx xxxxx
Move Cap.:    244 xxxx   622  xxxx xxxx xxxxx  xxxx xxxx xxxxx   923 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.9 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  367 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 19.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.0 xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     A    *     *
ApproachDel:      19.4            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
```

```
-------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #10 2nd Street / Chestnut St
*******************************************************************************
Average Delay (sec/veh):        0.0         Worst Case Level Of Service:      A
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  0   0  0  1  1  0   0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      50    0    62     0    0     0     0  558    49    32  449     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   50    0    62     0    0     0     0  558    49    32  449     0
Added Vol:      0    0     0     0    0     0     0   93     0     0   58     0
PasserByVol:  -50    0   -62     0    0     0     0    0   -49   -32    0     0
Initial Fut:    0    0     0     0    0     0     0  651     0     0  507     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0    0     0     0    0     0     0  685     0     0  534     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0    0     0     0    0     0     0  685     0     0  534     0
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:      xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
```

```
-----------------------------------------------------------------------------
                  EXISTING plus MASTER PLAN (4,000)
                     5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                  Level Of Service Computation Report
         2000 HCM Unsignalized Method (Base Volume Alternative)
*****************************************************************************
Intersection #11 2nd Street / Normal Ave
*****************************************************************************
Average Delay (sec/veh):     21.5  1,8   Worst Case Level Of Service:       C
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      18    1    30   18    3    13   12  562    48   50  449    14
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   18    1    30   18    3    13   12  562    48   50  449    14
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95
PHF Volume:    19    1    32   19    3    14   13  592    51   53  473    15
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:    19    1    32   19    3    14   13  592    51   53  473    15
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9  7.5  6.5   6.9  4.1 xxxx xxxxx  4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3  3.5  4.0   3.3  2.2 xxxx xxxxx  2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1025 1275   361  947 1293   284  507 xxxx xxxxx  662 xxxx xxxxx
Potent Cap.:  192  168   641  219  164   719 1068 xxxx xxxxx  936 xxxx xxxxx
Move Cap.:    169  151   620  189  148   695 1050 xxxx xxxxx  920 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  8.4 xxxx xxxxx  8.9 xxxx xxxxx
LOS by Move:    *    *     *    *    *     *    A    *     *    A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  304 xxxxx xxxx  253 xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Shrd StpDel:xxxxx 19.3 xxxxx xxxxx 21.5 xxxxx  8.5 xxxx xxxxx  9.1 xxxx xxxxx
Shared LOS:     *    C     *    *    C     *    A    *     *    A    *     *
ApproachDel:        19.3             21.5            xxxxxx           xxxxxx
ApproachLOS:          C                C                *                *
```

```
--------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #11 2nd Street / Normal Ave
********************************************************************************
Average Delay (sec/veh):        38.3  7.5    Worst Case Level Of Service:     E
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      18     1    30    18     3    13    12   562    48    50   449    14
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   18     1    30    18     3    13    12   562    48    50   449    14
Added Vol:     25     0    89     0     0     0     0    83    10    35    33     0
PasserByVol:    0     0    62     0     0     0     0   -62     0    32   -32     0
Initial Fut:   43     1   181    18     3    13    12   583    58   117   450    14
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    45     1   191    19     3    14    13   614    61   123   474    15
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:    45     1   191    19     3    14    13   614    61   123   474    15
Critical Gap Module:
Critical Gp:  7.5   6.5   6.9   7.5   6.5   6.9   4.1  xxxx xxxxx   4.1  xxxx xxxxx
FollowUpTim:  3.5   4.0   3.3   3.5   4.0   3.3   2.2  xxxx xxxxx   2.2  xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: 1194  1444   377  1100  1467   284   508  xxxx xxxxx   695  xxxx xxxxx
Potent Cap.:  144   133   626   169   129   719  1067  xxxx xxxxx   910  xxxx xxxxx
Move Cap.:    117   108   605    98   105   695  1049  xxxx xxxxx   895  xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx   8.4  xxxx xxxxx   9.0  xxxx xxxxx
LOS by Move:    *     *     *     *     *     *     A     *     *     A     *     *
Movement:     LT  - LTR  - RT    LT  - LTR  - RT    LT  - LTR  - RT    LT  - LTR  - RT
Shared Cap.:  xxxx   334 xxxxx  xxxx   147 xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Shrd StpDel:xxxxx  38.3 xxxxx xxxxx  37.2 xxxxx   8.5  xxxx xxxxx   9.7  xxxx xxxxx
Shared LOS:     *     E     *     *     E     *     A     *     *     A     *     *
ApproachDel:        38.3              37.2             xxxxxx            xxxxxx
ApproachLOS:          E                 E                 *                 *
```

```
--------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
              2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #12 2nd Street / Broadway
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.437
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        14.7
Optimal Cycle:        46                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0    20     0    0    20     0    0    20     0
Lanes:        0  0  0  0  0   0  1  1  1  0   0  0  1  1  0   0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       0     0     0    77   745   113     0   539   126   100   367     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0    77   745   113     0   539   126   100   367     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:     0     0     0    81   784   119     0   567   133   105   386     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0    81   784   119     0   567   133   105   386     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     0     0     0    81   784   119     0   567   133   105   386     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.86  0.86  0.86  1.00  0.90  0.90  0.64  0.64  1.00
Lanes:       0.00  0.00  0.00  0.25  2.39  0.36  0.00  1.62  0.38  0.43  1.57  0.00
Final Sat.:     0     0     0   404  3906   593     0  2781   652   519  1907     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.20  0.20  0.20  0.00  0.20  0.20  0.20  0.20  0.00
Crit Moves:                         ****              ****
Green/Cycle: 0.00  0.00  0.00  0.46  0.46  0.46  0.00  0.47  0.47  0.47  0.47  0.00
Volume/Cap:  0.00  0.00  0.00  0.44  0.44  0.44  0.00  0.44  0.44  0.43  0.43  0.00
Delay/Veh:    0.0   0.0   0.0  14.8  14.8  14.8   0.0  14.5  14.5  14.6  14.6   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  14.8  14.8  14.8   0.0  14.5  14.5  14.6  14.6   0.0
DesignQueue:    0     0     0     2    20     3     0    14     3     3     9     0
********************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #12 2nd Street / Broadway
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.526
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        15.3
Optimal Cycle:        46                Level Of Service:                  B
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0    20     0    0    20     0    0    20     0
Lanes:         0  0  0  0  0    0  1  1  1  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:      0     0     0    77   745   113    0   539   126   100   367     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   0     0     0    77   745   113    0   539   126   100   367     0
Added Vol:     0     0     0     7    85    26    0    82    90     2    43     0
PasserByVol:   0     0     0     0     0     0    0     0     0     0     0     0
Initial Fut:   0     0     0    84   830   139    0   621   216   102   410     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    0     0     0    88   874   146    0   654   227   107   432     0
Reduct Vol:    0     0     0     0     0     0    0     0     0     0     0     0
Reduced Vol:   0     0     0    88   874   146    0   654   227   107   432     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0     0     0    88   874   146    0   654   227   107   432     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.86  0.86  0.86  1.00  0.89  0.88  0.60  0.60  1.00
Lanes:       0.00  0.00  0.00  0.24  2.37  0.39  0.00  1.48  0.52  0.40  1.60  0.00
Final Sat.:    0     0     0   388  3851   643    0  2517   873   455  1837     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.23  0.23  0.23  0.00  0.26  0.26  0.24  0.24  0.00
Crit Moves:                         ****              ****
Green/Cycle: 0.00  0.00  0.00  0.43  0.43  0.43  0.00  0.49  0.49  0.49  0.49  0.00
Volume/Cap:  0.00  0.00  0.00  0.53  0.53  0.53  0.00  0.53  0.53  0.48  0.48  0.00
Delay/Veh:    0.0   0.0   0.0  17.0  17.0  17.0   0.0  14.2  14.2  13.7  13.7   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  17.0  17.0  17.0   0.0  14.2  14.2  13.7  13.7   0.0
DesignQueue:   0     0     0     2    23     4    0    16     5     3    10     0
********************************************************************************
```

```
-------------------------------------------------------------------------------
                       EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #13 2nd Street / Main Street
*******************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):        0.574
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        15.6
Optimal Cycle:        46                 Level Of Service:                 B
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0   20    0    0    0    0    0   20    0    0   20    0
Lanes:        0  1  1  1  0   0  0  0  0  0   0  1  1  0  0   0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      135  991   176     0    0    0   148  469     0     0  332    37
Growth Adj:   1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   135  991   176     0    0    0   148  469     0     0  332    37
User Adj:     1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95 0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:    142 1043   185     0    0    0   156  494     0     0  349    39
Reduct Vol:      0    0     0     0    0    0     0    0     0     0    0     0
Reduced Vol:   142 1043   185     0    0    0   156  494     0     0  349    39
PCE Adj:      1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    142 1043   [illegible]85     0    0    0   156  494     0     0  349    39
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900 1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.86 0.86  0.86  1.00 1.00 1.00  0.68 0.68  1.00  1.00 0.92  0.91
Lanes:        0.31 2.28  0.41  0.00 0.00 0.00  0.48 1.52  0.00  0.00 1.80  0.20
Final Sat.:    506 3717   659     0    0    0   624 1975     0     0 3133   350
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.28 0.28  0.28  0.00 0.00 0.00  0.25 0.25  0.00  0.00 0.11  0.11
Crit Moves:        ****                             ****
Green/Cycle:  0.49 0.49  0.49  0.00 0.00 0.00  0.44 0.44  0.00  0.00 0.44  0.44
Volume/Cap:   0.57 0.57  0.57  0.00 0.00 0.00  0.57 0.57  0.00  0.00 0.26  0.26
Delay/Veh:    14.9 14.9  14.9   0.0  0.0  0.0  17.7 17.7   0.0   0.0 14.4  14.4
User DelAdj:  1.00 1.00  1.00  1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   14.9 14.9  14.9   0.0  0.0  0.0  17.7 17.7   0.0   0.0 14.4  14.4
DesignQueue:     3   25     4     0    0    0     4   13     0     0    9     1
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #13 2nd Street / Main Street
*****************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):        0.658
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        16.9
Optimal Cycle:        46               Level Of Service:                 B
*****************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0   20     0    0    0     0    0   20     0    0   20     0
Lanes:        0  1  1  1  0   0  0  0  0  0   0  1  1  0  0   0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:     135  991   176    0    0     0  148  469     0    0  332    37
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  135  991   176    0    0     0  148  469     0    0  332    37
Added Vol:     36   68     5    0    0     0   65   25     0    0    9     3
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  171 1059   181    0    0     0  213  494     0    0  341    40
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95
PHF Volume:   180 1115   191    0    0     0  224  520     0    0  359    42
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  180 1115   191    0    0     0  224  520     0    0  359    42
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   180 1115   191    0    0     0  224  520     0    0  359    42
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.86 0.86  0.86 1.00 1.00  1.00 0.64 0.64  1.00 1.00 0.92  0.91
Lanes:       0.36 2.25  0.39 0.00 0.00  0.00 0.60 1.40  0.00 0.00 1.79  0.21
Final Sat.:   593 3671   629    0    0     0  734 1704     0    0 3115   364
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.30 0.30  0.30 0.00 0.00  0.00 0.31 0.31  0.00 0.00 0.12  0.12
Crit Moves:       ****                           ****
Green/Cycle: 0.46 0.46  0.46 0.00 0.00  0.00 0.46 0.46  0.00 0.00 0.46  0.46
Volume/Cap:  0.66 0.66  0.66 0.00 0.00  0.00 0.66 0.66  0.00 0.00 0.25  0.25
Delay/Veh:   17.4 17.4  17.4  0.0  0.0   0.0 18.0 18.0   0.0  0.0 13.1  13.1
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  17.4 17.4  17.4  0.0  0.0   0.0 18.0 18.0   0.0  0.0 13.1  13.1
DesignQueue:    5   29     5    0    0     0    6   13     0    0    9     1
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #14 Park Avenue / Midway
********************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):         0.767
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):         29.9
Optimal Cycle:        66                 Level Of Service:                  C
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase      Split Phase      Split Phase
Rights:           Ignore           Include          Include          Ignore
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   1  0  1! 0  0   1  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:       0   267   537   411   232     1     2     0     0   468     2   328
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0   267   537   411   232     1     2     0     0   468     2   328
User Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Volume:     0   267     0   411   232     1     2     0     0   468     2     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0   267     0   411   232     1     2     0     0   468     2     0
PCE Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:     0   267     0   411   232     1     2     0     0   468     2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.98  1.00  0.95  0.95  0.95  0.93  1.00  1.00  0.93  0.98  1.00
Lanes:       1.00  1.00  1.00  1.46  0.53  0.01  1.00  0.00  0.00  1.00  1.00  1.00
Final Sat.:  1900  1862  1900  2650   955     4  1769     0     0  1769  1862  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.14  0.00  0.16  0.24  0.24  0.00  0.00  0.00  0.26  0.00  0.00
Crit Moves:        ****              ****        ****              ****
Green/Cycle: 0.00  0.19  0.00  0.32  0.32  0.32  0.00  0.00  0.00  0.34  0.34  0.00
Volume/Cap:  0.00  0.77  0.00  0.49  0.77  0.77  0.77  0.00  0.00  0.77  0.00  0.00
Delay/Veh:    0.0  40.7   0.0  22.4  29.0  29.0 379.9   0.0   0.0  29.2  17.2   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  40.7   0.0  22.4  29.0  29.0 379.9   0.0   0.0  29.2  17.2   0.0
DesignQueue:    0    10     0    13     8     0     0     0     0    15     0     0
********************************************************************************
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #14 Park Avenue / Midway
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):         0.822
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):       32.5
Optimal Cycle:        76              Level Of Service:                  C
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase      Split Phase      Split Phase
Rights:           Ignore          Include          Include           Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   1  0  1! 0  0   1  0  0  0  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      0   267   537   411   232     1     2     0     0   468     2   328
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   0   267   537   411   232     1     2     0     0   468     2   328
Added Vol:     0    28     1    41    36     0     0     0     0     1     0    16
PasserByVol:   0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   0   295   538   452   268     1     2     0     0   469     2   344
User Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Volume:    0   295     0   452   268     1     2     0     0   469     2     0
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   0   295     0   452   268     1     2     0     0   469     2     0
PCE Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:    0   295     0   452   268     1     2     0     0   469     2     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.98  1.00  0.95  0.95  0.95  0.93  1.00  1.00  0.93  0.98  1.00
Lanes:       1.00  1.00  1.00  1.45  0.54  0.01  1.00  0.00  0.00  1.00  1.00  1.00
Final Sat.:  1900  1862  1900  2631   978     4  1769     0     0  1769  1862  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.16  0.00  0.17  0.27  0.27  0.00  0.00  0.00  0.27  0.00  0.00
Crit Moves:        ****                    ****  ****              ****
Green/Cycle: 0.00  0.19  0.00  0.33  0.33  0.33  0.00  0.00  0.00  0.32  0.32  0.00
Volume/Cap:  0.00  0.82  0.00  0.52  0.82  0.82  0.82  0.00  0.00  0.82  0.00  0.00
Delay/Veh:    0.0  45.1   0.0  21.8  30.8  30.8 444.2   0.0   0.0  34.3  18.4   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  45.1   0.0  21.8  30.8  30.8 444.2   0.0   0.0  34.3  18.4   0.0
DesignQueue:   0    11     0    14     9     0     0     0     0    15     0     0
*******************************************************************************
```

```
------------------------------------------------------------------------------
                    EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #15 Midway / Hegan Lane
******************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):        0.666
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        22.2
Optimal Cycle:        46                 Level Of Service:                 C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      16   374     0    5   408   286  416     0    32    0     0    10
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   16   374     0    5   408   286  416     0    32    0     0    10
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95
PHF Volume:    17   394     0    5   429   301  438     0    34    0     0    11
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   17   394     0    5   429   301  438     0    34    0     0    11
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Final Vol.:    17   394     0    5   429   301  438     0    34    0     0    11
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  0.93  0.98  1.00 0.93  0.98  0.83 0.71  1.00  0.71 1.00  1.00  0.85
Lanes:       1.00  1.00  0.00 1.00  1.00  1.00 0.93  0.00  0.07 0.00  0.00  1.00
Final Sat.:  1769  1862     0 1769  1862  1583 1247     0    97    0     0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01  0.21  0.00 0.00  0.23  0.19 0.35  0.00  0.35 0.00  0.00  0.01
Crit Moves:  ****                   ****       ****
Green/Cycle: 0.01  0.36  0.00 0.00  0.35  0.35 0.53  0.00  0.53 0.00  0.00  0.53
Volume/Cap:  0.67  0.60  0.00 0.60  0.67  0.55 0.67  0.00  0.67 0.00  0.00  0.01
Delay/Veh:   90.3  22.5   0.0 120.9 24.9  22.3 16.2   0.0  16.2  0.0   0.0   9.0
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:  90.3  22.5   0.0 120.9 24.9  22.3 16.2   0.0  16.2  0.0   0.0   9.0
DesignQueue:    1    12     0    0    13     9   10     0     1    0     0     0
******************************************************************************
```

```
---------------------------------------------------------------------------------
                      EXISTING plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
---------------------------------------------------------------------------------

                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*********************************************************************************
Intersection #15 Midway / Hegan Lane
*********************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):         0.702
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        22.9
Optimal Cycle:        49               Level Of Service:                  C
*********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  0  1  0    1  0  1  0  1    0  0  1! 0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:      16   374     0     5   408   286   416     0    32     0     0    10
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   16   374     0     5   408   286   416     0    32     0     0    10
Added Vol:      0    12     0     0    29     7    18     0     1     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   16   386     0     5   437   293   434     0    33     0     0    10
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95  0.95
PHF Volume:    17   406     0     5   460   308   457     0    35     0     0    11
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   17   406     0     5   460   308   457     0    35     0     0    11
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    17   406     0     5   460   308   457     0    35     0     0    11
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.98  1.00  0.93  0.98  0.83  0.71  1.00  0.71  1.00  1.00  0.85
Lanes:       1.00  1.00  0.00  1.00  1.00  1.00  0.93  0.00  0.07  0.00  0.00  1.00
Final Sat.:  1769  1862     0  1769  1862  1583  1248     0    96     0     0  1611
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01  0.22  0.00  0.00  0.25  0.19  0.37  0.00  0.37  0.00  0.00  0.01
Crit Moves:  ****                    ****        ****
Green/Cycle: 0.01  0.36  0.00  0.00  0.35  0.35  0.52  0.00  0.52  0.00  0.00  0.52
Volume/Cap:  0.70  0.60  0.00  0.60  0.70  0.55  0.70  0.00  0.70  0.00  0.00  0.01
Delay/Veh:  103.4  22.4   0.0 126.0  25.7  22.1  17.6   0.0  17.6   0.0   0.0   9.2
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh: 103.4  22.4   0.0 126.0  25.7  22.1  17.6   0.0  17.6   0.0   0.0   9.2
DesignQueue:    1    12     0     0    14     9    10     0     1     0     0     0
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                        EXISTING plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
             2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #16 Hegan lane / ARTC Access
********************************************************************************
Average Delay (sec/veh):        9.5    1.0    Worst Case Level Of Service:        A
********************************************************************************
Approach:       North Bound       South Bound       East Bound        West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign        Uncontrolled      Uncontrolled
Rights:          Include           Include           Include           Include
Lanes:        0  0  1! 0  0     0  0  1! 0  0     0  0  0  1  0     0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 4 Nov 2004 <<
Base Vol:        8    0    24     0    0     0     0  136     1     7  169     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     8    0    24     0    0     0     0  136     1     7  169     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:      8    0    25     0    0     0     0  143     1     7  178     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      8    0    25     0    0     0     0  143     1     7  178     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   336 xxxx   144  xxxx xxxx xxxxx  xxxx xxxx xxxxx   144 xxxx xxxxx
Potent Cap.:   663 xxxx   909  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1438 xxxx xxxxx
Move Cap.:     661 xxxx   909  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1438 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:     *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  831 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
Shared LOS:      *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:          9.5           xxxxxx            xxxxxx            xxxxxx
ApproachLOS:           A               *                 *                 *
```

```
-------------------------------------------------------------------------------
                     EXISTING plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #16 Hegan lane / ARTC Access
*******************************************************************************
Average Delay (sec/veh):        9.5  1.6  Worst Case Level Of Service:        A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date:  4 Nov 2004 <<
Base Vol:        8    0    24     0    0     0     0  136     1     7  169     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     8    0    24     0    0     0     0  136     1     7  169     0
Added Vol:       0    0    19     0    0     0     0    0     0     8    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     8    0    43     0    0     0     0  136     1    15  169     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:      8    0    45     0    0     0     0  143     1    16  178     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      8    0    45     0    0     0     0  143     1    16  178     0
Critical Gap Module:
Critical Gp:   6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:   3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   353 xxxx   144  xxxx xxxx xxxxx  xxxx xxxx xxxxx   144 xxxx xxxxx
Potent Cap.:   649 xxxx   909  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1438 xxxx xxxxx
Move Cap.:     643 xxxx   909  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1438 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  854 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:         9.5            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:          A                *                *                *
```

KDA

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                                Scenario Report
Scenario:             cum plus Master Plan AM

Command:              Default Command
Volume:               cum am
Geometry:             existing
Impact Fee:           Default Impact Fee
Trip Generation:      am peak
Trip Distribution:    current
Paths:                Default Paths
Routes:               Default Routes
Configuration:        Default Configuration
```

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                           Trip Generation Report

                            Forecast for am peak

Zone                                        Rate   Rate    Trips Trips    Total % Of
 #   Subzone         Amount  Units           In     Out     In   Out      Trips Total

---- ------------ ------- -------------- ------ ------  ----- -----    ----- -----

  1                1940.00 students        0.17   0.04    330    78      408  48.6
         Zone 1 Subtotal ............................    330    78      408  48.6

  2                1935.00 students        0.17   0.04    329    77      406  48.3
         Zone 2 Subtotal ............................    329    77      406  48.3

  3                 125.00 students        0.17   0.04     21     5       26   3.1
         Zone 3 Subtotal ............................     21     5       26   3.1


------------------------------------------------------------------------------
TOTAL ...............................................    680   160      840 100.0
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                         Trip Distribution Report

                         Percent Of Trips current

                                 To Gates
             1     2     3     4     5     6     7     8     9    10
Zone       ----- ----- ----- ----- ----- ----- ----- ----- ----- -----

    1      15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
    2      15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
    3      15.0  15.0  12.5  15.0   1.5   4.0  20.0   7.0   5.0   5.0
```

```
--------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                          Turning Movement Report
                                 am peak

Volume    Northbound         Southbound        Eastbound         Westbound      Total
Type   Left Thru Right   Left Thru Right   Left Thru Right   Left Thru Right  Volume

#1 Nord Ave / West Sacramento Ave
Base      7  468   222    458  849    14     16   10     3    186   13   299    2544
Added     0    8     2     64   38     0      0    0     0      1    0    16     129
Total     7  476   224    522  887    14     16   10     3    187   13   315    2673

#2 Sacramento Ave / Warner Ave
Base     66   99    60     51  338    42     75  399   125     48  213    36    1552
Added    16   16    41     13   67     0      0    0    67    172    1     3     396
Total    82  115   101     64  405    42     75  399   192    220  214    39    1948

#3 Esplanade / 1st Avenue
Base      0  878    87      0 1105    92     77  491    59    107  356   113    3364
Added     0   12    15      0   85     0      8    9     0     87   15     0     231
Total     0  890   102      0 1190    92     85  500    59    194  371   113    3595

#4 Esplanade / Sacramento Ave
Base    343  975     0      0 1130   303      0    0   277      0    0     0    3028
Added    94   27     0      0  114    58      0    0    44      0    0     0     337
Total   437 1002     0      0 1244   361      0    0   321      0    0     0    3365

#5 Warner Ave / Legion Avenue
Base      0  160   108    209  286     0      0    0     0     51    0    70     884
Added     0   61     1      4   56     0      0    0     0      4    0    18     144
Total     0  221   109    213  342     0      0    0     0     55    0    88    1028

#6 Walnut Avenue / 2nd Street
Base     35  634   107    164  694     4     60   82    85     60   65   118    2107
Added     0    6     6     23   15     0      0    0     0      1    0     5      56
Total    35  640   113    187  709     4     60   82    85     61   65   123    2163

#7 2nd Avenue / Cherry St
Base      3   22     9     22   13     5     61  324    14     26  269   325    1093
Added     0    0     0      0    0     0      0   29     0      0    6     0      35
Total     3   22     9     22   13     5     61  353    14     26  275   325    1128

#8 2nd Street / Ivy Street / Warner Ave
Base    129  116    27     62   98    25     27  309    17     13  467    81    1370
Added     0   18     7     37   23     1      2   27     0      2    5    41     163
Total   129  134    34     99  121    26     29  336    17     15  472   122    1533

#9 2nd Street / Hazel St
Base     27    0    16      3    0     7      1  324    48     14  517     7     963
Added     7    0    14      0    0     0      0   40    31     58   41     0     191
PassBy   33    0     0      0    0     0      0  -37    37      0  -33     0       0
Total    67    0    30      3    0     7      1  327   116     72  525     7    1154
```

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                           5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
Volume     Northbound       Southbound       Eastbound        Westbound     Total
Type    Left Thru Right  Left Thru Right  Left Thru Right  Left Thru Right Volume


#10 2nd Street / Chestnut St
Base      34    0    31     0    0     0     0  320    38    60  512     0    995
Added      0    0     0     0    0     0     0   54     0     0   99     0    153
PassBy   -34    0   -31     0    0     0     0    0   -37   -59    0     0   -161
Total     -0    0     0     0    0     0     0  374     1     1  611     0    987

#11 2nd Street / Normal Ave
Base       4    4    25    12    0    13     9  296    43    55  551    20   1031
Added      7    0    24     0    0     0     0   26    28   100   93     0    278
PassBy     0    0    31     0    0     0     0  -31     0    59  -59     0      0
Total     11    4    80    12    0    13     9  291    71   214  585    20   1309

#12 2nd Street / Broadway
Base       0    0     0    62  858   113     0  260    65    72  446     0   1876
Added      0    0     0     2   61    73     0   22    27     6  120     0    311
Total      0    0     0    64  919   186     0  282    92    78  566     0   2187

#13 2nd Street / Main Street
Base     135  904   147     0    0     0   107  213     0     0  378    31   1915
Added    100   90     1     0    0     0    17    7     0     0   26     8    249
Total    235  994   148     0    0     0   124  220     0     0  404    39   2164

#14 Park Avenue / Midway
Base       1  415   609   285  374     2     2    0     2   574    0   341   2604
Added      0   37     0    11   26     0     0    0     0     1    0    46    121
Total      1  452   609   296  400     2     2    0     2   575    0   387   2725

#15 Midway / Hegan Lane
Base      93  712     0    18  510   579   323    8    46     0    6     6   2302
Added      1   33     0     0    8    20     5    0     0     0    0     0     67
Total     94  745     0    18  518   599   328    8    46     0    6     6   2369

#16 Hegan lane / ARTC Access
Base       3    0     6     0    0     0     0  222    27    66  167     0    491
Added      0    0     5     0    0     0     0    0     0    21    0     0     26
Total      3    0    11     0    0     0     0  222    27    87  167     0    518
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                           Impact Analysis Report
                              Level Of Service

Intersection                                Base            Future         Change
                                         Del/   V/        Del/   V/          in
                                     LOS Veh    C     LOS Veh    C
#  1 Nord Ave / West Sacramento Ave  E  55.2 1.062   E  69.3 1.128   +14.176 D/V

#  2 Sacramento Ave / Warner Ave     C  31.4 0.698   D  50.2 0.925   +18.860 D/V

#  3 Esplanade / 1st Avenue          C  27.0 0.862   D  35.6 0.958   + 8.605 D/V

#  4 Esplanade / Sacramento Ave      F  70.0 0.000   F 231.6 0.000   + 0.000 V/C

#  5 Warner Ave / Legion Avenue      B  10.7 0.301   B  11.1 0.363   + 0.441 D/V

#  6 Walnut Avenue / 2nd Street      B  18.6 0.567   B  18.9 0.589   + 0.386 D/V

#  7 2nd Avenue / Cherry St          D  28.0 0.000   D  29.5 0.000   + 0.000 V/C

#  8 2nd Street / Ivy Street / Warn  B  12.2 0.336   B  12.6 0.365   + 0.424 D/V

#  9 2nd Street / Hazel St           C  16.2 0.000   D  28.3 0.000   + 0.000 V/C

# 10 2nd Street / Chestnut St        C  15.8 0.000   A   9.9 0.000   + 0.000 V/C

# 11 2nd Street / Normal Ave         C  18.7 0.000   E  38.7 0.000   + 0.000 V/C

# 12 2nd Street / Broadway           B  14.4 0.460   B  15.3 0.549   + 0.949 D/V

# 13 2nd Street / Main Street        B  17.2 0.679   B  18.7 0.749   + 1.464 D/V

# 14 Park Avenue / Midway            F  82.6 1.090   F  97.2 1.138   +14.654 D/V

# 15 Midway / Hegan Lane             C  29.7 0.874   C  31.7 0.896   + 2.027 D/V

# 16 Hegan lane / ARTC Access        B  10.8 0.000   B  10.6 0.000   + 0.000 V/C
```

```
cum plus Master Plan AM    Wed Dec 8, 2004 06:06:21                  Page 6-1
-------------------------------------------------------------------------------
                  CUMULATIVE plus MASTER PLAN (4,000)
                      5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
*******************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):        1.062
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):        55.2
Optimal Cycle:      180               Level Of Service:                  E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  0  1! 0  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      5  360   171  352  653    11   12    8     2  143   10   230
Growth Adj: 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30
Initial Bse:   7  468   222  458  849    14   16   10     3  186   13   299
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:    7  520   247  508  943    16   17   12     3  207   14   332
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   7  520   247  508  943    16   17   12     3  207   14   332
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    7  520   247  508  943    16   17   12     3  207   14   332
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment: 0.93 0.93  0.93 0.93 0.98  0.98 0.67 0.69  0.67 0.67 0.84  0.69
Lanes:      1.00 0.68  0.32 1.00 0.98  0.02 0.54 0.37  0.09 1.00 0.03  0.97
Final Sat.: 1769 1202   571 1769 1825    31  683  482   120 1269   53  1265
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.43  0.43 0.29 0.52  0.52 0.02 0.02  0.02 0.16 0.26  0.26
Crit Moves:      ****       ****                                  ****
Green/Cycle: 0.01 0.41  0.41 0.27 0.67  0.67 0.25 0.25  0.25 0.25 0.25  0.25
Volume/Cap:  0.77 1.06  1.06 1.06 0.77  0.77 0.10 0.10  0.10 0.66 1.06  1.06
Delay/Veh:  202.2 74.9  74.9 87.8 11.8  11.8 23.4 23.4  23.4 32.2 97.3  97.3
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh: 202.2 74.9  74.9 87.8 11.8  11.8 23.4 23.4  23.4 32.2 97.3  97.3
DesignQueue:    0   15     7   18   16     0    1    0     0    7    1    12
*******************************************************************************



Traffix 7.5.1015 (c) 2000 Dowling Assoc. Licensed to kdANDERSON TRANSP.
```

```
-----------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
         2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #1 Nord Ave / West Sacramento Ave
*****************************************************************************
Cycle (sec):         80              Critical Vol./Cap. (X):        1.128
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):      69.3
Optimal Cycle:      180              Level Of Service:                  E
*****************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  0  1  0   1  0  0  1  0   0  0  1! 0  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        5  360   171   352  653    11    12    8     2   143   10   230
Growth Adj:   1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:     7  468   222   458  849    14    16   10     3   186   13   299
Added Vol:       0    8     2    64   38     0     0    0     0     1    0    16
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     7  476   224   522  887    14    16   10     3   187   13   315
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      7  529   249   580  985    16    17   12     3   208   14   350
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     7  529   249   580  985    16    17   12     3   208   14   350
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:      7  529   249   580  985    16    17   12     3   208   14   350
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.93 0.93  0.93  0.93 0.98  0.98  0.63 0.65  0.64  0.67 0.84  0.69
Lanes:        1.00 0.68  0.32  1.00 0.98  0.02  0.54 0.37  0.09  1.00 0.03  0.97
Final Sat.:   1769 1205   567  1769 1829    30   645  456   114  1268   51  1265
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.44  0.44  0.33 0.54  0.54  0.03 0.03  0.03  0.16 0.28  0.28
Crit Moves:        ****        ****                                    ****
Green/Cycle:  0.00 0.39  0.39  0.29 0.67  0.67  0.25 0.25  0.25  0.25 0.25  0.25
Volume/Cap:   0.80 1.13  1.13  1.13 0.80  0.80  0.11 0.11  0.11  0.67 1.13  1.13
Delay/Veh:   222.5 99.7  99.7 108.3 12.9  12.9  23.6 23.6  23.6  32.8  120 119.5
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  222.5 99.7  99.7 108.3 12.9  12.9  23.6 23.6  23.6  32.8  120 119.5
DesignQueue:     0   16     8    20   17     0     1    0     0     7    1    12
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap. (X):         0.698
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):      31.4
Optimal Cycle:        59             Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected         Protected         Protected         Protected
Rights:          Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      51    76    46    39   260    32    58   307    96    37   164    28
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   66    99    60    51   338    42    75   399   125    48   213    36
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    74   110    66    56   376    46    84   443   139    53   237    40
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   74   110    66    56   376    46    84   443   139    53   237    40
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    74   110    66    56   376    46    84   443   139    53   237    40
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  0.94  0.94  0.95  0.98  0.98  0.95  0.96  0.96  0.95  0.98  0.98
Lanes:       1.00  0.62  0.38  1.00  0.89  0.11  1.00  0.76  0.24  1.00  0.86  0.14
Final Sat.:  1805  1121   673  1805  1666   204  1805  1394   437  1805  1590   268
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.10  0.10  0.03  0.23  0.23  0.05  0.32  0.32  0.03  0.15  0.15
Crit Moves:  ****                    ****              ****        ****
Green/Cycle: 0.06  0.29  0.29  0.09  0.32  0.32  0.12  0.46  0.46  0.04  0.38  0.38
Volume/Cap:  0.70  0.34  0.34  0.34  0.70  0.70  0.39  0.70  0.70  0.70  0.39  0.39
Delay/Veh:   64.7  28.3  28.3  43.8  33.1  33.1  42.0  24.3  24.3  72.0  23.0  23.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  64.7  28.3  28.3  43.8  33.1  33.1  42.0  24.3  24.3  72.0  23.0  23.0
DesignQueue:    4     4     3     3    15     2     4    15     5     3     8     1
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Sacramento Ave / Warner Ave
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap. (X):        0.925
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        50.2
Optimal Cycle:       123                 Level Of Service:                 D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       51    76    46    39   260    32    58   307    96    37   164    28
Growth Adj:   1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:    66    99    60    51   338    42    75   399   125    48   213    36
Added Vol:      16    16    41    13    67     0     0     0    67   172     1     3
PasserByVol:     0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    82   115   101    64   405    42    75   399   192   220   214    39
User Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:     91   128   112    71   450    46    84   443   213   245   238    44
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    91   128   112    71   450    46    84   443   213   245   238    44
PCE Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:     91   128   112    71   450    46    84   443   213   245   238    44
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:   0.95  0.93  0.93  0.95  0.99  0.99  0.95  0.95  0.95  0.95  0.98  0.98
Lanes:        1.00  0.53  0.47  1.00  0.91  0.09  1.00  0.68  0.32  1.00  0.84  0.16
Final Sat.:   1805   942   825  1805  1700   174  1805  1220   587  1805  1567   290
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.05  0.14  0.14  0.04  0.26  0.26  0.05  0.36  0.36  0.14  0.15  0.15
Crit Moves:   ****                    ****              ****        ****
Green/Cycle:  0.05  0.26  0.26  0.08  0.29  0.29  0.13  0.39  0.39  0.15  0.41  0.41
Volume/Cap:   0.92  0.51  0.51  0.51  0.92  0.92  0.37  0.92  0.92  0.92  0.37  0.37
Delay/Veh:   113.8  32.3  32.3  47.7  56.7  56.7  41.0  46.9  46.9  77.9  20.6  20.6
User DelAdj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  113.8  32.3  32.3  47.7  56.7  56.7  41.0  46.9  46.9  77.9  20.6  20.6
DesignQueue:     5     5     5     4    19     2     4    16     8    12     8     1
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 Esplanade / 1st Avenue
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.862
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        27.0
Optimal Cycle:        79                Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  2  0  1    0  0  1  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   675    67    0   850    71   59   378    45   82   274    87
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   0   878    87    0  1105    92   77   491    59  107   356   113
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    0   975    97    0  1228   103   85   546    65  118   396   126
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0   975    97    0  1228   103   85   546    65  118   396   126
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0   975    97    0  1228   103   85   546    65  118   396   126
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.85  1.00 0.94  0.94  0.95 0.98  0.98  0.95 0.96  0.96
Lanes:       0.00 2.00  1.00  0.00 1.85  0.15  1.00 0.89  0.11  1.00 0.76  0.24
Final Sat.:     0 3610  1615     0 3291   276  1805 1671   199  1805 1389   442
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.27  0.06  0.00 0.37  0.37  0.05 0.33  0.33  0.07 0.28  0.28
Crit Moves:  ****                  ****              ****        ****
Green/Cycle: 0.00 0.43  0.43  0.00 0.43  0.43  0.06 0.38  0.38  0.08 0.39  0.39
Volume/Cap:  0.00 0.62  0.14  0.00 0.86  0.86  0.73 0.86  0.86  0.86 0.73  0.73
Delay/Veh:    0.0 18.4  13.8   0.0 25.8  25.8  57.5 33.5  33.5  75.9 24.6  24.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0 18.4  13.8   0.0 25.8  25.8  57.5 33.5  33.5  75.9 24.6  24.6
DesignQueue:    0   26     2     0   34     3     4   16     2     5   12     4
********************************************************************************
```

```
------------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------

                   Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #3 Esplanade / 1st Avenue
******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        0.958
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):       35.6
Optimal Cycle:       124              Level Of Service:                  D
******************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       0  0  2  0  1    0  0  1  1  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0   675    67    0   850    71    59   378    45    82   274    87
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   0   878    87    0  1105    92    77   491    59   107   356   113
Added Vol:     0    12    15    0    85     0     8     9     0    87    15     0
PasserByVol:   0     0     0    0     0     0     0     0     0     0     0     0
Initial Fut:   0   890   102    0  1190    92    85   500    59   194   371   113
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    0   988   113    0  1322   103    94   556    65   215   412   126
Reduct Vol:    0     0     0    0     0     0     0     0     0     0     0     0
Reduced Vol:   0   988   113    0  1322   103    94   556    65   215   412   126
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0   988   113    0  1322   103    94   556    65   215   412   126
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  0.95  0.85  1.00  0.94  0.94  0.95  0.98  0.98  0.95  0.97  0.97
Lanes:       0.00  2.00  1.00  0.00  1.86  0.14  1.00  0.90  0.10  1.00  0.77  0.23
Final Sat.:    0  3610  1615    0  3312   258  1805  1674   196  1805  1404   429
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.27  0.07  0.00  0.40  0.40  0.05  0.33  0.33  0.12  0.29  0.29
Crit Moves:  ****                    ****                    ****  ****
Green/Cycle: 0.00  0.42  0.42  0.00  0.42  0.42  0.07  0.35  0.35  0.12  0.40  0.40
Volume/Cap:  0.00  0.66  0.17  0.00  0.96  0.96  0.73  0.96  0.96  0.96  0.73  0.73
Delay/Veh:    0.0  19.8  14.8   0.0  37.2  37.2  56.0  50.9  50.9  83.0  24.2  24.2
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0  19.8  14.8   0.0  37.2  37.2  56.0  50.9  50.9  83.0  24.2  24.2
DesignQueue:    0    28     3     0    38     3     4    18     2     9    12     4
******************************************************************************
```

```
-------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------

                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #4 Esplanade / Sacramento Ave
*******************************************************************************
Average Delay (sec/veh):      70.0  13.4  Worst Case Level Of Service:        F
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      264  750    0     0  869   233     0    0   213     0    0     0
Growth Adj:   1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   343  975    0     0 1130   303     0    0   277     0    0     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    381 1083    0     0 1255   337     0    0   308     0    0     0
Reduct Vol:      0    0    0     0    0     0     0    0     0     0    0     0
Final Vol.:    381 1083    0     0 1255   337     0    0   308     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1592 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   796  xxxx xxxx xxxxx
Potent Cap.:  408 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   330  xxxx xxxx xxxxx
Move Cap.:    408 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   330  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del: 61.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  70.0 xxxxx xxxx xxxxx
LOS by Move:    F    *     *     *    *     *     *    *     F     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      xxxxxx           xxxxxx             70.0           xxxxxx
ApproachLOS:         *                *                 F                *
```

```
-------------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Esplanade / Sacramento Ave
*******************************************************************************
Average Delay (sec/veh):      231.6  46.8  Worst Case Level Of Service:       F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        1  0  2  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     264  750     0      0  869   233     0    0   213     0    0     0
Growth Adj:  1.30 1.30  1.30   1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:  343  975     0      0 1130   303     0    0   277     0    0     0
Added Vol:     94   27     0      0  114    58     0    0    44     0    0     0
PasserByVol:    0    0     0      0    0     0     0    0     0     0    0     0
Initial Fut:  437 1002     0      0 1244   361     0    0   321     0    0     0
User Adj:    1.00 1.00  1.00   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90   0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   486 1113     0      0 1382   401     0    0   357     0    0     0
Reduct Vol:     0    0     0      0    0     0     0    0     0     0    0     0
Final Vol.:   486 1113     0      0 1382   401     0    0   357     0    0     0
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1783 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   891  xxxx xxxx xxxxx
Potent Cap.:  344 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   285  xxxx xxxx xxxxx
Move Cap.:    344 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   285  xxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:231.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 175.2 xxxxx xxxx xxxxx
LOS by Move:    F    *     *     *    *     *     *    *     F     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:     xxxxxx           xxxxxx            175.2            xxxxxx
ApproachLOS:        *                *                F                *
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 Warner Ave / Legion Avenue
*******************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.301
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        10.7
Optimal Cycle:        26                Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Permitted        Permitted         Permitted         Permitted
Rights:          Include          Include           Include           Include
Min. Green:    0   20     0    0   20     0     0    0     0     0   20     0
Lanes:        0  0  0  1  0   1  0  1  0  0    0  0  0  0  0    0  0  1! 0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      0  123    83   161  220     0     0    0     0    39    0    54
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   0  160   108   209  286     0     0    0     0    51    0    70
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    0  178   120   233  318     0     0    0     0    56    0    78
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0  178   120   233  318     0     0    0     0    56    0    78
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    0  178   120   233  318     0     0    0     0    56    0    78
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.95  0.88  0.59 1.00  1.00  1.00 1.00  1.00  0.77 1.00  0.59
Lanes:       0.00 0.58  0.42  1.00 1.00  0.00  0.00 0.00  0.00  0.35 0.00  0.65
Final Sat.:    0 1044   703  1123 1900     0     0    0     0   520    0   725
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.17  0.17  0.21 0.17  0.00  0.00 0.00  0.00  0.11 0.00  0.11
Crit Moves:       ****                                          ****
Green/Cycle: 0.00 0.57  0.57  0.57 0.57  0.00  0.00 0.00  0.00  0.36 0.00  0.36
Volume/Cap:  0.00 0.30  0.30  0.37 0.30  0.00  0.00 0.00  0.00  0.30 0.00  0.30
Delay/Veh:    0.0  9.2   9.2   9.8  9.2   0.0   0.0  0.0   0.0  18.9  0.0  18.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.2   9.2   9.8  9.2   0.0   0.0  0.0   0.0  18.9  0.0  18.9
DesignQueue:    0    4     2     5    6     0     0    0     0     2    0     2
*******************************************************************************
```

```
------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #5 Warner Ave / Legion Avenue
******************************************************************************
Cycle (sec):          80                 Critical Vol./Cap. (X):        0.363
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        11.1
Optimal Cycle:        26                 Level Of Service:                  B
******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0   20    0     0   20    0     0    0    0     0   20    0
Lanes:        0  0  0  1  0   1  0  1  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  123   83   161  220    0     0    0    0    39    0   54
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:    0  160  108   209  286    0     0    0    0    51    0   70
Added Vol:      0   61    1     4   56    0     0    0    0     4    0   18
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0  221  109   213  342    0     0    0    0    55    0   88
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0  245  121   237  380    0     0    0    0    61    0   98
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0  245  121   237  380    0     0    0    0    61    0   98
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     0  245  121   237  380    0     0    0    0    61    0   98
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 0.96  0.90  0.58 1.00  1.00  1.00 1.00  1.00  0.78 1.00  0.58
Lanes:       0.00 0.66  0.34  1.00 1.00  0.00  0.00 0.00  0.00  0.32 0.00  0.68
Final Sat.:     0 1192   589  1108 1900     0     0    0     0   467    0   751
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.21  0.21  0.21 0.20  0.00  0.00 0.00  0.00  0.13 0.00  0.13
Crit Moves:       ****                                          ****
Green/Cycle: 0.00 0.57  0.57  0.57 0.57  0.00  0.00 0.00  0.00  0.36 0.00  0.36
Volume/Cap:  0.00 0.36  0.36  0.38 0.35  0.00  0.00 0.00  0.00  0.36 0.00  0.36
Delay/Veh:    0.0  9.7   9.7  10.0  9.6   0.0   0.0  0.0   0.0  19.4  0.0  19.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  9.7   9.7  10.0  9.6   0.0   0.0  0.0   0.0  19.4  0.0  19.4
DesignQueue:    0    5     2     5    8     0     0    0     0     2    0     3
******************************************************************************
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.567
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):        18.6
Optimal Cycle:        37                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|-----------------||-----------------||-----------------||-----------------|
Control:        Protected        Protected        Permitted         Permitted
Rights:          Include          Include          Include           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  1  0  0  1
------------|-----------------||-----------------||-----------------||-----------------|
Volume Module:
Base Vol:      27   488    82   126   534     3    46    63    65    46    50    91
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   35   634   107   164   694     4    60    82    84    60    65   118
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    39   705   118   182   771     4    66    91    94    66    72   131
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   39   705   118   182   771     4    66    91    94    66    72   131
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    39   705   118   182   771     4    66    91    94    66    72   131
------------|-----------------||-----------------||-----------------||-----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.91  0.91  0.93  0.93  0.93  0.82  0.83  0.80  0.72  0.73  0.75
Lanes:       1.00  1.71  0.29  1.00  1.99  0.01  0.26  0.36  0.38  0.48  0.52  1.00
Final Sat.:  1769  2967   497  1769  3516    18   406   560   578   657   717  1427
------------|-----------------||-----------------||-----------------||-----------------|
Capacity Analysis Module:
Vol/Sat:     0.02  0.24  0.24  0.10  0.22  0.22  0.16  0.16  0.16  0.10  0.10  0.09
Crit Moves:        ****        ****                    ****
Green/Cycle: 0.05  0.42  0.42  0.18  0.55  0.55  0.29  0.29  0.29  0.29  0.29  0.29
Volume/Cap:  0.40  0.57  0.57  0.57  0.40  0.40  0.57  0.57  0.57  0.35  0.35  0.32
Delay/Veh:   39.2  18.2  18.2  32.2  10.7  10.7  26.0  26.0  26.0  23.2  23.2  22.9
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  39.2  18.2  18.2  32.2  10.7  10.7  26.0  26.0  26.0  23.2  23.2  22.9
DesignQueue:    2    19     3     7    16     0     2     3     3     2     2     4
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #6 Walnut Avenue / 2nd Street
********************************************************************************
Cycle (sec):         80               Critical Vol./Cap. (X):        0.589
Loss Time (sec):      9 (Y+R =  4 sec) Average Delay (sec/veh):        18.9
Optimal Cycle:       39               Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Protected        Protected         Permitted         Permitted
Rights:          Include          Include           Include           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    0  1  0  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      27   488    82   126   534     3    46    63    65    46    50    91
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   35   634   107   164   694     4    60    82    84    60    65   118
Added Vol:      0     6     6    23    15     0     0     0     0     1     0     5
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   35   640   113   187   709     4    60    82    84    61    65   123
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    39   712   125   208   788     4    66    91    94    68    72   137
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   39   712   125   208   788     4    66    91    94    68    72   137
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    39   712   125   208   788     4    66    91    94    68    72   137
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.91  0.91  0.93  0.93  0.93  0.82  0.83  0.79  0.70  0.71  0.75
Lanes:       1.00  1.70  0.30  1.00  1.99  0.01  0.26  0.36  0.38  0.49  0.51  1.00
Final Sat.:  1769  2943   517  1769  3516    18   405   559   577   651   689  1422
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.02  0.24  0.24  0.12  0.22  0.22  0.16  0.16  0.16  0.10  0.10  0.10
Crit Moves:        ****        ****                    ****
Green/Cycle: 0.05  0.41  0.41  0.20  0.56  0.56  0.28  0.28  0.28  0.28  0.28  0.28
Volume/Cap:  0.40  0.59  0.59  0.59  0.40  0.40  0.59  0.59  0.59  0.38  0.38  0.35
Delay/Veh:   39.3  19.0  19.0  31.6  10.3  10.3  27.2  27.2  27.2  24.0  24.0  23.7
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  39.3  19.0  19.0  31.6  10.3  10.3  27.2  27.2  27.2  24.0  24.0  23.7
DesignQueue:    2    20     3     8    16     0     2     3     3     2     2     4
********************************************************************************
```

```
-------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 2nd Avenue / Cherry St
*******************************************************************************
Average Delay (sec/veh):     28.0  2.6  Worst Case Level Of Service:      D
*******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:         0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:         2    17     7    17    10     4    47   249    11    20   207   250
Growth Adj:    1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:      3    22     9    22    13     5    61   324    14    26   269   325
User Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:       0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:       3    25    10    25    14     6    68   360    16    29   299   361
Reduct Vol:       0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:       3    25    10    25    14     6    68   360    16    29   299   361
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   7.5   6.5   6.9   7.5   6.5   6.9   4.1  xxxx xxxxx   4.1  xxxx xxxxx
FollowUpTim:   3.5   4.0   3.3   3.5   4.0   3.3   2.2  xxxx xxxxx   2.2  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   758  1261   228   905  1089   370   680  xxxx xxxxx   396  xxxx xxxxx
Potent Cap.:   300   172   781   235   217   633   922  xxxx xxxxx  1174  xxxx xxxxx
Move Cap.:     248   148   755   180   187   612   906  xxxx xxxxx  1154  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx   9.0  xxxx xxxxx   8.1  xxxx xxxxx
LOS by Move:     *     *     *     *     *     *     A     *     *     A     *     *
Movement:       LT  - LTR - RT    LT  - LTR - RT    LT  - LTR - RT    LT  - LTR - RT
Shared Cap.:  xxxx   197 xxxxx  xxxx   201 xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Shrd StpDel:xxxxx  27.6 xxxxx xxxxx  28.0 xxxxx   9.3  xxxx xxxxx   8.2  xxxx xxxxx
Shared LOS:      *     D     *     *     D     *     A     *     *     A     *     *
ApproachDel:         27.6              28.0             xxxxxx           xxxxxx
ApproachLOS:           D                 D                 *                *
```

```
-----------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #7 2nd Avenue / Cherry St
*****************************************************************************
Average Delay (sec/veh):      29.5   2.6  Worst Case Level Of Service:      D
*****************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       2   17     7    17   10     4    47  249    11    20  207   250
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:    3   22     9    22   13     5    61  324    14    26  269   325
Added Vol:      0    0     0     0    0     0     0   29     0     0    6     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    3   22     9    22   13     5    61  353    14    26  275   325
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     3   25    10    25   14     6    68  392    16    29  306   361
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     3   25    10    25   14     6    68  392    16    29  306   361
Critical Gap Module:
Critical Gp:  7.5  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol:  793 1300   244   928 1128   373   687 xxxx xxxxx   428 xxxx xxxxx
Potent Cap.:  283  163   763   226  206   630   917 xxxx xxxxx  1142 xxxx xxxxx
Move Cap.:    233  140   738   171  178   609   901 xxxx xxxxx  1123 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.0 xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  186 xxxxx  xxxx  191 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 29.1 xxxxx xxxxx 29.5 xxxxx   9.3 xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    D     *     *    D     *     A    *     *     A    *     *
ApproachDel:       29.1             29.5            xxxxxx           xxxxxx
ApproachLOS:         D                D                *                *
```

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
********************************************************************************
Cycle (sec):         80              Critical Vol./Cap. (X):        0.336
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):       12.2
Optimal Cycle:       21              Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  0  1  0   1  0  0  1  0   0  1  0  1  0   0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      99   89    21    48   75    19    21  238    13    10  359    62
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:  129  116    27    62   98    25    27  309    17    13  467    81
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   143  129    30    69  108    27    30  344    19    14  519    90
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  143  129    30    69  108    27    30  344    19    14  519    90
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   143  129    30    69  108    27    30  344    19    14  519    90
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.63 0.95  0.95  0.59 0.95  0.95  0.82 0.82  0.82  0.86 0.86  0.86
Lanes:       1.00 0.81  0.19  1.00 0.80  0.20  0.15 1.75  0.10  0.04 1.67  0.29
Final Sat.:  1188 1468   341  1127 1445   361   239 2737   151    73 2721   472
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.09  0.09  0.06 0.07  0.07  0.13 0.13  0.13  0.19 0.19  0.19
Crit Moves:  ****                                                   ****
Green/Cycle: 0.36 0.36  0.36  0.36 0.36  0.36  0.57 0.57  0.57  0.57 0.57  0.57
Volume/Cap:  0.34 0.25  0.25  0.17 0.21  0.21  0.22 0.22  0.22  0.34 0.34  0.34
Delay/Veh:   19.2 18.3  18.3  17.8 18.0  18.0   8.6  8.6   8.6   9.4  9.4   9.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  19.2 18.3  18.3  17.8 18.0  18.0   8.6  8.6   8.6   9.4  9.4   9.4
DesignQueue:    4    4     1     2    3     1     1    7     0     0   10     2
********************************************************************************
```

```
------------------------------------------------------------------------------------
                       CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------------
                       Level Of Service Computation Report
              2000 HCM Operations Method (Future Volume Alternative)
************************************************************************************
Intersection #8 2nd Street / Ivy Street / Warner Ave
************************************************************************************
Cycle (sec):           80              Critical Vol./Cap. (X):          0.365
Loss Time (sec):        6 (Y+R =  4 sec) Average Delay (sec/veh):         12.6
Optimal Cycle:         22              Level Of Service:                    B
************************************************************************************
Approach:       North Bound       South Bound       East Bound        West Bound
Movement:      L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|-----------------||-----------------||-----------------||-----------------|
Control:          Permitted         Permitted         Permitted          Permitted
Rights:            Include           Include           Include            Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:         1  0  0  1  0     1  0  0  1  0     0  1  0  1  0     0  1  0  1  0
------------|-----------------||-----------------||-----------------||-----------------|
Volume Module:
Base Vol:       99    89    21    48    75    19    21   238    13    10   359    62
Growth Adj:   1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   129   116    27    62    98    25    27   309    17    13   467    81
Added Vol:       0    18     7    37    23     1     2    27     0     2     5    41
PasserByVol:     0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:   129   134    34    99   121    26    29   336    17    15   472   122
User Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:      0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    143   149    38   110   134    29    33   374    19    17   524   135
Reduct Vol:      0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   143   149    38   110   134    29    33   374    19    17   524   135
PCE Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:      1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    143   149    38   110   134    29    33   374    19    17   524   135
------------|-----------------||-----------------||-----------------||-----------------|
Saturation Flow Module:
Sat/Lane:     1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:   0.59  0.95  0.95  0.55  0.95  0.95  0.82  0.82  0.82  0.85  0.85  0.85
Lanes:        1.00  0.80  0.20  1.00  0.82  0.18  0.15  1.76  0.09  0.05  1.55  0.40
Final Sat.:   1113  1439   367  1052  1489   322   240  2723   138    81  2508   646
------------|-----------------||-----------------||-----------------||-----------------|
Capacity Analysis Module:
Vol/Sat:      0.13  0.10  0.10  0.10  0.09  0.09  0.14  0.14  0.14  0.21  0.21  0.21
Crit Moves:   ****                                                        ****
Green/Cycle:  0.35  0.35  0.35  0.35  0.35  0.35  0.57  0.57  0.57  0.57  0.57  0.57
Volume/Cap:   0.36  0.29  0.29  0.30  0.26  0.26  0.24  0.24  0.24  0.36  0.36  0.36
Delay/Veh:    19.8  19.0  19.0  19.2  18.7  18.7   8.5   8.5   8.5   9.3   9.3   9.3
User DelAdj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   19.8  19.0  19.0  19.2  18.7  18.7   8.5   8.5   8.5   9.3   9.3   9.3
DesignQueue:     4     4     1     3     4     1     1     7     0     0    10     3
************************************************************************************
```

```
-------------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #9 2nd Street / Hazel St
*******************************************************************************
Average Delay (sec/veh):     16.2   1.0    Worst Case Level Of Service:      C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign        Uncontrolled     Uncontrolled
Rights:          Include          Include           Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      21    0    12     2    0     5     1  249    37    11  398     5
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   27    0    16     3    0     7     1  324    48    14  517     7
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    30    0    17     3    0     7     1  360    53    16  575     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    30    0    17     3    0     7     1  360    53    16  575     7
------------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9   7.5 xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3   3.5 xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol:  749 xxxx   247   833 xxxx   331   602 xxxx xxxxx   433 xxxx xxxxx
Potent Cap.:  304 xxxx   760   265 xxxx   671   985 xxxx xxxxx  1137 xxxx xxxxx
Move Cap.:    288 xxxx   735   247 xxxx   648   969 xxxx xxxxx  1118 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.7 xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  369 xxxxx  xxxx  443 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 16.2 xxxxx xxxxx 13.3 xxxxx   8.7 xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    C     *     *    B     *     A    *     *     A    *     *
ApproachDel:       16.2             13.3            xxxxxx           xxxxxx
ApproachLOS:         C                B                *                *
```

```
------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #9 2nd Street / Hazel St
******************************************************************************
Average Delay (sec/veh):      28.3  3.1    Worst Case Level Of Service:      D
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      21    0    12     2    0     5     1  249    37    11  398     5
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   27    0    16     3    0     7     1  324    48    14  517     7
Added Vol:      7    0    14     0    0     0     0   40    31    58   41     0
PasserByVol:   33    0     0     0    0     0     0  -37    37     0  -33     0
Initial Fut:   67    0    30     3    0     7     1  327   116    72  525     7
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    75    0    33     3    0     7     1  363   129    80  584     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    75    0    33     3    0     7     1  363   129    80  584     7
Critical Gap Module:
Critical Gp:  7.5 xxxx   6.9   7.5 xxxx   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3   3.5 xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  923 xxxx   286   972 xxxx   336   611 xxxx xxxxx   512 xxxx xxxxx
Potent Cap.:  228 xxxx   717   210 xxxx   666   978 xxxx xxxxx  1064 xxxx xxxxx
Move Cap.:    204 xxxx   693   181 xxxx   644   961 xxxx xxxxx  1046 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.7 xxxx xxxxx   8.4 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  260 xxxxx  xxxx  372 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 28.3 xxxxx xxxxx 14.9 xxxxx   8.7 xxxx xxxxx   8.7 xxxx xxxxx
Shared LOS:     *    D     *     *    B     *     A    *     *     A    *     *
ApproachDel:        28.3             14.9            xxxxxx           xxxxxx
ApproachLOS:          D                B                *                *
```

```
-------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #10 2nd Street / Chestnut St
*******************************************************************************
Average Delay (sec/veh):     15.8   1.6   Worst Case Level Of Service:       C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       26    0   24     0    0     0     0  246   29     46  394    0
Growth Adj:   1.30 1.30 1.30  1.30 1.30  1.30  1.30 1.30 1.30   1.30 1.30 1.30
Initial Bse:    34    0   31     0    0     0     0  320   38     60  512    0
User Adj:     1.00 1.00 1.00  1.00 1.00  1.00  1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:      0.90 0.90 0.90  0.90 0.90  0.90  0.90 0.90 0.90   0.90 0.90 0.90
PHF Volume:     38    0   35     0    0     0     0  355   42     66  569    0
Reduct Vol:      0    0    0     0    0     0     0    0    0      0    0    0
Final Vol.:     38    0   35     0    0     0     0  355   42     66  569    0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8 xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  834 xxxx   239  xxxx xxxx xxxxx  xxxx xxxx xxxxx   417 xxxx xxxxx
Potent Cap.:  311 xxxx   769  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1153 xxxx xxxxx
Move Cap.:    287 xxxx   743  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1133 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:    *    *    *     *    *     *     *    *    *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  406 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 15.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.4 xxxx xxxxx
Shared LOS:     *    C    *     *    *     *     *    *    *     A    *     *
ApproachDel:        15.8            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:          C                *                *                *
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #10 2nd Street / Chestnut St
********************************************************************************
Average Delay (sec/veh):      9.9          Worst Case Level Of Service:      A
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  0   0  0  1  1  0   0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      26    0    24     0    0     0     0  246    29    46  394     0
Growth Adj:  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:   34    0    31     0    0     0     0  320    38    60  512     0
Added Vol:      0    0     0     0    0     0     0   54     0     0   99     0
PasserByVol:  -34    0   -31     0    0     0     0    0   -37   -59    0     0
Initial Fut:   -0    0     0     0    0     0     0  374     1     1  611     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    -0    0     0     0    0     0     0  415     1     1  679     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0    0     0     0    0     0     0  415     1     1  679     0
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   248  xxxx xxxx xxxxx  xxxx xxxx xxxxx   436 xxxx xxxxx
Potent Cap.: xxxx xxxx   758  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1134 xxxx xxxxx
Move Cap.:   xxxx xxxx   733  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1115 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  733 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.2 xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     A    *     *
ApproachDel:        9.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A               *                *                *
```

```
------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                           5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                       Level Of Service Computation Report
             2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #11 2nd Street / Normal Ave
******************************************************************************
Average Delay (sec/veh):      18.7  1.4    Worst Case Level Of Service:     C
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:         Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:         0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:        3     3    19      9     0    10      7   228    33     42   424    15
Growth Adj:   1.30  1.30  1.30   1.30  1.30  1.30   1.30  1.30  1.30   1.30  1.30  1.30
Initial Bse:     4     4    25     12     0    13      9   296    43     55   551    20
User Adj:     1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00   1.00  1.00  1.00
PHF Adj:      0.90  0.90  0.90   0.90  0.90  0.90   0.90  0.90  0.90   0.90  0.90  0.90
PHF Volume:      4     4    27     13     0    14     10   329    48     61   612    22
Reduct Vol:      0     0     0      0     0     0      0     0     0      0     0     0
Final Vol.:      4     4    27     13     0    14     10   329    48     61   612    22
------------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:   7.5   6.5   6.9    7.5  xxxx   6.9    4.1  xxxx xxxxx    4.1  xxxx xxxxx
FollowUpTim:   3.5   4.0   3.3    3.5  xxxx   3.3    2.2  xxxx xxxxx    2.2  xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol:   841  1169   229    972  xxxx   357    654  xxxx xxxxx    397  xxxx xxxxx
Potent Cap.:   261   195   780    210  xxxx   645    942  xxxx xxxxx   1173  xxxx xxxxx
Move Cap.:     234   176   755    182  xxxx   624    927  xxxx xxxxx   1153  xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx  xxxx xxxxx  xxxxx  xxxx xxxxx    8.9  xxxx xxxxx    8.1  xxxx xxxxx
LOS by Move:     *     *     *      *     *     *      A     *     *      A     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  xxxx   454 xxxxx   xxxx   291 xxxxx   xxxx  xxxx xxxxx   xxxx  xxxx xxxxx
Shrd StpDel:xxxxx  13.6 xxxxx  xxxxx  18.7 xxxxx    8.9  xxxx xxxxx    8.3  xxxx xxxxx
Shared LOS:      *     B     *      *     C     *      A     *     *      A     *     *
ApproachDel:        13.6              18.7             xxxxxx           xxxxxx
ApproachLOS:          B                 C                 *                *
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #11 2nd Street / Normal Ave
********************************************************************************
Average Delay (sec/veh):     38.7    3.6   Worst Case Level Of Service:       E
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:          Include          Include          Include           Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:        3    3    19     9    0    10     7  228    33    42  424    15
Growth Adj:   1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30  1.30 1.30  1.30
Initial Bse:     4    4    25    12    0    13     9  296    43    55  551    20
Added Vol:       7    0    24     0    0     0     0   26    28   100   93     0
PasserByVol:     0    0    31     0    0     0     0  -31     0    59  -59     0
Initial Fut:    11    4    80    12    0    13     9  291    71   214  585    20
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     12    4    89    13    0    14    10  324    79   237  650    22
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     12    4    89    13    0    14    10  324    79   237  650    22
Critical Gap Module:
Critical Gp:  7.5  6.5    6.9   7.5 xxxx    6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0    3.3   3.5 xxxx    3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: 1223 1570    241  1360 xxxx    376   692 xxxx xxxxx   423 xxxx xxxxx
Potent Cap.:  138  112    766   109 xxxx    627   913 xxxx xxxxx  1147 xxxx xxxxx
Move Cap.:    104   81    740    72 xxxx    607   897 xxxx xxxxx  1128 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.0 xxxx xxxxx   8.2 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  363 xxxxx  xxxx  134 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 18.9 xxxxx xxxxx 38.7 xxxxx   9.1 xxxx xxxxx   9.0 xxxx xxxxx
Shared LOS:     *    C     *     *    E     *     A    *     *     A    *     *
ApproachDel:      18.9              38.7             xxxxxx            xxxxxx
ApproachLOS:        C                 E                 *                 *
```

```
-------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 2nd Street / Broadway
*******************************************************************************
Cycle (sec):          80               Critical Vol./Cap. (X):         0.460
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        14.4
Optimal Cycle:        46               Level Of Service:                  B
*******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0    20     0    0    20     0    0    20     0
Lanes:        0  0  0  0  0    0  1  1  1  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0    48   660    87     0   200    50    55   343     0
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:   0     0     0    62   858   113     0   260    65    72   446     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    0     0     0    69   953   126     0   289    72    79   495     0
Reduct Vol:    0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   0     0     0    69   953   126     0   289    72    79   495     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    0     0     0    69   953   126     0   289    72    79   495     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.86  0.86  0.86  1.00  0.90  0.89  0.78  0.79  1.00
Lanes:       0.00  0.00  0.00  0.18  2.49  0.33  0.00  1.60  0.40  0.28  1.72  0.00
Final Sat.:    0     0     0   296  4086   540     0  2739   682   411  2577     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.23  0.23  0.23  0.00  0.11  0.11  0.19  0.19  0.00
Crit Moves:                         ****                               ****
Green/Cycle: 0.00  0.00  0.00  0.51  0.51  0.51  0.00  0.42  0.42  0.42  0.42  0.00
Volume/Cap:  0.00  0.00  0.00  0.46  0.46  0.46  0.00  0.25  0.25  0.46  0.46  0.00
Delay/Veh:    0.0   0.0   0.0  12.8  12.8  12.8   0.0  15.3  15.3  17.1  17.1   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  12.8  12.8  12.8   0.0  15.3  15.3  17.1  17.1   0.0
DesignQueue:    0     0     0     2    22     3     0     8     2     2    13     0
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                      CUMULATIVE plus MASTER PLAN (4,000)
                          5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #12 2nd Street / Broadway
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):         0.549
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):         15.3
Optimal Cycle:        46                Level Of Service:                   B
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0   20     0    0   20     0    0   20     0
Lanes:       0  0  0  0  0    0  1  1  1  0    0  0  1  1  0    0  1  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   48  660    87    0  200    50   55  343     0
Growth Adj: 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30
Initial Bse:   0    0     0   62  858   113    0  260    65   72  446     0
Added Vol:     0    0     0    2   61    73    0   22    27    6  120     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     0   64  919   186    0  282    92   78  566     0
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:    0    0     0   72 1021   207    0  313   102   86  629     0
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0   72 1021   207    0  313   102   86  629     0
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:    0    0     0   72 1021   207    0  313   102   86  629     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment: 1.00 1.00  1.00 0.85 0.85  0.85 1.00 0.90  0.88 0.78 0.79  1.00
Lanes:      0.00 0.00  0.00 0.17 2.35  0.48 0.00 1.50  0.50 0.24 1.76  0.00
Final Sat.:    0    0     0  268 3803   771    0 2559   834  359 2629     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00  0.00 0.27 0.27  0.27 0.00 0.12  0.12 0.24 0.24  0.00
Crit Moves:                 ****                                   ****
Green/Cycle: 0.00 0.00  0.00 0.49 0.49  0.49 0.00 0.44  0.44 0.44 0.44  0.00
Volume/Cap: 0.00 0.00  0.00 0.55 0.55  0.55 0.00 0.28  0.28 0.55 0.55  0.00
Delay/Veh:   0.0  0.0   0.0 14.5 14.5  14.5  0.0 14.6  14.6 17.2 17.2   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  0.0  0.0   0.0 14.5 14.5  14.5  0.0 14.6  14.6 17.2 17.2   0.0
DesignQueue:   0    0     0    2   25     5    0    8     3    2   17     0
********************************************************************************
```

```
--------------------------------------------------------------------------------
                        CUMULATIVE plus MASTER PLAN (4,000)
                            5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                        Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #13 2nd Street / Main Street
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap. (X):        0.454
Loss Time (sec):       6 (Y+R =  4 sec) Average Delay (sec/veh):        13.7
Optimal Cycle:        46                Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    20    0    0    0    0    0    20    0    0    20    0
Lanes:        0  1  1  1  0   0  0  0  0  0   0  1  1  0  0   0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     104  695   113    0    0     0   82  164     0    0  291    24
Growth Adj:  1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30 1.30 1.30  1.30
Initial Bse:  135  904   147    0    0     0  107  213     0    0  378    31
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:   150 1004   163    0    0     0  118  237     0    0  420    35
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  150 1004   163    0    0     0  118  237     0    0  420    35
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   150 1004   163    0    0     0  118  237     0    0  420    35
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.86 0.86  0.86 1.00 1.00  1.00 0.62 0.62  1.00 1.00 0.92  0.91
Lanes:       0.34 2.29  0.37 0.00 0.00  0.00 0.67 1.33  0.00 0.00 1.85  0.15
Final Sat.:   557 3729   605    0    0     0  784 1574     0    0 3225   269
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.27 0.27  0.27 0.00 0.00  0.00 0.15 0.15  0.00 0.00 0.13  0.13
Crit Moves:  ****                                  ****
Green/Cycle: 0.59 0.59  0.59 0.00 0.00  0.00 0.33 0.33  0.00 0.00 0.33  0.33
Volume/Cap:  0.45 0.45  0.45 0.00 0.00  0.00 0.45 0.45  0.00 0.00 0.39  0.39
Delay/Veh:    9.2  9.2   9.2  0.0  0.0   0.0 21.4 21.4   0.0  0.0 20.8  20.8
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   9.2  9.2   9.2  0.0  0.0   0.0 21.4 21.4   0.0  0.0 20.8  20.8
DesignQueue:    3   19     3    0    0     0    4    7     0    0   13     1
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #13 2nd Street / Main Street
********************************************************************************
Cycle (sec):         80                Critical Vol./Cap. (X):        0.489
Loss Time (sec):      6 (Y+R =  4 sec) Average Delay (sec/veh):        14.4
Optimal Cycle:       46                Level Of Service:                  B
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    20     0    0     0     0    0    20     0    0    20     0
Lanes:         0  1  1  1  0   0  0  0  0  0   0  1  1  0  0   0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     104   695   113     0     0     0    82   164     0     0   291    24
Growth Adj:  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30  1.30
Initial Bse:  135   904   147     0     0     0   107   213     0     0   378    31
Added Vol:    100    90     1     0     0     0    17     7     0     0    26     8
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  235   994   148     0     0     0   124   220     0     0   404    39
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:   261  1104   164     0     0     0   137   245     0     0   449    44
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  261  1104   164     0     0     0   137   245     0     0   449    44
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   261  1104   164     0     0     0   137   245     0     0   449    44
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.86  0.86  0.86  1.00  1.00  1.00  0.30  0.93  1.00  1.00  0.92  0.91
Lanes:       0.51  2.17  0.32  0.00  0.00  0.00  1.00  1.00  0.00  0.00  1.82  0.18
Final Sat.:   840  3554   528     0     0     0   579  1769     0     0  3178   311
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.31  0.31  0.31  0.00  0.00  0.00  0.24  0.14  0.00  0.00  0.14  0.14
Crit Moves:        ****                                                ****
Green/Cycle: 0.64  0.64  0.64  0.00  0.00  0.00  0.29  0.29  0.00  0.00  0.29  0.29
Volume/Cap:  0.49  0.49  0.49  0.00  0.00  0.00  0.82  0.48  0.00  0.00  0.49  0.49
Delay/Veh:    7.8   7.8   7.8   0.0   0.0   0.0  37.3  23.9   0.0   0.0  23.9  23.9
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   7.8   7.8   7.8   0.0   0.0   0.0  37.3  23.9   0.0   0.0  23.9  23.9
DesignQueue:    5    19     3     0     0     0     4     8     0     0    15     1
********************************************************************************
```

```
------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                        5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                     Level Of Service Computation Report
              2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #14 Park Avenue / Midway
******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):         1.090
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        82.6
Optimal Cycle:       180              Level Of Service:                  F
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase      Split Phase      Split Phase
Rights:            Ignore           Include          Include          Ignore
Min. Green:     0     0     0   0     0     0   0     0     0   0     0     0
Lanes:        1  0  1  0  1    1  0  1! 0  0    0  0  1! 0  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1  244   406   259  220     2     2    0     2   478    0   310
Growth Adj:  1.00 1.70  1.50  1.10 1.70  1.00  1.00 1.00  1.00  1.20 1.00  1.10
Initial Bse:    1  415   609   285  374     2     2    0     2   574    0   341
User Adj:    1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.00  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.00
PHF Volume:     1  461     0   317  416     2     2    0     2   637    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    1  461     0   317  416     2     2    0     2   637    0     0
PCE Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
MLF Adj:     1.00 1.00  0.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  0.00
Final Vol.:     1  461     0   317  416     2     2    0     2   637    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  1.00  0.96 0.96  0.96  0.89 1.00  0.89  0.93 1.00  1.00
Lanes:       1.00 1.00  1.00  1.27 0.72  0.01  0.50 0.00  0.50  1.00 1.00  1.00
Final Sat.:  1769 1862  1900  2324 1315     6   848    0   848  1769 1900  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.25  0.00  0.14 0.32  0.32  0.00 0.00  0.00  0.36 0.00  0.00
Crit Moves:       ****             ****        ****              ****
Green/Cycle: 0.23 0.23  0.00  0.29 0.29  0.29  0.00 0.00  0.00  0.33 0.00  0.00
Volume/Cap:  0.00 1.09  0.00  0.47 1.09  1.09  1.09 0.00  1.09  1.09 0.00  0.00
Delay/Veh:   23.9  101   0.0  23.6 90.0  90.0 550.9  0.0 550.9  90.8  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  23.9  101   0.0  23.6 90.0  90.0 550.9  0.0 550.9  90.8  0.0   0.0
DesignQueue:    0   17     0    10   14     0     0    0     0    21    0     0
******************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Park Avenue / Midway
********************************************************************************
Cycle (sec):         80                Critical Vol./Cap. (X):        1.138
Loss Time (sec):     12 (Y+R =  4 sec) Average Delay (sec/veh):        97.2
Optimal Cycle:      180                Level Of Service:                  F
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:       Split Phase      Split Phase      Split Phase      Split Phase
Rights:          Ignore           Include          Include          Ignore
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:       1  0  1  0  1    1  0  1! 0  0    0  0  1! 0  0    1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       1   244   406   259   220     2     2     0     2   478     0   310
Growth Adj:  1.00  1.70  1.50  1.10  1.70  1.00  1.00  1.00  1.00  1.20  1.00  1.10
Initial Bse:    1   415   609   285   374     2     2     0     2   574     0   341
Added Vol:      0    37     0    11    26     0     0     0     0     1     0    46
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    1   452   609   296   400     2     2     0     2   575     0   387
User Adj:    1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:     0.90  0.90  0.00  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00
PHF Volume:     1   502     0   329   444     2     2     0     2   638     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    1   502     0   329   444     2     2     0     2   638     0     0
PCE Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  0.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:     1   502     0   329   444     2     2     0     2   638     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.93  0.98  1.00  0.96  0.96  0.96  0.89  1.00  0.89  0.93  1.00  1.00
Lanes:       1.00  1.00  1.00  1.27  0.72  0.01  0.50  0.00  0.50  1.00  1.00  1.00
Final Sat.:  1769  1862  1900  2314  1326     6   848     0   848  1769  1900  1900
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.27  0.00  0.14  0.33  0.33  0.00  0.00  0.00  0.36  0.00  0.00
Crit Moves:        ****              ****        ****              ****
Green/Cycle: 0.24  0.24  0.00  0.29  0.29  0.29  0.00  0.00  0.00  0.32  0.00  0.00
Volume/Cap:  0.00  1.14  0.00  0.48  1.14  1.14  1.14  0.00  1.14  1.14  0.00  0.00
Delay/Veh:   23.3   117   0.0  23.5   108 107.5 584.2   0.0 584.2 109.6   0.0   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  23.3   117   0.0  23.5   108 107.5 584.2   0.0 584.2 109.6   0.0   0.0
DesignQueue:    0    18     0    11    15     0     0     0     0    21     0     0
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #15 Midway / Hegan Lane
********************************************************************************
Cycle (sec):            80                 Critical Vol./Cap. (X):        0.874
Loss Time (sec):         9 (Y+R =  4 sec) Average Delay (sec/veh):        29.7
Optimal Cycle:          83                 Level Of Service:                 C
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  0  1  0   1  0  1  0  1    0  0  1! 0  0    0  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      49  445     0    11  319   362   202    4    24     0    4     4
Growth Adj:  1.90 1.60  1.60  1.60 1.60  1.60  1.60 1.90  1.90  1.60 1.60  1.60
Initial Bse:   93  712     0    18  510   579   323    8    46     0    6     6
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   103  791     0    20  567   644   359    8    51     0    7     7
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  103  791     0    20  567   644   359    8    51     0    7     7
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   103  791     0    20  567   644   359    8    51     0    7     7
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.98  1.00  0.93 0.98  0.83  0.71 0.71  0.71  1.00 0.91  0.91
Lanes:       1.00 1.00  0.00  1.00 1.00  1.00  0.86 0.02  0.12  0.00 0.50  0.50
Final Sat.:  1769 1862     0  1769 1862  1583  1155   26   164     0  869   869
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.42  0.00  0.01 0.30  0.41  0.31 0.31  0.31  0.00 0.01  0.01
Crit Moves:  ****                        ****       ****
Green/Cycle: 0.07 0.52  0.00  0.01 0.47  0.47  0.36 0.36  0.36  0.00 0.36  0.36
Volume/Cap:  0.87 0.82  0.00  0.82 0.65  0.87  0.87 0.87  0.87  0.00 0.02  0.02
Delay/Veh:   83.6 21.8   0.0 143.8 18.3  30.6  40.4 40.4  40.4   0.0 16.8  16.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  83.6 21.8   0.0 143.8 18.3  30.6  40.4 40.4  40.4   0.0 16.8  16.8
DesignQueue:    4   19     0     1   15    17    11    0     2     0    0     0
********************************************************************************
```

```
-------------------------------------------------------------------------------
                     CUMULATIVE plus MASTER PLAN (4,000)
                         5600-37 CSU-MASTER PLAN EIR
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Midway / Hegan Lane
*******************************************************************************
Cycle (sec):          80              Critical Vol./Cap. (X):        0.896
Loss Time (sec):       9 (Y+R =  4 sec) Average Delay (sec/veh):       31.7
Optimal Cycle:        91              Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  0  1  0   1  0  1  0  1   0  0  1! 0  0   0  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      49  445    0    11  319  362   202    4   24     0    4    4
Growth Adj:  1.90 1.60 1.60  1.60 1.60 1.60  1.60 1.90 1.90  1.60 1.60 1.60
Initial Bse:   93  712    0    18  510  579   323    8   46     0    6    6
Added Vol:      1   33    0     0    8   20     5    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   94  745    0    18  518  599   328    8   46     0    6    6
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:   105  828    0    20  576  666   365    8   51     0    7    7
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  105  828    0    20  576  666   365    8   51     0    7    7
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   105  828    0    20  576  666   365    8   51     0    7    7
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.93 0.98 1.00  0.93 0.98 0.83  0.71 0.71 0.71  1.00 0.91 0.91
Lanes:       1.00 1.00 0.00  1.00 1.00 1.00  0.86 0.02 0.12  0.00 0.50 0.50
Final Sat.:  1769 1862    0  1769 1862 1583  1158   25  162     0  869  869
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.44 0.00  0.01 0.31 0.42  0.32 0.32 0.32  0.00 0.01 0.01
Crit Moves:  ****                      ****       ****
Green/Cycle: 0.07 0.52 0.00  0.01 0.47 0.47  0.35 0.35 0.35  0.00 0.35 0.35
Volume/Cap:  0.90 0.85 0.00  0.85 0.66 0.90  0.90 0.90 0.90  0.00 0.02 0.02
Delay/Veh:   89.3 23.7  0.0 159.1 18.2 33.0  43.9 43.9 43.9   0.0 17.0 17.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  89.3 23.7  0.0 159.1 18.2 33.0  43.9 43.9 43.9   0.0 17.0 17.0
DesignQueue:    4   20    0     1   15   17    11    0    2     0    0    0
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                    CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #16 Hegan lane / ARTC Access
********************************************************************************
Average Delay (sec/veh):       ~~10.8~~ 1.3    Worst Case Level Of Service:        B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  0  0  1  0   0  1  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:        3    0     6     0    0     0     0  117    27    66   88     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.90  1.00  1.00 1.90  1.00
Initial Bse:     3    0     6     0    0     0     0  222    27    66  167     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      3    0     7     0    0     0     0  247    30    73  186     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      3    0     7     0    0     0     0  247    30    73  186     0
------------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol:  594 xxxx   262  xxxx xxxx xxxxx  xxxx xxxx xxxxx   277 xxxx xxxxx
Potent Cap.:  471 xxxx   782  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1286 xxxx xxxxx
Move Cap.:    449 xxxx   782  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1286 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  627 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 10.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.0 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:        10.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:          B               *                *                *
```

```
------------------------------------------------------------------------------
                   CUMULATIVE plus MASTER PLAN (4,000)
                       5600-37 CSU-MASTER PLAN EIR
------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #16 Hegan lane / ARTC Access
******************************************************************************
Average Delay (sec/veh):      10.6      1.6 Worst Case Level Of Service:      B
******************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  1! 0  0    0  0  0  1  0    0  1  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       3    0     6     0    0     0     0  117    27    66   88     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.90  1.00  1.00 1.90  1.00
Initial Bse:    3    0     6     0    0     0     0  222    27    66  167     0
Added Vol:      0    0     5     0    0     0     0    0     0    21    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    3    0    11     0    0     0     0  222    27    87  167     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     3    0    12     0    0     0     0  247    30    97  186     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     3    0    12     0    0     0     0  247    30    97  186     0
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol:  641 xxxx   262  xxxx xxxx xxxxx  xxxx xxxx xxxxx   277 xxxx xxxxx
Potent Cap.:  442 xxxx   782  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1286 xxxx xxxxx
Move Cap.:    415 xxxx   782  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1286 xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  657 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Shrd StpDel:xxxxx 10.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.0 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:       10.6            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

APPENDIX G

APPENDIX G
REFERENCES

Ac Martin Partners, Inc. 2003. California State University Chico Campus Master Plan 2003: Draft for Internal Review. Ms. in author's possession.

Amadeo, D., D.G. Pitt, and E.H. Zube. 1989. Landscape feature classification as a determinant of perceived scenic value. *Landscape Journal* 8(1): 36-50.

Butte County Air Quality Management District. 1997. *Indirect Source Review Guidelines*.

California Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2005. (http: //www.arb.ca.gov./adam/cgi-bin/adamtop/d2wstart)

California Air Resources Board, Ambient Air Quality Standards (7/9/03) (http://www.arb.ca.gov.aq./aaqs2.pdf

California State University, Chico Campus Master Plan 2004, Initial Study, September, 2004.

California State University, Chico Campus Website, (http://www.csuchico.edu)

California State University, Chico University Police Website, (http://www.csuchico.edu/up/)

City of Chico Police Department Website, http://www.ci.chico.ca.us/Police/Home_Page.asp

Clark, William B. 1970. Gold Districts of California. *California Division of Mines and Geology*, Bulletin 193.

Cook, Sherburne F. 1955. The Epidemic of 1830-33 in California and Oregon. *University of California Publications in American Archaeology and Ethnology* 43(3):303-326. Berkeley.

Dixon, Roland B. 1905. The Northern Maidu. *Bulletin of the American Museum of Natural History 17*(3):119-346. New York.

Draft Environmental Impact Report, California State University, Chico, Master Plan, September, 1990.

Fariss, and Clarence L. Smith. 1882. *History of Plumas, Lassen, and Sierra Counties, California*. Reprinted in 1971 by Howell-North Books, Berkeley.

Garza, Vincente J.; Peter Granly; Daniel Sperling. 1997. *Transportation Project-Level Carbon Monoxide Protocol*. Institute of Transportation Studies, University of California, Davis. Report UCD-ITS-RR-97-21.

Gudde, Edwin G. *California Gold Camps*. University of California Press, Berkeley.

Johnson, Keith L. 1988. In Search of John Bidwell's Carriage House: Archaeological Investigations at Bidwell Mansion State Historic Park, Chico, California.

Kaplan, R. 1985. The analysis of perception via preference: A strategy for studying how the environment is experienced. *Landscape Planning* 12: 161-176.

Kroeber, Alfred L. 1925. Handbook of the Indians of California. *Bureau of American Ethnology* Bulletin 78. Washington.

McGie, Joseph F., 1982. *History of Butte County*, *Volume I.* Butte County Board of Education, Oroville. (Revised edition, originally published in 1956).

Ms. On file, Northeast Center of the California Historical Resources Information System, California State University, Chico.

Northern Sacramento Valley Air Basin. 2003. *Northern Sacramento Valley Air Basin 2003 Air Quality Attainment Plan*.

Riddell, Francis A., 1978. Maidu and Konkow. In *Handbook of North American Indians* (vol. 8), edited by Robert F. Heizer, pp. 370-387. Smithsonian Institution, Washington, D.C.

Scientific Resource Survey, Inc. (SRS), 1981. Archeological/Historical Test Report. The Proposed Student Housing Project Area Located on the Campus, California State University, Chico. Report on file, Northeast Information Center, California Historical Resources Information System.

Talbitzer, Bill, 1987. *Butte County: an illustrated History*. Windsor Publications, Inc., Northridge.

White, Gregory G., 2002. Bidwell Mansion Grounds Historical and Archaeological Research: Summary of Findings and Results of Geophysical Studies. In, Bidwell Mansion State Historic Park: Results of 2002 Mansion Grounds Historical and Archaeological Research, by White et al. Ms. On file, Northeast Center of the California Historical Resources Information System, California State University, Chico.

White, Gregory G., Kathleen Hillman, and Elin Pynchon, 2002. Bidwell Mansion State Historic Park: Results of 2002 Mansion Grounds Historical and Archaeological Research. Ms. On file, Northeast Center of the California Historical Resources Information System, California State University, Chico.

APPENDIX H

APPENDIX H
LIST OF PERSONS CONTACTED

Greg Francis, Executive Dean, Director of Facilities Planning, CSU Chico

James W. "Jim" Jessee, Director of Academic Publications, CSU Chico

Craig O'Conner, Senior Planner, AC Martin Partners, Inc.

Cliff Sellers, Assistant Community Development Director, City of Chico

J. Mark Cole, Administrative Director, Paul L. Byrne Memorial Agriculture Teaching and Research Center, 2004

Amy Huberland, Assistant Coordinator, Northeast Center of the California Historical Resources Information System, 2004

APPENDIX I

APPENDIX I
LIST OF PERSONS PREPARING THIS EIR

Eugene E. Smith, AICP, Quad Knopf, Inc.

Kim Hudson, AICP, Quad Knopf, Inc.

Daniel Hamilton, AICP, Quad Knopf, Inc.

Mike Haskell, Quad Knopf, Inc.

David Rader, Quad Knopf, Inc.

Courtney Schwab, Quad Knopf, Inc.

Jessica Turner, Quad Knopf, Inc.

Steve McMurtry, Quad Knopf, Inc.

Harry Tow, P.E., Quad Knopf, Inc.

Don Ballanti, Certified Consulting Meteorologist

Melinda Peak, Archaeologist, Peak & Associates

Robert Gerry, Consulting Archaeologist, Peak & Associates

Ken Anderson, kdAnderson Transportation Engineers

Jim Brennan, Bollard & Brennan, Inc., Acoustical Consultants