Appendix A

NOP and Recirculated NOP with Corresponding Comment Letters

ESA

NOTICE OF PREPARATION
Program Environmental Impact Report
City of Carson General Plan Update

Date: November 8, 2017

To: Responsible Agencies, Interested Parties and Organizations

Subject: **Revised and Recirculated Notice of Preparation of a Program Environmental Impact Report for the City of Carson General Plan Update, and Scheduling of a Scoping Meeting on December 7, 2017**

Note: A Notice of Preparation (NOP) was sent out for the Project on October 30, 2017. This is a revised NOP for the Project that is the subject of this notice. This revised NOP for the Project extends the public comment period closing date to December 15, 2017. No changes to the Project have been made since the distribution of the NOP on October 30, 2017. The Scoping Meeting will be conducted as stated in the previous NOP – December 7, 2017, from 4-6pm.

The City of Carson is preparing a General Plan Update (Project), and has determined that a comprehensive Environmental Impact Report (EIR) will be necessary. In compliance with the California Environmental Quality Act (CEQA), the City of Carson will be the lead agency and will prepare the EIR for the Project. Attached are the project description, location maps, and preliminary identification of the potential environmental topics to be explored. The City of Carson requests your input regarding the scope and content of environmental analysis that is relevant to your respective agency's statutory/regulatory responsibilities in order to ascertain potential environmental impacts of the proposed Project.

Due to time limits mandated by State law, your response must be sent at the earliest possible date, but no later than **December 15, 2017**. Please send your written response, with the name, address, phone number, and email address of your agency contact person, to the following address:

Richard Rojas, AICP, Senior Planner
City of Carson
701 East Carson Street
Carson, CA 90745

rrojas@carson.ca.us

A scoping meeting will be conducted on December 7, 2017, from 4-6pm, at the Juanita Millender-McDonald Community Center, 801 E Carson St, Carson, CA to collect oral comments from agencies and the public. It is not essential for you to attend the scoping meeting to provide comments. If you have questions regarding this NOP or the scoping meeting, please contact Richard Rojas.

11/6/17

Richard Rojas, AICP
Senior Planner
City of Carson

Date

1. Project Contact Information

Project Title	City of Carson General Plan Update
Lead Agency Name	City of Carson
Contact Person	Richard Rojas, AICP, Senior Planner
Address	City of Carson 701 East Carson Street Carson, CA 90745
Phone	(310)-952-1700
Email	rrojas@carson.ca.us
Project Sponsor Name and Address (same as lead agency)	City of Carson 701 East Carson Street Carson, CA 90745

2. Location and Regional Setting

REGIONAL SETTING

Carson is located in the central portion of southern Los Angeles County. The city is located about 10 miles south of downtown Los Angeles and three miles north of the Ports of Los Angeles and Long Beach. I-450 runs through Carson, and I-110 and I-710 are located just outside city boundaries, connecting Carson to other communities throughout the region. In addition, Carson is accessible via public transportation, including via Los Angeles Metro bus and subway lines. The regional setting is depicted in **Figure 1.**

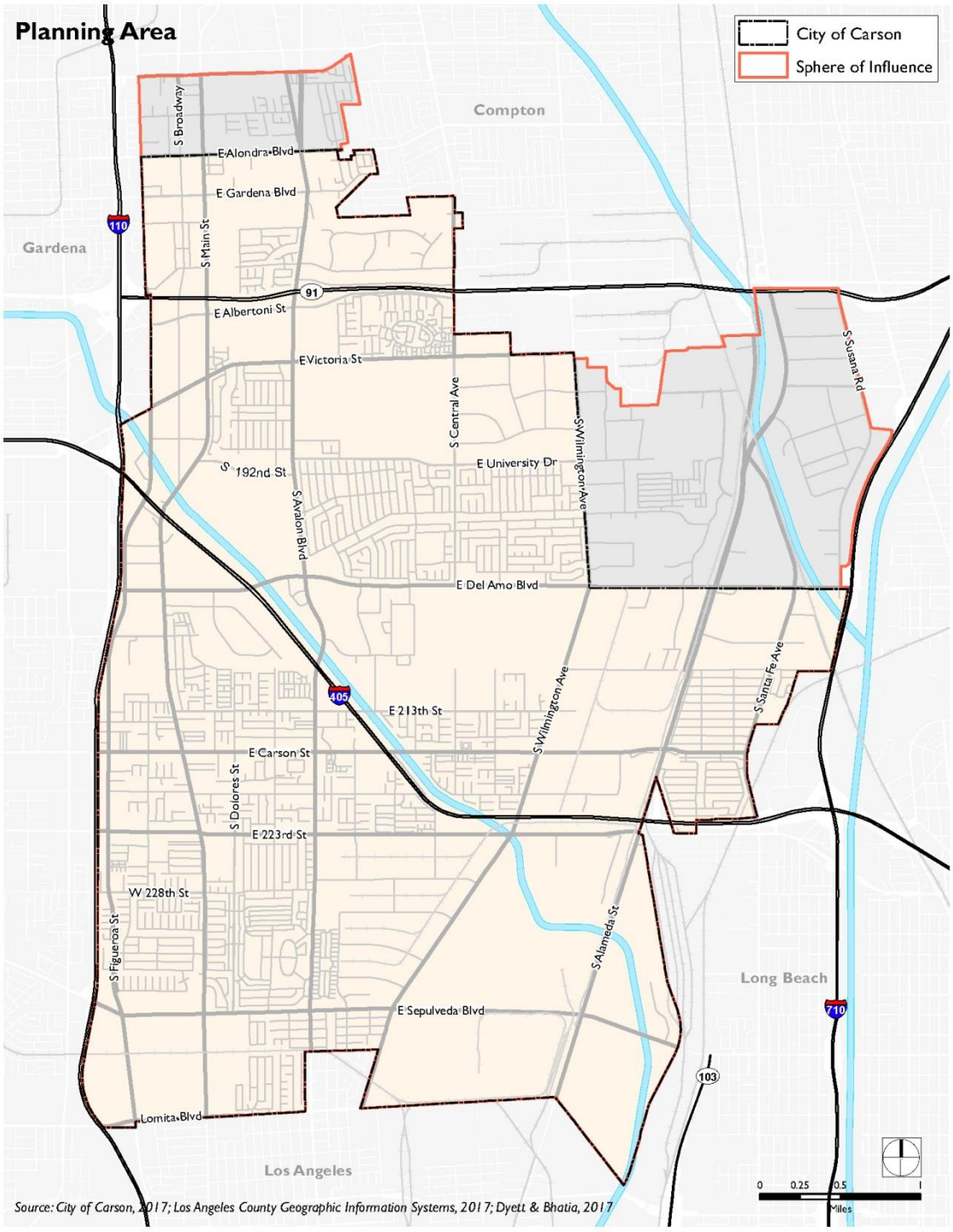
PLANNING AREA

The General Plan Planning Area (Planning Area), as shown in **Figure 2,** includes the City of Carson and its unincorporated Sphere of Influence (SOI). As shown on the map, the

Planning Area is bounded by West Redondo Beach Boulevard and the City of Compton on the north, the City of Long Beach on the east, the Los Angeles neighborhood of Wilmington on the south, and I-110 and South Figueroa Street on the west. The SOI includes a portion of unincorporated Los Angeles County, located in the northeast section of the Planning Area north of Del Amo Boulevard and east of Wilmington Avenue.

Figure 1: Regional Setting

Figure 2: Planning Area



3. Project Description

The City of Carson is preparing an update of its General Plan, which will establish the City's overall approach to development, transportation, environmental quality, and other key topics through 2040.

The General Plan is a statement of the community's vision of its long-term or ultimate physical form and development policies. The State of California mandates that "…each county and city shall adopt a comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning." (Govt. Code 65300) A city's General Plan has been described as its development constitution – the set of policies within which development regulations and decisions must fit.

Carson's current General Plan dates to 2004 and is in need of an update as new opportunities, challenges, and approaches have emerged in recent years. The updated plan will address six of the seven elements mandated by State law (land use, circulation, conservation, open space, noise, and safety). The Housing Element, which is the seventh mandatory General Plan element, was updated in 2014 and is not included in this project. In addition to the state-required elements, the General Plan will address community design, sustainability, and public health. The purpose of this General Plan Update is to:

- Establish a long-range vision that reflects the aspirations of the community and outlines steps to achieve this vision;
- Establish long-range development policies that will guide City departments, as well as Planning Commission and City Council decision-making;
- Provide a basis for judging whether specific development proposals and public projects are in harmony with plan policies;
- Plan in a manner that meets future land needs based on the projected population and job growth;
- Allow City departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance community character and environmental resources, and minimize hazards; and
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the zoning ordinance, subdivision regulations, specific and master plans, and the Capital Improvement Program.

More information on the Project is available at www.carson2040.com.

4. Environmental Impact Report

The EIR will fulfill CEQA requirements for environmental review of the updated General Plan update. The EIR will provide a programmatic environmental assessment of the potential consequences of implementing the General Plan. It will discuss how land uses and policies could potentially affect the environment, identify significant impacts, and recommend measures to mitigate those impacts.

The environmental assessment will utilize the most current statutes and guidelines for CEQA and for each issue area, including greenhouse gases and climate change. The EIR will be prepared to take full advantage of CEQA streamlining and tiering opportunities for future projects, whether in accordance with provisions of SB 375, or other tiering and exemption provisions in CEQA.

The EIR will also evaluate potential cumulative effects of the General Plan update, as well as alternatives to the proposed Project. The CEQA-required No Project alternative will evaluate the impacts resulting from continued implementation of existing General Plan. As appropriate, other alternatives that would avoid or lessen environmental effects related to the proposed Project will be discussed.

5. Potential Environmental Impacts to be Considered

Preliminary issues for the EIR analysis of the proposed Project include:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology /Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services and Facilities
- Public Utilities and Infrastructure
- Recreation
- Transportation/Traffic

The Planning Area does not contain any agricultural resources; therefore, this topic will not be addressed in the EIR.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7-OFFICE OF REGIONAL PLANNING
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213)-897-0067
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www.dot.ca.gov

Serious drought.
Making conservation
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December 15, 2017

Mr. Richard Rojas
City of Carson
701 East Carson Street
Carson, CA 90745

RE: Carson General Plan Update
Notice of Preparation
SCH# 2001091120
GTS#07-LA-2017-01197

Dear Mr. Rojas:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The City of Carson is preparing an update of its General Plan, which will establish the City's overall approach to development, transportation, environmental quality, and other topics through 2040. The General Plan Update includes various elements, including: establishing long-range development policies that will guide City departments; planning in a manner that meets future land needs based on project population and job growth; and establishing a long-range vision that reflects the aspirations of the community and outlines steps to achieve that vision.

Upon reviewing the Notice of Preparation (NOP), Caltrans has the following comments:

Caltrans is aware of challenges that the region faces in identifying viable solutions to alleviating congestion on State and Local facilities. With limited room to expand vehicular capacity, the General Plan Update should incorporate multi-modal transportation elements that will actively promote alternatives to car use and better manage existing parking assets. Prioritizing and allocating space to efficient modes of travel such as bicycling and public transit can allow streets to transport more people in a fixed amount of right-of-way. Similarly, increasing housing opportunities near existing and planned public transit corridors can promote public transit use while maximizing the benefits of transit operations and infrastructure investments.

Also, please note existing research on parking suggests that increasing the amount of automobile parking spaces in new and existing developments not only encourages and enables more driving, but also increases the cost of housing. The City should be mindful of the role parking plays in generating automobile use and explore alternative measures that permit developments to reduce the amount of parking provided. Such alternatives could include allowing developments to provide on-site car-sharing services, or high-quality bicycle parking instead of car parking.

In general, strong consideration should be given to incorporating multi-modal safety measures that enhance conditions for all road users. This includes measures such as road diets, bike lanes, and other traffic calming elements. It should be noted the Federal Highway Administration (FHWA) recognizes the road diet treatment as a proven safety countermeasure, and the cost of a road diet can be significantly reduced if implemented in tandem with routine street resurfacing. If considering implementation of innovative bicycle infrastructure, the City should consult resources such as the National Association of Transportation Officials' (NACTO) Urban Bikeway Design Guide, or FHWA Separated Bike Lane Planning and Design Guide, to assist in the design process. Caltrans formally endorsed the NACTO Guide in 2014 and the FHWA released its guide in 2015. Note the State's Highway Design Manual now contains provisions for protected bike lanes under "Design Information Bulletin Number 89: Class IV Bikeway Guidance (Separated Bikeways/ Cycle Tracks)."

If you have any questions or concerns regarding these comments, please contact project coordinator Severin Martinez at (213)-897-0067 or severin.martinez@dot.ca.gov and refer to GTS# 07-LA-2017-01197.

Sincerely,

MIYA EDMONSON
Acting IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

November 29, 2017

Richard Rosas, Senior Planner
City of Carson
Planning Department
701 East Carson Street
Carson, CA 90745

Dear Mr. Rosas:

REVISED AND RECIRCULATED NOTICE OF PREPARATION OF A PROGRAM ENVIRONMENTAL IMPACT REPORT, "CITY OF CARSON GENERAL PLAN UPDATE," THE UPDATED PLAN WILL ADDRESS SIX OF THE SEVEN ELEMENTS MANDATED BY STATE LAW (LAND USE, CIRCULATION, CONSERVATION, OPEN SPACE, NOISE, AND SAFETY), THE HOUSING ELEMENT, WHICH IS THE SEVENTH MANDATORY GENERAL PLAN ELEMENT, WAS UPDATED IN 2014 AND IS NOT INCLUDED IN THIS PROJECT, CARSON, FFER 201700143

The Revised and Recirculated Notice of Preparation of a Program Environmental Impact Report has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

We will reserve our comments for the Draft EIR.

LAND DEVELOPMENT UNIT:

1. The statutory responsibilities of the County of Los Angeles Fire Department's Land Development Unit are the review of, and comment on, all projects within the unincorporated areas of the County of Los Angeles. Our emphasis is on the availability of sufficient water supplies for firefighting operations and local/regional access issues. However, we review all projects for issues that may have a significant impact on the County of Los Angeles Fire Department. We are responsible for the review of all projects within contract cities (cities that contract with the County of Los Angeles Fire Department for fire protection services). We are responsible for all County facilities located within non-contract cities. The County of Los Angeles Fire Department's Land Development Unit may also comment on conditions that may be imposed on a project by the Fire Prevention Division which may create a potentially significant impact to the environment.

2. The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

3. When involved with subdivision in a city contracting fire protection with the County of Los Angeles Fire Department, Fire Department requirements for access, fire flows, and hydrants are addressed during the subdivision tentative map stage.

The County of Los Angeles Fire Department Land Development Unit's comments are only general requirements. Specific fire and life safety requirements and conditions set during the environmental review process will be addressed and conditions set at the building and fire plan check phase. Once the official plans are submitted for review there may be additional requirements.

This project does not propose construction of structures or any other improvements at this time. Therefore, until actual construction is proposed the project will not have a significant impact to the Fire Department's Land Development Unit.

Should any questions arise regarding subdivision, water systems, or access, please contact the County of Los Angeles Fire Department Land Development Unit's, Inspector Nancy Rodeheffer at (323) 890-4243.

The County of Los Angeles Fire Department's Land Development Unit appreciates the opportunity to comment on this project.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

The County of Los Angeles Fire Department's Forestry Division has no further comments regarding this project.

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments or requirements for the project at this time.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

Michael Y. Takeshita

MICHAEL Y. TAKESHITA, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

MYT:ac

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710

November 13, 2017

Richard Rojas
City of Carson
701 East Carson Street
Carson, CA 90745

Sent via e-mail: rrojas@carson.ca.us

RE: SCH# 2001091120; City of Carson General Plan Project; Los Angeles County, California

Dear Mr. Rojas:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for Draft Environmental Impact Report for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd. (a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE). To adequately assess and mitigate project-related impacts to cultural resources, the NAHC recommends the following actions:

If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **SB 18 has tribal consultation requirements**. The NAHC recommends **lead agencies consult with all California Native American tribes** that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance SB 18 as well as compliance with any other applicable laws**.

SB 18

SB 18 applies to local governments and requires **local governments** to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that SB 18 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

Please contact me if you need any additional information at gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

cc: State Clearinghouse

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL:
rrojas@carson.ca.us
Richard Rojas, AICP, Senior Planner
City of Carson
701 East Carson Street
Carson, CA 90745

November 17, 2017

Notice of Preparation of Program Environmental Impact Report for the City of Carson General Plan Update

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. SCAQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the Proposed Project that should be included in the Program Environmental Impact Report (EIR). Please send the SCAQMD a copy of the Program EIR upon its completion. Note that copies of the Program EIR that are submitted to the State Clearinghouse are not forwarded to SCAQMD. Please forward a copy of the Program EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the Program EIR all appendices or technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include emission calculation spreadsheets and modeling input and output files (not PDF files)[1]. Without all files and supporting documentation, SCAQMD staff will be unable to complete our review of the air quality analyses in a timely manner. Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. SCAQMD staff recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analyses. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. More recent guidance developed since this Handbook was published is also available on SCAQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993).

SCAQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

[1] Pursuant to the CEQA Guidelines Section 15174, the information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public. Placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR. Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be readily available for public examination and shall be submitted to all clearinghouses which assist in public review.

On March 3, 2017, the SCAQMD's Governing Board adopted the 2016 Air Quality Management Plan (2016 AQMP), which was later approved by the California Air Resources Board of Directors on March 23rd. The 2016 AQMP[2] is a regional blueprint for achieving air quality standards and healthful air in the South Coast Air Basin. Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and the challenges facing the South Coast Air Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment. The 2016 AQMP is available on SCAQMD's website at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

SCAQMD staff recognizes that there are many factors Lead Agencies must consider when making local planning and land use decisions. To facilitate stronger collaboration between Lead Agencies and the SCAQMD to reduce community exposure to source-specific and cumulative air pollution impacts, the SCAQMD adopted the Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning in 2005. This Guidance Document provides suggested policies that local governments can use in their General Plans or through local planning to prevent or reduce potential air pollution impacts and protect public health. SCAQMD staff recommends that the Lead Agency review this Guidance Document as a tool when making local planning and land use decisions. This Guidance Document is available on SCAQMD's website at: http://www.aqmd.gov/home/library/documents-support-material/planning-guidance/guidance-document. Additional guidance on siting incompatible land uses (such as placing homes near freeways or other polluting sources) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective*, which can be found at: http://www.arb.ca.gov/ch/handbook.pdf. Guidance[3] on strategies to reduce air pollution exposure near high-volume roadways can be found at: https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF.

The SCAQMD has also developed both regional and localized significance thresholds. SCAQMD staff requests that the Lead Agency compare the emission results to the recommended regional significance thresholds found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. In addition to analyzing regional air quality impacts, SCAQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Proposed Project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by SCAQMD staff or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

When specific development is reasonably foreseeable as result of the goals, policies, and guidelines in the Proposed Project, the Lead Agency should identify any potential adverse air quality impacts and sources of air pollution that could occur using its best efforts to find out and a good-faith effort at full disclosure in the Program EIR. The degree of specificity will correspond to the degree of specificity involved in the underlying activity which is described in the Program EIR (CEQA Guidelines Section 15146). When

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[2] South Coast Air Quality Management District. March 3, 2017. *2016 Air Quality Management Plan*. Available at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

[3] In April 2017, CARB published a technical advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory*, to supplement CARB's Air Quality and Land Use Handbook: A Community Health Perspective. This technical advisory is intended to provide information on strategies to reduce exposures to traffic emissions near high-volume roadways to assist land use planning and decision-making in order to protect public health and promote equity and environmental justice. The technical advisory is available at: https://www.arb.ca.gov/ch/landuse.htm.

quantifying air quality emissions, emissions from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis. Furthermore, for phased projects where there will be an overlap between construction and operation, emissions from the overlap construction and operational activities should be combined and compared those emissions to SCAQMD's regional air quality operational thresholds to determine the level of significance.

In the event that the Proposed Project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead Agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate these impacts. Pursuant to CEQA Guidelines Section 15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying possible mitigation measures for the Proposed Project, including:

- Chapter 11 of the SCAQMD *CEQA Air Quality Handbook*
- SCAQMD's CEQA web pages available here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies
- SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities
- SCAQMD's Mitigation Monitoring and Reporting Plan (MMRP) for the 2016 Air Quality Management Plan (2016 AQMP) available here (starting on page 86): http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf
- CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Alternatives

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires the consideration and discussion of alternatives to the project or its location which are capable of avoiding or substantially lessening any of the significant effects of the project. The discussion of a reasonable range of potentially feasible alternatives, including a "no project" alternative, is intended to foster informed decision-making and public participation. Pursuant to CEQA Guidelines Section 15126.6(d), the Program EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

Permits
In the event that the Proposed Project requires a permit from SCAQMD, SCAQMD should be identified as a Responsible Agency for the Proposed Project in the Program EIR. For more information on permits, please visit the SCAQMD webpage at: http://www.aqmd.gov/home/permits. Questions on permits can be directed to the SCAQMD's Engineering and Permitting staff at (909) 396-3385.

Data Sources
SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's webpage (http://www.aqmd.gov).

SCAQMD staff is available to work with the Lead Agency to ensure that project air quality impacts are accurately evaluated and any significant impacts are mitigated where feasible. If you have any questions regarding this letter, please contact me at lsun@aqmd.gov or call me at (909) 396-3308.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
LAC171107-02
Control Number

SCH Number: 2001091120

RECIRCULATED NOTICE OF PREPARATION/NOTICE OF SCOPING MEETING for a Draft Program Environmental Impact Report for the City of Carson General Plan Update

Date: March 18, 2021

To: State Clearinghouse, Responsible & Trustee Agencies, Organizations, and Interested Parties

Subject: Recirculated Notice of Preparation of a Draft Program Environmental Impact Report for the City of Carson General Plan Update

Comment Period: **March 22, 2021 to April 21, 2021** comments due by 5:00 PM PST

Scoping Meeting: **April 14, 2021 at 6:30 PM PST**
Zoom Registration Link:
https://us02web.zoom.us/webinar/register/WN_k2q79k0tSh2_rVJ8aYUI3Q

A Recirculated Notice of Preparation (NOP) was sent out for the Project on November 8, 2017. Since that time, the City of Carson has expanded the scope for the City of Carson General Plan Update, which will now include the Housing Element Update and a new Environmental Justice Element. Therefore, the City is recirculating the Notice of Preparation and will be hosting a new Scoping Meeting.

The City of Carson is preparing a General Plan Update (Project) and has determined that a comprehensive Environmental Impact Report (EIR) will be necessary. In compliance with the California Environmental Quality Act (CEQA), the City of Carson will be the lead agency and will prepare the EIR for the Project. Attached are the project description, location maps, and preliminary identification of the potential environmental topics to be explored.

REVIEW PERIOD: As specified by the State CEQA Guidelines, this Notice of Preparation will be circulated for a 30-day review period. This NOP and information on the Carson 2040 General Plan can be viewed online at: www.carson2040.com. The City of Carson welcomes public and agency input during this period regarding the scope and content of environmental information that must be included in the Draft Program EIR. **Comments may be submitted orally during the virtual scoping meeting or in writing by the end of the comment period as stated above** and addressed to:

Alvie Betancourt, Planning Manager
City of Carson
701 East Carson Street
Carson, CA 90745
abetancourt@carsonca.gov

SCOPING MEETING: A virtual scoping meeting for the Program EIR will be held to receive comments from agencies and the public using the link and time listed above. It is not essential for you to attend the scoping meeting to provide comments. If you have questions regarding this NOP or the scoping meeting, please contact Alvie Betancourt.

Alvaro Betancourt
Alvaro Betancourt
Planning Manager

03/16/21
Date

1. Project Contact Information

Project Title	City of Carson General Plan Update
Lead Agency Name	City of Carson
Contact Person	Alvie Betancourt, Planning Manager
Address	City of Carson 701 East Carson Street Carson, CA 90745
Phone	(310)-952-1761 x1365
Email	abetancourt@carsonca.gov
Project Sponsor Name and Address (same as lead agency)	City of Carson 701 East Carson Street Carson, CA 90745

2. Location and Regional Setting

REGIONAL SETTING

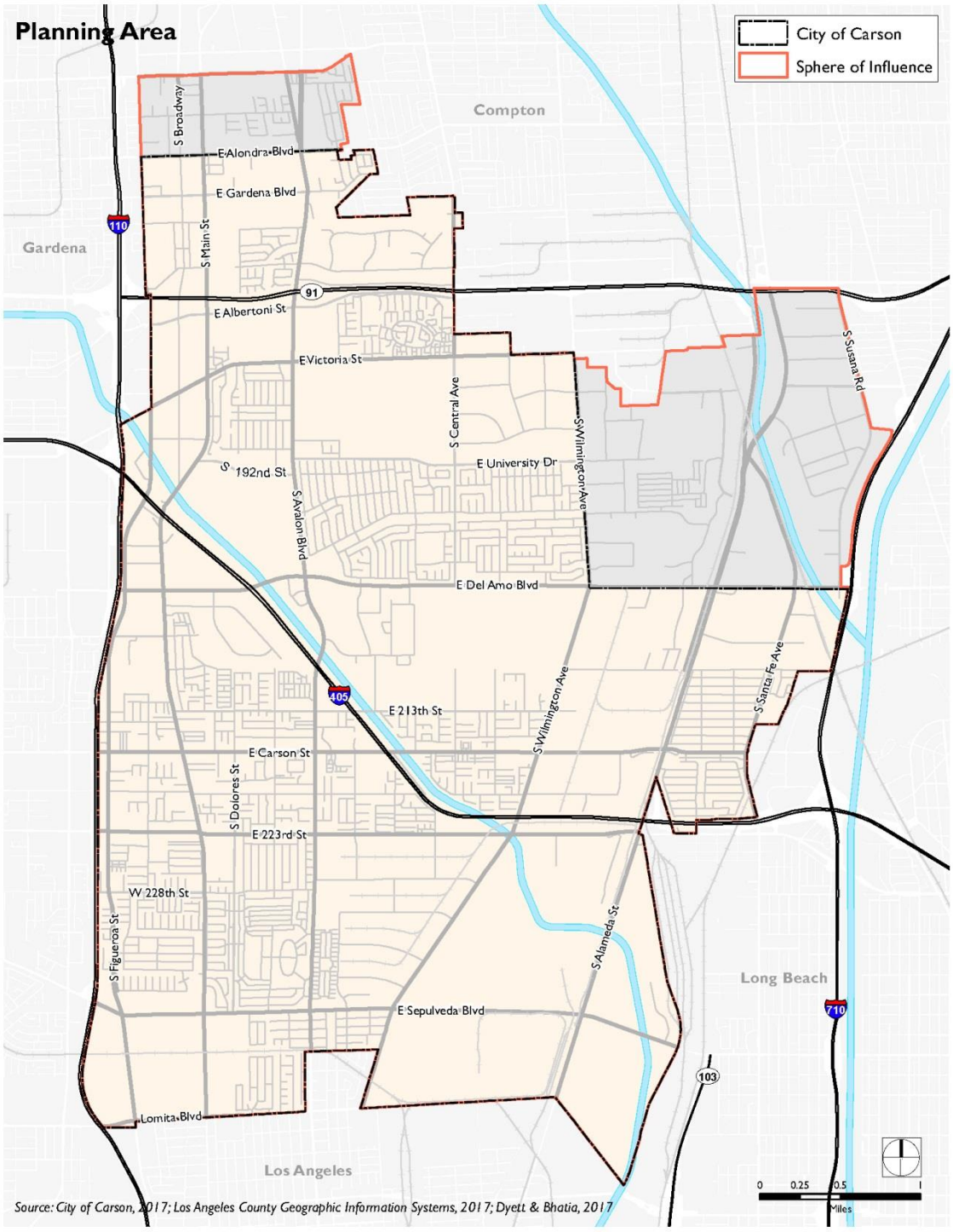
Carson is located in the central portion of southern Los Angeles County. The city is located about 10 miles south of downtown Los Angeles and three miles north of the Ports of Los Angeles and Long Beach. The Interstate 405 (I-405) runs through Carson, and I-110 and I-710 are located just outside the City boundaries, connecting Carson to other communities throughout the region. In addition, Carson is accessible via public transportation, including via Los Angeles Metro bus and subway lines. The regional setting is depicted in **Figure 1.**

PLANNING AREA

The General Plan Planning Area (Planning Area), as shown in **Figure 2,** includes the City of Carson and its unincorporated Sphere of Influence (SOI). As shown on the map, the Planning Area is bounded by West Redondo Beach Boulevard and the City of Compton on the north, the City of Long Beach on the east, the Los Angeles neighborhood of Wilmington on the south, and I-110 and South Figueroa Street on the west. The SOI includes a portion of unincorporated Los Angeles County, located in the northeast section of the Planning Area north of Del Amo Boulevard and east of Wilmington Avenue.

Figure 1. Regional Setting

Figure 2: Planning Area



3. Project Description

The City of Carson is preparing an update of its General Plan, which will establish the City's overall approach to development, transportation, environmental quality, and other key topics through 2040. The General Plan is a statement of the community's vision of its long-term or ultimate physical form and development policies. The State of California mandates that "…each county and city shall adopt a comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning." (Govt. Code 65300) A city's General Plan has been described as its development constitution – the set of policies within which development regulations and decisions must fit.

Carson's current General Plan dates to 2004 and is in need of an update as new opportunities, challenges, and approaches have emerged in recent years. The updated plan will address the seven elements mandated by State law (land use, circulation, conservation, open space, noise, safety, and housing). The Housing Element was not included in the 2017 Recirculated NOP, but will now be included in the General Plan Update. In addition to the state-required elements, the General Plan will address community design, sustainability, public health, and environmental justice. The purpose of this General Plan Update is to:

- Establish a long-range vision that reflects the aspirations of the community and outlines steps to achieve this vision;
- Establish long-range development policies that will guide City departments, as well as Planning Commission and City Council decision-making;
- Provide a basis for judging whether specific development proposals and public projects are in harmony with plan policies;
- Plan in a manner that meets future land needs based on the projected population and job growth;
- Allow City departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance community character and environmental resources, and minimize hazards; and
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the zoning ordinance, subdivision regulations, specific and master plans, and the Capital Improvement Program.

More information on the Project is available at www.carson2040.com.

A Preferred Land Use Plan has been prepared and is available on the project website https://www.carson2040.com/preferred-plan. The planning team is presently refining this plan, conducting further evaluation, and initiating preparation of detailed General Plan policies.

4. Environmental Impact Report

The Program EIR will fulfill CEQA requirements for environmental review of the General Plan Update. The EIR will provide a programmatic environmental assessment of the potential consequences of implementing the Carson General Plan 2040. It will discuss how land uses and policies could potentially affect the environment, identify significant impacts, and recommend measures to mitigate those impacts, if necessary.

The environmental assessment will utilize the most current statutes and guidelines for CEQA and for each issue area, including greenhouse gases and climate change. The EIR will be prepared to take full advantage of CEQA streamlining and tiering opportunities for future projects, whether in accordance with provisions of SB 375, or other tiering and exemption provisions in CEQA.

The EIR will also evaluate potential cumulative effects of the General Plan Update, as well as alternatives to the Project. The CEQA-required No Project Alternative will evaluate the impacts resulting from continued implementation of the existing General Plan. As appropriate, other alternatives that would avoid or lessen significant environmental effects related to the Project will be discussed.

5. Potential Environmental Impacts to be Considered

Preliminary issues for the EIR analysis of the Project include:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology /Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services and Facilities
- Public Utilities and Infrastructure
- Recreation
- Transportation
- Tribal Cultural Resources
- Wildfire

The Planning Area does not contain any agricultural resources; therefore, this topic will not be fully evaluated in the EIR.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 269-1124
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Serious Drought.
Making Conservation
a California Way of Life.

April 12, 2021

Mr. Alvie Betancourt, Planning Manager
City of Carson
701 E Carson Street
Carson, CA 90745

RE: City of Carson General Plan Update
SCH # 2001091120
Vic. LA-405/LA-110 Citywide
GTS # LA-2017-03527-NOP

Dear Mr. Alvie:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced recirculated NOP. The City of Carson is preparing an update of its General Plan, which will establish the City's overall approach to development, transportation, environmental quality, and other key topics through 2040. Carson's current General Plan dates to 2004 and is in need of an update as new opportunities, challenges, and approaches have emerged in recent years. The updated plan will address the seven elements mandated by State law (land use, circulation, conservation, open space, noise, safety, and housing).

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Senate Bill 743 (2013) has codified into CEQA law and mandated that CEQA review of transportation impacts of proposed development be modified by using Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts for all future development projects. You may reference to The Governor's Office of Planning and Research (OPR) for more information.

http://opr.ca.gov/ceqa/updates/guidelines/

As a reminder, Vehicle Miles Traveled (VMT) will be the standard transportation analysis metric in CEQA for land use projects after the July 1, 2020 statewide implementation date.

Caltrans is aware of challenges that the region faces in identifying viable solutions to alleviating congestion on State and Local facilities. With limited room to expand vehicular capacity, this development should incorporate multi-modal and complete streets transportation elements that will actively promote alternatives to car use and better manage existing parking assets. Prioritizing and allocating space to efficient modes of travel such as bicycling and public transit can allow streets to transport more people in a fixed amount of right-of-way.

Caltrans supports the implementation of complete streets and pedestrian safety measures such as road diets and other traffic calming measures. Please note the Federal Highway Administration (FHWA) recognizes the road diet treatment as a proven safety countermeasure, and the cost of a road diet can be significantly reduced if implemented in tandem with routine street resurfacing. Overall, the environmental report should ensure all modes are served well by planning and development activities. This includes reducing single occupancy vehicle trips, ensuring safety, reducing vehicle miles traveled, supporting accessibility, and reducing greenhouse gas emissions.

We encourage the Lead Agency to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements. For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8). The reference is available online at:

http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf

The 2010 *Quantifying Greenhouse Gas Mitigation Measures* report by the California Air Pollution Control Officers Association (CAPCOA), available at

http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Also, Caltrans has published the VMT-focused Transportation Impact Study Guide (TISG), dated May 20, 2020 and Caltrans Interim Land Development and Intergovernmental Review (LD-IGR) Safety Review Practitioners Guidance, prepared in On December 18, 2020.

https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743

Caltrans encourages lead agencies to complete traffic safety impact analysis in the California Environmental Quality Act (CEQA) review process so that, through partnerships and collaboration, California can reach zero fatalities and serious injuries by 2050.

If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 269-1124 and refer to GTS # LA-2017-03527AL-NOP.

Sincerely,

Anthony Higgins for

MIYA EDMONSON
IGR/CEQA Branch Chief

email: State Clearinghouse

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 15, 2021

Alvie Betancourt
City of Carson
701 East Carson Street
Carson, CA 90745
ABetancourt@carsonca.gov

Subject: Recirculated Notice of Preparation of a Draft Environmental Impact Report for the City of Carson General Plan Update, SCH #2001091120, City of Carson, Los Angeles County

Dear Ms. Betancourt:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the City of Carson (City; Lead Agency) for the City of Cason General Plan Update (Project). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect State fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq.*). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

Project Description and Summary

Objective: The City of Carson is preparing an update of its General Plan, which will establish the City's overall approach to development, transportation, environmental quality, and other topics through 2040. The updated plan will address the seven elements mandated by State law (land use, circulation, conservation, open space, noise, safety, and housing). In addition to the State-required elements, the General Plan will address community design, sustainability, public health, and environmental justice. The purpose of this General Plan Update to:

- Establish a long-range vision that reflects the aspirations of the community and outlines steps to achieve this vision;
- Establish long-range development policies that will guide City departments, as well as Planning Commission and City Council decision-making;
- Provide a basis for judging whether specific development proposals and public projects are in harmony with plan policies;
- Plan in a manner that meets future land needs based on the projected population and job growth;
- Allow City departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance community character and environmental resources, and minimize hazards; and
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the zoning ordinance, subdivision regulations, specific master plans, and the Capital Improvement Program.

Location: The Project would apply to the entire City of Carson and its unincorporated Sphere of Influence. It is located in the central portion of southern Los Angeles County. The city is located about 10 miles south of downtown Los Angeles and three miles north of the Ports of Los Angeles and Long Beach. The Interstate 405 (I-405) runs through Carson, and I-110 and I-710 are located just outside the City boundaries.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources.

Specific Comments

1) Adequate Sites Inventory. CDFW recommends the City prepare a map of the following areas if present within or adjacent to the City boundary. In addition, the City should consider the Project's potential impacts on the following areas if present within or adjacent to the Project boundary:

   a) Conservation easements or mitigation lands;
   b) U.S. Fish and Wildlife Service Threatened & Endangered Species Active Critical Habitat (USFWS 2020);
   c) Sensitive Natural Communities, [see General Comment #3 (Biological Baseline Assessment)];

d) Aquatic and riparian resources including (but not limited to) rivers, channels, streams, wetlands, and vernal pools, and associated natural plant communities; and
e) Urban forests, particularly areas with dense and large trees [see Specific Comment #4 (Loss of Bird and Raptor Nesting Habitat)].

CDFW recommends the City avoid sites that may have a direct or indirect impact on conservation easements or lands set aside as mitigation. CDFW recommends the DEIR include measures where future housing development facilitated by the Project mitigate (avoid if feasible) for impacts on biological resources occurring within Significant Ecological Areas and critical habitat, as well as mitigate for impacts on wildlife corridors, sensitive natural communities, aquatic and riparian resources, and urban forests.

2) Wetland Resources. The Project site is adjacent to the Dominguez Gap Wetlands, which provides an ecosystem to local wildlife species. It is possible that Project related activities may disturb and adversely impact the function of this ecosystem. CDFW, as described in Fish and Game Code section 703(a), is guided by the Fish and Game Commission's policies. The Wetlands Resources policy of the Fish and Game Commission "…seek[s] to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Further, it is the policy of the Fish and Game Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion that would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, Project mitigation assures there will be 'no net loss' of either wetland habitat values or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values" (CFGC 2005).

a) The Wetlands Resources policy provides a framework for maintaining wetland resources and establishes mitigation guidance. CDFW encourages avoidance of all wetland resources in and adjacent to the Project area as a primary mitigation measure and discourages the development or type conversion of wetlands to uplands. CDFW encourages activities that would avoid the reduction of wetland acreage, function, or habitat values. Once avoidance and minimization measures have been exhausted, the Project must include mitigation measures to assure a "no net loss" of either wetland habitat values, or acreage, for unavoidable impacts to wetland resources. Conversions include, but are not limited to, conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks, which preserve the riparian and aquatic values and functions for the benefit to on-site and off-site wildlife populations. CDFW recommends mitigation measures to compensate for unavoidable impacts be included in the DEIR and these measures should compensate for the loss of function and value.

b) The Fish and Game Commission's Water policy guides CDFW on the quantity and quality of the waters of this state that should be apportioned and maintained respectively so as to produce and sustain maximum numbers of fish and wildlife; to provide maximum protection and enhancement of fish and wildlife and their habitat; encourage and support programs to maintain or restore a high quality of the waters of this State; prevent the degradation thereof caused by pollution and contamination; and, endeavor

to keep as much water as possible open and accessible to the public for the use and enjoyment of fish and wildlife (CFGC 1994). CDFW recommends avoidance of water practices and structures that use excessive amounts of water, and minimization of impacts that negatively affect water quality, to the extent feasible (Fish & G. Code, § 5650).

3) Nesting Birds. CDFW recommends the DEIR include measures where future housing development facilitated by the Project avoids potential impacts to nesting birds. Project activities occurring during the bird and raptor breeding and nesting season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

   a) Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Code of Federal Regulations, Title 50, § 10.13). Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA). It is unlawful to take, possess, or needlessly destroy the nest or eggs of any raptor.

   b) CDFW recommends that measures be taken to fully avoid impacts to nesting birds and raptors. Ground-disturbing activities (e.g., mobilizing, staging, drilling, and excavating) and vegetation removal should occur outside of the avian breeding season which generally runs from February 15 through August 31 (as early as January 1 for some raptors) to avoid take of birds, raptors, or their eggs.

   c) If impacts to nesting birds and raptors cannot be avoided, CDFW recommends the DEIR include measures where future housing development facilitated by the Project mitigates for impacts. CDFW recommends surveys by a qualified biologist with experience conducting breeding bird and raptor surveys. Surveys are needed to detect protected native birds and raptors occurring in suitable nesting habitat that may be disturbed and any other such habitat within 300 feet of the project disturbance area, to the extent allowable and accessible. For raptors, this radius should be expanded to 500 feet and 0.5 mile for special status species, if feasible. Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

4) Loss of Bird and Raptor Nesting Habitat. Table 1 in the Draft General Plan Land Use Classifications shows the Flex District with a potential of up to 40% increase in residential density. The Flex District is adjacent to parks and other open space that may provide habitat for raptors. The biggest threat to birds is habitat loss and conversion of natural vegetation into another land use such as development (e.g., commercial, residential, industrial). In the greater Los Angeles, urban forests and street trees, both native and some non-native species, provide habitat for a high diversity of birds (Wood and Esaian 2020). Some species of raptors have adapted to and exploited urban areas for breeding and nesting (Cooper et al. 2020). For example, raptors (*Accipitridae*, *Falconidae*) such as red-tailed hawks (*Buteo jamaicensis*) and Cooper's hawks (*Accipiter cooperii*) can nest successfully in urban sites. Red-tailed hawks commonly nest in ornamental vegetation such as eucalyptus (Cooper et al. 2020). According to iNaturalist, there are multiple observations of red-tailed hawks and Cooper's hawks within the City.

a) CDFW recommends the DEIR provide measures where future housing development facilitated by the Project avoids removal of any native trees, large and dense-canopied native and non-native trees, and trees occurring in high density (Wood and Esaian 2020). CDFW also recommends avoiding impacts to trees protected by the City's Heritage Tree Program and Tree Ordinance. CDFW also recommends avoiding impacts to understory vegetation (e.g., ground cover, subshrubs, shrubs, and trees).

b) If impacts to trees cannot be avoided, trees should be replaced to compensate for the temporal or permanent loss habitat within a project site. Depending on the status of the bird or raptor species impacted, replacement habitat acres should increase with the occurrence of a California Species of Special Concern. Replacement habitat acres should further increase with the occurrence of a CESA-listed threatened or endangered species.

c) CDFW recommends planting native tree species preferred by birds. This includes coast live oak (*Quercus agrifolia*) and California sycamore (*Platanus racemosa*) (Wood and Esaian 2020). CDFW recommends Audubon Society's Plants for Birds for more information on selecting native plants and trees beneficial to birds (Audubon Society 2020).

5) Bats. Numerous bat species are known to roost in trees and structures throughout Los Angeles County (Remington and Cooper 2014). In urbanized areas, bats use trees and man-made structures for daytime and nighttime roosts. Accordingly, CDFW recommends the DEIR provide measures where future increases in housing development, such as in areas in and adjacent to the Flex District or other parks and open space, facilitated by the Project avoids potential impacts to bats.

a) Bats are considered non-game mammals and are afforded protection by state law from take and/or harassment (Fish & G. Code, § 4150; Cal. Code of Regs., § 251.1). Project construction and activities, including (but not limited to) ground disturbance, vegetation removal, and any activities leading to increased noise levels may have direct and/or indirect impacts on bats and roosts.

b) CDFW recommends a project-level biological resources survey provide a thorough discussion and adequate disclosure of potential impacts to bats and roosts from project construction and activities including (but not limited to) ground-disturbing activities (e.g., mobilizing, staging, drilling, and excavating) and vegetation removal. If necessary, to reduce impacts to less than significant, a project-level environmental document should provide bat-specific avoidance and/or mitigation measures [CEQA Guidelines, § 15126.4(a)(1)].

General Comments

1) Disclosure. An environmental document should provide an adequate, complete, and detailed disclosure about the effect which a proposed project is likely to have on the environment (Pub. Resources Code, § 20161; CEQA Guidelines, §15151). Adequate disclosure is necessary so CDFW may provide comments on the adequacy of proposed avoidance, minimization, or mitigation measures, as well as to assess the significance of the

specific impact relative to the species (e.g., current range, distribution, population trends, and connectivity).

2) Mitigation Measures. Public agencies have a duty under CEQA to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of feasible alternatives or mitigation measures [CEQA Guidelines, §§ 15002(a)(3), 15021]. Pursuant to CEQA Guidelines section 15126.4, an environmental document shall describe feasible measures which could mitigate for impacts below a significant level under CEQA.

   a) Level of Detail. Mitigation measures must be feasible, effective, implemented, and fully enforceable/imposed by the lead agency through permit conditions, agreements, or other legally binding instruments (Pub. Resources Code, § 21081.6(b); CEQA Guidelines, §§ 15126.4, 15041). A public agency shall provide the measures that are fully enforceable through permit conditions, agreements, or other measures (Pub. Resources Code, § 21081.6). CDFW recommends that the City prepare mitigation measures that are specific, detailed (i.e., responsible party, timing, specific actions, location), and clear in order for a measure to be fully enforceable and implemented successfully via a mitigation monitoring and/or reporting program (CEQA Guidelines, § 15097; Pub. Resources Code, § 21081.6). Adequate disclosure is necessary so CDFW may provide comments on the adequacy and feasibility of proposed mitigation measures.

   b) Disclosure of Impacts. If a proposed mitigation measure would cause one or more significant effects, in addition to impacts caused by the Project as proposed, the environmental document should include a discussion of the effects of proposed mitigation measures [CEQA Guidelines, § 15126.4(a)(1)]. In that regard, the environmental document should provide an adequate, complete, and detailed disclosure about a project's proposed mitigation measure(s). Adequate disclosure is necessary so CDFW may assess the potential impacts of proposed mitigation measures.

3) Biological Baseline Assessment. An adequate biological resources assessment should provide a complete assessment and impact analysis of the flora and fauna within and adjacent to a project site and where a project may result in ground disturbance. The assessment and analysis should place emphasis upon identifying endangered, threatened, sensitive, regionally, and locally unique species, and sensitive habitats. Impact analysis will aid in determining any direct, indirect, and cumulative biological impacts, as well as specific mitigation or avoidance measures necessary to offset those impacts. CDFW recommends avoiding any sensitive natural communities found on or adjacent to a project. CDFW also considers impacts to Species of Special Concern a significant direct and cumulative adverse effect without implementing appropriate avoid and/or mitigation measures. A project-level environmental document should include the following information:

   a) Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region [CEQA Guidelines, § 15125(c)]. An environmental document should include measures to fully avoid and otherwise protect Sensitive Natural Communities from project-related impacts. CDFW considers these communities as threatened habitats having both regional and local significance. Plant communities, alliances, and associations with a state-wide ranking of S1, S2, S3 and S4 should be considered sensitive and declining at the local

and regional level. These ranks can be obtained by visiting Vegetation Classification and Mapping Program - Natural Communities webpage (CDFWa 2020);

b) A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Adjoining habitat areas should be included where project construction and activities could lead to direct or indirect impacts off site;

c) Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at a project site and within the neighboring vicinity. The Manual of California Vegetation (MCV), second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2009). Adjoining habitat areas should be included in this assessment where project activities could lead to direct or indirect impacts off site. Habitat mapping at the alliance level will help establish baseline vegetation conditions;

d) A complete, recent, assessment of the biological resources associated with each habitat type on site and within adjacent areas that could also be affected by a project. CDFW's California Natural Diversity Database (CNDDB) in Sacramento should be contacted to obtain current information on any previously reported sensitive species and habitat (CDFWb 2020). An assessment should include a nine-quadrangle search of the CNDDB to determine a list of species potentially present at a project site. A lack of records in the CNDDB does not mean that rare, threatened, or endangered plants and wildlife do not occur in the project site. Field verification for the presence or absence of sensitive species is necessary to provide a complete biological assessment for adequate CEQA review [CEQA Guidelines, § 15003(i)];

e) A complete, recent, assessment of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect, including California Species of Special Concern, and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of a project site should also be addressed such as wintering, roosting, nesting, and foraging habitat. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, may be required if suitable habitat is present. See CDFW's Survey and Monitoring Protocols and Guidelines for established survey protocol for select species (CDFWc 2020). Acceptable species-specific survey procedures may be developed in consultation with CDFW and the U.S. Fish and Wildlife Service; and,

f) A recent wildlife and rare plant survey. CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of a proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if build out could occur over a protracted time frame or in phases.

g) A biological resources survey should include identification and delineation of any rivers, streams, and lakes and their associated natural plant communities/habitats. This includes any culverts, ditches, storm channels that may transport water, sediment, pollutants, and discharge into rivers, streams, and lakes.

4) Data. CEQA requires that information developed in environmental impact reports be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species and natural communities detected by completing and submitting CNDDB Field Survey Forms (CDFW 2020d). The City should ensure data collected at a project-level has been properly submitted, with all data fields applicable filled out. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred.

5) Biological Direct, Indirect, and Cumulative Impacts. CDFW recommends providing a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. The DEIR should address the following:

a) A discussion regarding Project-related indirect impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (NCCP, Fish & G. Code, § 2800 et. seq.)]. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR;

b) A discussion of both the short-term and long-term effects to species population distribution and concentration and alterations of the ecosystem supporting the species impacted [CEQA Guidelines, § 15126.2(a)];

c) A discussion of potential adverse impacts from lighting, noise, temporary and permanent human activity, and exotic species, and identification of any mitigation measures;

d) A discussion on Project-related changes on drainage patterns; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and, post-Project fate of runoff from the Project sites. The discussion should also address the potential water extraction activities and the potential resulting impacts on the habitat (if any) supported by the groundwater. Mitigation measures proposed to alleviate such Project impacts should be included;

e) An analysis of impacts from proposed changes to land use designations and zoning, and existing land use designation and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the DEIR; and,

f) A cumulative effects analysis, as described under CEQA Guidelines section 15130. General and specific plans, as well as past, present, and anticipated future projects,

should be analyzed relative to their impacts on similar plant and wildlife species, habitat, and vegetation communities. If the City determines that the Project would not have a cumulative impact, the environmental document should indicate why the cumulative impact is not significant. The City's conclusion should be supported by facts and analyses [CEQA Guidelines, § 15130(a)(2)].

6) Project Description and Alternatives. To enable CDFW to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DEIR:

   a) A complete discussion of the purpose and need for, and description of, the proposed Project;

   b) CEQA Guidelines section 15126.6(a) states that an environmental document shall describe a reasonable range of potentially feasible 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. CEQA Guidelines section 15126.6(f)(2) states if the Lead Agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion and should include reasons in the environmental document; and,

   c) A range of feasible alternatives to Project component location and design features to avoid or otherwise minimize direct and indirect impacts to sensitive biological resources and wildlife movement areas. CDFW recommends the City consider configuring Project construction and activities, as well as the development footprint, in such a way as to fully avoid impacts to sensitive and special status plants and wildlife species, habitat, and sensitive vegetation communities. CDFW also recommends the City consider establishing appropriate setbacks from sensitive and special status biological resources. Setbacks should not be impacted by ground disturbance or hydrological changes for the duration of the Project and from any future development. As a general rule, CDFW recommends reducing or clustering the development footprint to retain unobstructed spaces for vegetation and wildlife and provide connections for wildlife between properties and minimize obstacles to open space.

      Project alternatives should be thoroughly evaluated, even if an alternative would impede, to some degree, the attainment of the Project objectives or would be more costly (CEQA Guidelines, § 15126.6).

   d) Where the Project may impact aquatic and riparian resources, CDFW recommends the City consider alternatives that would fully avoid impacts to such resources. CDFW also recommends alternatives that would allow not impede, alter, or otherwise modify existing surface flow; watercourse and meander; and water-dependent ecosystems and vegetation communities. Project-related designs should consider elevated crossings to avoid channelizing or narrowing of streams. Any modifications to a river, creek, or stream may cause or magnify upstream bank erosion, channel incision, and drop in water level and cause the stream to alter its course of flow.

7) CESA. CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate

species, or CESA-listed plant species that results from the Project is prohibited, except as authorized by state law (Fish & G. Code §§ 2080, 2085; Cal. Code Regs., tit. 14, §786.9). Consequently, if the Project or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an Incidental Take Permit (ITP) or a consistency determination in certain circumstances, among other options [Fish & Game Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

8) Jurisdictional Waters. As a Responsible Agency under CEQA, CDFW has authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream, or use material from a streambed. For any such activities, the project applicant (or "entity") must provide written notification to CDFW pursuant to Fish and Game Code Section 1600 *et seq*.

   a) CDFW's issuance of a Lake and Streambed Alteration (LSA) Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the environmental document of the local jurisdiction (Lead Agency) for the project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the environmental document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA Agreement. Please visit CDFW's Lake and Streambed Alteration Program webpage for information about LSA Notification (CDFWe 2020).

   b) In the event the project area may support aquatic, riparian, and wetland habitats; a preliminary delineation of the streams and their associated riparian habitats should be included in the environmental document. The delineation should be conducted pursuant to the U.S. Fish and Wildlife Service (USFWS) wetland definition adopted by CDFW (Cowardin et al. 1970). Be advised that some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers' Section 404 permit and Regional Water Quality Control Board Section 401 Certification.

   c) In project areas which may support ephemeral or episodic streams, herbaceous vegetation, woody vegetation, and woodlands also serve to protect the integrity of these resources and help maintain natural sedimentation processes; therefore, CDFW recommends effective setbacks be established to maintain appropriately-sized vegetated buffer areas adjoining ephemeral drainages.

d) Project-related changes in upstream and downstream drainage patterns, runoff, and sedimentation should be included and evaluated in the environmental document.

e) As part of the LSA Notification process, CDFW requests a hydrological evaluation of the 100, 50, 25, 10, 5, and 2-year frequency storm event for existing and proposed conditions. CDFW recommends the environmental document evaluate the results and address avoidance, minimization, and/or mitigation measures that may be necessary to reduce potential significant impacts.

9) Translocation/Salvage of Plants and Animal Species. Translocation and transplantation is the process of moving an individual from a project site and permanently moving it to a new location. CDFW generally does not support the use of translocation or transplantation as the primary mitigation strategy for unavoidable impacts to rare, threatened, or endangered plant or animal species. Studies have shown that these efforts are experimental and the outcome unreliable. CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving sensitive plants and animals and their habitats.

10) Compensatory Mitigation. An environmental document should include mitigation measures for adverse Project related direct or indirect impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project-related impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement, financial assurance and dedicated to a qualified entity for long-term management and monitoring. Under Government Code, section 65967, the Lead Agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

11) Long-term Management of Mitigation Lands. For proposed preservation and/or restoration, an environmental document should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate non-wasting endowment should be set aside to provide for long-term management of mitigation lands.

Conclusion

We appreciate the opportunity to comment on the NOP for the City of Carson General Plan Update to assist the City of Carson in identifying and mitigating Project impacts on biological resources. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov.

Sincerely,

DocuSigned by:
5991E19EF8094C3...
Victoria Tang

signing for Erinn Wilson-Olgin
Environmental Program Manager I

ec: CDFW
Erinn Wilson-Olgin, Los Alamitos – Erinn.Wilson-Olgin@wildlife.ca.gov
Victoria Tang, Los Alamitos – Victoria.Tang@wildlife.ca.gov
Ruby Kwan-Davis, Los Alamitos – Ruby.Kwan-Davis@wildlife.ca.gov
Andrew Valand, Los Alamitos – Andrew.Valand@wildlife.ca.gov
Felicia Silva, Los Alamitos – Felicia.Silva@wildlife.ca.gov
Susan Howell, San Diego – Susan.Howell@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov

State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov

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GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The Gabrielino Tribal Council - San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

April 5,2021

Project Name: Carson 2040 General Plan Project, City of Carson

Dear Alvaro Betancourt

Thank you for your letter dated March 29, 2021 regarding SB18 consultation. The above proposed project location is within our Ancestral Tribal Territory; therefore, our Tribal Government requests to schedule a consultation with you as the lead agency, to discuss the project and the surrounding location in further detail.

Please contact us at your earliest convenience. ***Please Note :AB 52, "consultation" shall have the same meaning as provided in SB 18 (Govt. Code Section 65352.4).***

Thank you for your time,

Andrew Salas, Chairman
Gabrieleno Band of Mission Indians – Kizh Nation
1(844)390-0787

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401
www.fire.lacounty.gov

"Proud Protectors of Life, Property, and the Environment"

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

April 15, 2021

Alvie Betancourt, Planning Manager
City of Carson
Planning Department
701 East Carson Street
Carson, CA 90745

Dear Mr. Betancourt:

RECIRCULATED NOTICE OF PREPARATION, "CITY OF CARSON GENERAL UPDATE PLAN," IS PREPARING AN UPDATE OF ITS GENERAL PLAN, WHICH WILL ESTABLISH THE CITY'S OVERALL APPROACH TO DEVELOPMENT, TRANSPORTATION, ENVIRONMENTAL QUALITY, AND OTHER KEY TOPICS THROUGH 2040, CARSON, FFER 2021003364

The Recirculated Notice of Preparation has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

"We have no comments."

For any questions regarding this response, please contact Marcia Velasquez, Planning Division, at (323) 881-2404 or Marcia.Velasquez@fire.lacounty.gov.

LAND DEVELOPMENT UNIT:

This project does not proposed construction of structures or any other improvements at this time; Therefore, until actual construction is proposed the project will not have a significant

impact to the County of Los Angeles Fire Department's Fire Prevention, Land Development Unit.

All future development within the area within the City of Carson General Plan boundaries shall comply with the County of Los Angeles Fire Code.
All Future Development shall comply with all applicable code and ordinance requirements for construction, access, water main, fire flows, and fire hydrants.

Should any questions arise regarding subdivision, water systems, or access, please contact the County of Los Angeles Fire Department Land Development Unit's, Inspector Nancy Rodeheffer at (323) 890-4243.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

Under the Los Angeles County Oak tree Ordinance, a permit is required to cut, destroy, remove, relocate, inflict damage or encroach into the protected zone of any tree of the Oak genus which is 25 inches or more in circumference (eight inches in diameter), as measured 4 1/2 feet above mean natural grade.

If Oak trees are known to exist in the proposed project area further field studies should be conducted to determine the presence of this species on the project site.

The County of Los Angeles Fire Department's Forestry Division has no further comments regarding this project.

For any questions regarding this response, please contact Forestry Assistant, Nicholas Alegria at (818) 890-5719.

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments or requirements for the project at this time.

Please contact HHMD senior typist-clerk, Perla Garcia at (323) 890-4035 or Perla.garcia@fire.lacounty.gov if you have any questions.

If you have any additional questions, please contact this office at (323) 890-4330

Very truly yours,

RONALD M. DURBIN, CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

RMD:ac

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

April 21, 2021

Alvie Betancourt, Planning Manager
Planning Division
City of Carson
701 East Carson Street
Carson, CA 90745
Sent by Email: abetancourt@carsonca.gov

RE: City of Carson General Plan Update
Notice of Preparation of Environmental Impact Report (EIR)

Dear Alvie Betancourt:

Thank you for coordinating with the Los Angeles County Metropolitan Transportation Authority (Metro) regarding the proposed General Plan Update (Plan) located at in the City of Carson (City). Metro is committed to working with local municipalities, developers, and other stakeholders across Los Angeles County on transit-supportive developments to grow ridership, reduce driving, and promote walkable neighborhoods. Transit Oriented Communities (TOCs) are places (such as corridors or neighborhoods) that, by their design, allow people to drive less and access transit more. TOCs maximize equitable access to a multi-modal transit network as a key organizing principle of land use planning and holistic community development.

Per Metro's area of statutory responsibility pursuant to sections 15082(b) and 15086(a) of the Guidelines for Implementation of the California Environmental Quality Act (CEQA: Cal. Code of Regulations, Title 14, Ch. 3), the purpose of this letter is to provide the City with specific detail on the scope and content of environmental information that should be included in the Environmental Impact Report (EIR) for the Plan. Effects of a project on transit systems and infrastructure are within the scope of transportation impacts to be evaluated under CEQA.[1]

Plan Description
The Plan area is bounded by West Redondo Beach Boulevard and the City of Compton on the north, the City of Long beach on the east, the Los Angeles neighborhood of Wilmington on the south, and the I-110 and South Figueroa Street on the west. The update to the City's General Plan will establish the City's overall approach to development, transportation, environmental quality, and other key topics through 2040.

Recommendations for EIR Scope and Content

The Plan and EIR should include an updated inventory of existing and planned transit service provided by Metro and any other transit operators serving the City. Reference documents that should be used include Metro's 2020 Long Range Transportation Plan and 2021 NextGen Bus Plan. The Plan should include policies to enhance access and use of public transit, as recommended below. The EIR should analyze potential impacts to public transit service and facilities. Attention should be given to the three J Line (Silver) stations in the I-110 corridor, as

[1] See CEQA Guidelines section 15064.3(a); Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts In CEQA, December 2018, p. 19.

well as Del Amo Station, which is served by the A Line (Blue). Though these stations are outside City limits, they serve the surrounding community which includes parts of the City.

Transit Supportive Planning: Recommendations and Resources

Metro would like to identify the potential synergies associated with transit-oriented communities, and recommend planning resources to aid in the development of the Plan:

1. Transit Supportive Planning Toolkit: Metro strongly recommends that the City review the Transit Supportive Planning Toolkit which identifies 10 elements of transit-supportive places and, applied collectively, has been shown to reduce vehicle miles traveled by establishing community-scaled density, diverse land use mix, combination of affordable housing, and infrastructure projects for pedestrians, bicyclists, and people of all ages and abilities. This resource is available at https://www.metro.net/projects/tod-toolkit.

2. Land Use: Metro supports development of commercial and residential properties near transit stations and understands that increasing development near stations represents a mutually beneficial opportunity to increase ridership and enhance transportation options for the users of developments.

3. Transit Connections and Access: Metro strongly encourages the City to include policies in the Plan that help facilitate safe and convenient connections for pedestrians, people riding bicycles, and transit users to/from the bus stops and nearby destinations. These policies should guide future capital improvements as well as private development to be approved by the City. Policy topics include:

    a. Walkability: The provision of wide sidewalks, pedestrian lighting, a continuous canopy of shade trees, enhanced crosswalks with ADA-compliant curb ramps, and other amenities along all public street frontages of a development to improve pedestrian safety and comfort to access transit stations and bus stops. Best practices for Complete Streets should be incorporated where possible.

    b. Transfer Activity: Best practices that consider and accommodate transfer activity between bus lines that will occur along the sidewalks and public spaces. Metro has completed the Metro Transfers Design Guide, a best practices document on transit improvements. This can be accessed online at https://www.metro.net/projects/systemwidedesign.

    c. Bicycle Use and Micromobility Devices: The provision of adequate short-term bicycle parking, such as ground-level bicycle racks, and secure, access-controlled, enclosed long-term bicycle parking for residents, employees, and guests. Bicycle parking facilities should be designed with best practices in mind, including highly visible siting, effective surveillance, ease to locate, and equipment installation with preferred spacing dimensions, so bicycle parking can be safely and conveniently accessed. Similar provisions for micro-mobility devices are also encouraged.

    d. First & Last Mile Access: The Plan should address first-last mile connections to transit (particularly to J Line and A Line stations) and is encouraged to support these connections with wayfinding signage inclusive of all modes of transportation. For reference, please review the First Last Mile Strategic Plan, authored by Metro and the Southern California Association of Governments (SCAG), available on-line at: http://media.metro.net/docs/sustainability_path_design_guidelines.pdf

4. Parking: Metro encourages the incorporation of transit-oriented, pedestrian-oriented parking provision strategies such as the reduction or removal of minimum parking requirements and the exploration of shared parking opportunities. These strategies could be pursued to reduce automobile-orientation in design and travel demand.

5. Wayfinding: Any temporary or permanent wayfinding signage with content referencing Metro services or featuring the Metro brand and/or associated graphics (such as Metro Bus pictograms) requires review and approval by Metro Signage and Environmental Graphic Design.

6. Art: Metro encourages the thoughtful integration of art and culture into public spaces and will need to review any proposals for public art and/or placemaking facing a Metro ROW. Please contact Metro Arts & Design staff for additional information.

7. Transit Pass Programs: Metro would like to inform the City of Metro's employer transit pass programs, including the Annual Transit Access Pass (A-TAP), the Employer Pass Program (E-Pass), and Small Employer Pass (SEP) Program. These programs offer efficiencies and group rates that businesses can offer employees as an incentive to utilize public transit. The A-TAP can also be used for residential projects. For more information on these programs, please visit the programs' website at https://www.metro.net/riding/eapp/.

If you have any questions regarding this letter, please contact me by phone at 213-922-2671, by email at DevReview@metro.net, or by mail at the following address:

Metro Development Review
One Gateway Plaza
MS 99-22-1
Los Angeles, CA 90012-2952

Sincerely,

Shine Ling, AICP
Manager, Transit Oriented Communities

Attachments and links:

- Adjacent Development Handbook: https://www.metro.net/projects/devreview/

NATIVE AMERICAN HERITAGE COMMISSION

March 22, 2021

Alvie Betancourt, Planning Manager
City of Carson
701 E Carson Street
Carson, CA 90745

Re: 2001091120, City of Carson General Plan Update Project, Los Angeles County

Dear Mr. Betancourt:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

April 6, 2021

Alvie Betancourt
City of Carson

Via Email to: abetancourt@carsonca.gov

Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Carson 2040 General Plan Update Project, Los Angeles County

Dear Mr. Betancourt:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission. The request form can be found at http://nahc.ca.gov/wp-content/uploads/2015/08/Local-Government-Tribal-Consultation-List-Request-Form-Update.pdf.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA E-MAIL: April 13, 2021

abetancourt@carsonca.gov
Alvie Betancourt, Manager
City of Carson, Planning Department
701 East Carson Street
Carson, California 90745

Recirculated Notice of Preparation of a Draft Program Environmental Impact Report for the City of Carson General Plan Update (Proposed Project)

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. Our comments are recommendations on the analysis of potential air quality impacts from the Proposed Project that should be included in the Draft Program Environmental Impact Report (EIR). Please send a copy of the Draft Program EIR upon its completion and public release directly to South Coast AQMD as copies of the Draft Program EIR submitted to the State Clearinghouse are not forwarded. **In addition, please send all appendices and technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all emission calculation spreadsheets, and air quality modeling and health risk assessment input and output files (not PDF files). Any delays in providing all supporting documentation for our review will require additional review time beyond the end of the comment period.**

CEQA Air Quality Analysis

Staff recommends that the Lead Agency use South Coast AQMD's CEQA Air Quality Handbook and website[1] as guidance when preparing the air quality and greenhouse gas analyses. It is also recommended that the Lead Agency use the CalEEMod[2] land use emissions software, which can estimate pollutant emissions from typical land use development and is the only software model maintained by the California Air Pollution Control Officers Association.

South Coast AQMD has developed both regional and localized significance thresholds. South Coast AQMD staff recommends that the Lead Agency quantify criteria pollutant emissions and compare the emissions to South Coast AQMD's CEQA regional pollutant emissions significance thresholds[3] and localized significance thresholds (LSTs)[4] to determine the Proposed Project's air quality impacts. The localized analysis can be conducted by either using the LST screening tables or performing dispersion modeling.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of

[1] South Coast AQMD's CEQA Handbook and other resources for preparing air quality analyses can be found at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.
[2] CalEEMod is available free of charge at: www.caleemod.com.
[3] South Coast AQMD's CEQA regional pollutant emissions significance thresholds can be found at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.
[4] South Coast AQMD's guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips, and hauling trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers and air pollution control devices), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis. Furthermore, emissions from the overlapping construction and operational activities should be combined and compared to South Coast AQMD's regional air quality CEQA ***operational*** thresholds to determine the level of significance.

If the Proposed Project generates diesel emissions from long-term construction or attracts diesel-fueled vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead Agency perform a mobile source health risk assessment[5].

In the event that implementation of the Proposed Project requires a permit from South Coast AQMD, South Coast AQMD should be identified as a Responsible Agency for the Proposed Project in the Draft Program EIR. The assumptions in the air quality analysis in the Final Program EIR will be the basis for evaluating the permit under CEQA and imposing permit conditions and limits. Questions on permits should be directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385.

The California Air Resources Board's (CARB) *Air Quality and Land Use Handbook: A Community Health Perspective*[6] is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process with additional guidance on strategies to reduce air pollution exposure near high-volume roadways available in CARB's technical advisory[7].

The South Coast AQMD's *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*[8] includes suggested policies that local governments can use in their General Plans or through local planning to prevent or reduce potential air pollution impacts and protect public health. It is recommended that the Lead Agency review this Guidance Document as a tool when making local planning and land use decisions.

Mitigation Measures

In the event that the Proposed Project results in significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized to minimize these impacts. Any impacts resulting from mitigation measures must also be analyzed. Several resources to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project include South Coast AQMD's CEQA Air Quality Handbook[1], South Coast AQMD's Mitigation Monitoring and Reporting Plan for the 2016 Air Quality Management Plan[9], and Southern California Association of

[5] South Coast AQMD's guidance for performing a mobile source health risk assessment can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis.
[6] CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* can be found at: http://www.arb.ca.gov/ch/handbook.pdf.
[7] CARB's technical advisory can be found at: https://www.arb.ca.gov/ch/landuse.htm.
[8] South Coast AQMD. 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*. Available at: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf.
[9] South Coast AQMD's 2016 Air Quality Management Plan can be found at: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf (starting on page 86).

Government's Mitigation Monitoring and Reporting Plan for the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy[10].

South Coast AQMD staff is available to work with the Lead Agency to ensure that air quality, greenhouse gas, and health risk impacts from the Proposed Project are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at lsun@aqmd.gov.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
LAC210323-04
Control Number

[10] Southern California Association of Governments' 2020-2045 RTP/SCS can be found at: https://www.connectsocal.org/Documents/PEIR/certified/Exhibit-A_ConnectSoCal_PEIR.pdf.

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155 South El Molino Avenue
Suite 104
Pasadena, California 91101

VIA E-MAIL ONLY

April 21, 2021

Alvie Betancourt, Planning Manager
City of Carson
701 East Carson Street
Carson, CA 90745
Em: abetancourt@carsonca.gov

RE: Notice of Preparation of an Environmental Impact Report for the City of Carson General Plan Update (SCH No. 2001091120)

Dear Mr. Betancourt,

On behalf of the Southwest Regional Council of Carpenters ("**Carpenters**" or "**SWRCC**"), my Office is submitting these comments on the City of Carson's ("**City**" or "**Lead Agency**") Notice of Preparation of an Environmental Impact Report ("**NOP**") (SCH No. 2001091120) for the City of Carson General Plan Update ("**Project**").

The Southwest Carpenters is a labor union representing 50,000 union carpenters in six states, including California, and has a strong interest in well-ordered land use planning, addressing the environmental impacts of development projects and equitable economic development.

Individual members of the Southwest live, work and recreate in the City and surrounding communities and would be directly affected by the Project's environmental impacts.

Commenter expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearings and proceedings related to this Project. Cal. Gov. Code § 65009(b); Cal. Pub. Res. Code § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

Commenter incorporates by reference all comments raising issues regarding the environmental impact report ("**EIR**") submitted prior to certification of the EIR for the Project. *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal. App. 4th 173, 191

(finding that any party who has objected to the Project's environmental documentation may assert any issue timely raised by other parties).

Moreover, Commenter requests that the Lead Agency provide notice for any and all notices referring or related to the Project issued under the California Environmental Quality Act ("**CEQA**"), Cal Public Resources Code ("**PRC**") § 21000 *et seq*, and the California Planning and Zoning Law ("**Planning and Zoning Law**"), Cal. Gov't Code §§ 65000–65010. California Public Resources Code Sections 21092.2, and 21167(f) and Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

The City should require the Applicant to provide additional community benefits such as requiring local hire and use of a skilled and trained workforce to build the Project. The City should require the use of workers who have graduated from a Joint Labor Management apprenticeship training program approved by the State of California, or have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state approved apprenticeship training program or who are registered apprentices in an apprenticeship training program approved by the State of California.

Community benefits such as local hire and skilled and trained workforce requirements can also be helpful to reduce environmental impacts and improve the positive economic impact of the Project. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips, reduce greenhouse gas emissions and providing localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

> [A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling.

Skilled and trained workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the UC Berkeley Center for Labor Research and Education concluded:

> . . . labor should be considered an investment rather than a cost – and investments in growing, diversifying, and upskilling California's workforce can positively affect returns on climate mitigation efforts. In other words, well trained workers are key to delivering emissions reductions and moving California closer to its climate targets.[1]

Also, the City should require the Project to be built to standards exceeding the current 2019 California Green Building Code and 2020 County of Los Angeles Green Building Standards Code to mitigate the Project's environmental impacts and to advance progress towards the State of California's environmental goals.

I. THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

A. Background Concerning the California Environmental Quality Act

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 California Code of Regulations ("**CCR**" or "**CEQA Guidelines**") § 15002(a)(1).[2] "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made. Thus, the EIR 'protects not only the environment but also informed self-government.' [Citation.]" *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological

[1] California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, *available at* https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf

[2] The CEQA Guidelines, codified in Title 14 of the California Code of Regulations, section 150000 et seq, are regulatory guidelines promulgated by the state Natural Resources Agency for the implementation of CEQA. (Cal. Pub. Res. Code § 21083.) The CEQA Guidelines are given "great weight in interpreting CEQA except when . . . clearly unauthorized or erroneous." *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal. 4th 204, 217.

points of no return." *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 (*"Berkeley Jets")*; *County of Inyo v. Yorty* (1973) 32 Cal. App. 3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. CEQA Guidelines § 15002(a)(2) and (3). *See also, Berkeley Jets,* 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal. 3d 376, 400. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines § 15002(a)(2). If the project has a significant effect on the environment, the agency may approve the project only upon finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in CEQA section 21081. CEQA Guidelines § 15092(b)(2)(A–B).

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position.' A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added) (quoting *Laurel Heights,* 47 Cal. 3d at 391, 409 fn. 12). Drawing this line and determining whether the EIR complies with CEQA's information disclosure requirements presents a question of law subject to independent review by the courts. (*Sierra Club v. Cnty. of Fresno* (2018) 6 Cal. 5th 502, 515; *Madera Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102, 131.) As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

> A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.

The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. The EIR's function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the

public is assured those consequences have been considered. For the EIR to serve these goals it must present information so that the foreseeable impacts of pursuing the project can be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made. *Communities for a Better Environment v. Richmond* (2010) 184 Cal. App. 4th 70, 80 (quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 449–450).

B. The NOP Fails to Provide All Required Information

Notice of Preparations or NOPs must provide responsible and trustee agencies with sufficient information concerning the project and its potential environmental effects to enable them to make a "meaningful response." CEQA Guidelines § 15082(a)(1). CEQA Guidelines section 15082(a)(1) provides that at a minimum, the NOP must contain:

- A description of the project;
- The location of the project by street address and cross street (for a project in an urban area) or by attaching a specific map; and
- The project's probable environmental effects.

However, the City's NOP merely provides the general description of the Project. While the NOP provides a list of "issues" the EIR will address in detail, the NOP does not provide what the Project's probable environmental effects would be in any detail.

Moreover, the NOP fails to list all "each responsible agency, the Office of Planning and Research, and those public agencies having jurisdiction by law over natural resources affected by the project" as required by CEQA. PRC § 21080.4(a). By failing to list any responble agency or indicating what agencies the NOP was sent to, the NOP fails to provide the minimum required information under CEQA.

C. Due to the COVID-19 Crisis, the City Must Adopt a Mandatory Finding of Significance that the Project May Cause a Substantial Adverse Effect on Human Beings and Mitigate COVID-19 Impacts

CEQA requires that an agency make a finding of significance when a Project may cause a significant adverse effect on human beings. PRC § 21083(b)(3); CEQA Guidelines § 15065(a)(4).

Public health risks related to construction work requires a mandatory finding of significance under CEQA. Construction work has been defined as a Lower to High-risk activity for COVID-19 spread by the Occupations Safety and Health Administration. Recently, several construction sites have been identified as sources of community spread of COVID-19.[3]

SWRCC recommends that the Lead Agency adopt additional CEQA mitigation measures to mitigate public health risks from the Project's construction activities. SWRCC requests that the Lead Agency require safe on-site construction work practices as well as training and certification for any construction workers on the Project Site.

In particular, based upon SWRCC's experience with safe construction site work practices, SWRCC recommends that the Lead Agency require that while construction activities are being conducted at the Project Site:

Construction Site Design:

- The Project Site will be limited to two controlled entry points.
- Entry points will have temperature screening technicians taking temperature readings when the entry point is open.
- The Temperature Screening Site Plan shows details regarding access to the Project Site and Project Site logistics for conducting temperature screening.
- A 48-hour advance notice will be provided to all trades prior to the first day of temperature screening.
- The perimeter fence directly adjacent to the entry points will be clearly marked indicating the appropriate 6-foot social distancing position for when you approach the screening area. Please reference the Apex temperature screening site map for additional details.

[3] Santa Clara County Public Health (June 12, 2020) COVID-19 CASES AT CONSTRUCTION SITES HIGHLIGHT NEED FOR CONTINUED VIGILANCE IN SECTORS THAT HAVE REOPENED, *available at* https://www.sccgov.org/sites/covid19/Pages/press-release-06-12-2020-cases-at-construction-sites.aspx.

- There will be clear signage posted at the project site directing you through temperature screening.
- Provide hand washing stations throughout the construction site.

Testing Procedures:

- The temperature screening being used are non-contact devices.
- Temperature readings will not be recorded.
- Personnel will be screened upon entering the testing center and should only take 1-2 seconds per individual.
- Hard hats, head coverings, sweat, dirt, sunscreen or any other cosmetics must be removed on the forehead before temperature screening.
- Anyone who refuses to submit to a temperature screening or does not answer the health screening questions will be refused access to the Project Site.
- Screening will be performed at both entrances from 5:30 am to 7:30 am.; main gate [ZONE 1] and personnel gate [ZONE 2]
- After 7:30 am only the main gate entrance [ZONE 1] will continue to be used for temperature testing for anybody gaining entry to the project site such as returning personnel, deliveries, and visitors.
- If the digital thermometer displays a temperature reading above 100.0 degrees Fahrenheit, a second reading will be taken to verify an accurate reading.
- If the second reading confirms an elevated temperature, DHS will instruct the individual that he/she will not be allowed to enter the Project Site. DHS will also instruct the individual to promptly notify his/her supervisor and his/her

human resources (HR) representative and provide them with a copy of Annex A.

Planning

- Require the development of an Infectious Disease Preparedness and Response Plan that will include basic infection prevention measures (requiring the use of personal protection equipment), policies and procedures for prompt identification and isolation of sick individuals, social distancing (prohibiting gatherings of no more than 10 people including all-hands meetings and all-hands lunches) communication and training and workplace controls that meet standards that may be promulgated by the Center for Disease Control, Occupational Safety and Health Administration, Cal/OSHA, California Department of Public Health or applicable local public health agencies.[4]

The United Brotherhood of Carpenters and Carpenters International Training Fund has developed COVID-19 Training and Certification to ensure that Carpenter union members and apprentices conduct safe work practices. The Agency should require that all construction workers undergo COVID-19 Training and Certification before being allowed to conduct construction activities at the Project Site.

If the City has any questions or concerns, feel free to contact my Office.

Sincerely,

Mitchell M. Tsai
Attorneys for Southwest Regional Council of Carpenters

[4] *See also* The Center for Construction Research and Training, North America's Building Trades Unions (April 27 2020) NABTU and CPWR COVIC-19 Standards for U.S Constructions Sites, *available at* https://www.cpwr.com/sites/default/files/NABTU_CPWR_Standards_COVID-19.pdf; Los Angeles County Department of Public Works (2020) Guidelines for Construction Sites During COVID-19 Pandemic, *available at* https://dpw.lacounty.gov/building-and-safety/docs/pw_guidelines-construction-sites.pdf.

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Attached:

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling (Exhibit A);

Air Quality and GHG Expert Paul Rosenfeld CV (Exhibit B); and

Air Quality and GHG Expert Matt Hagemann CV (Exhibit C).

EXHIBIT A

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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March 8, 2021

Mitchell M. Tsai
155 South El Molino, Suite 104
Pasadena, CA 91101

Subject: Local Hire Requirements and Considerations for Greenhouse Gas Modeling

Dear Mr. Tsai,

Soil Water Air Protection Enterprise ("SWAPE") is pleased to provide the following draft technical report explaining the significance of worker trips required for construction of land use development projects with respect to the estimation of greenhouse gas ("GHG") emissions. The report will also discuss the potential for local hire requirements to reduce the length of worker trips, and consequently, reduced or mitigate the potential GHG impacts.

Worker Trips and Greenhouse Gas Calculations

The California Emissions Estimator Model ("CalEEMod") is a "statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects."[1] CalEEMod quantifies construction-related emissions associated with land use projects resulting from off-road construction equipment; on-road mobile equipment associated with workers, vendors, and hauling; fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads; and architectural coating activities; and paving.[2]

The number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[3]

[1] "California Emissions Estimator Model." CAPCOA, 2017, *available at:* http://www.aqmd.gov/caleemod/home.
[2] "California Emissions Estimator Model." CAPCOA, 2017, *available at:* http://www.aqmd.gov/caleemod/home.
[3] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Specifically, the number and length of vehicle trips is utilized to estimate the vehicle miles travelled ("VMT") associated with construction. Then, utilizing vehicle-class specific EMFAC 2014 emission factors, CalEEMod calculates the vehicle exhaust, evaporative, and dust emissions resulting from construction-related VMT, including personal vehicles for worker commuting.[4]

Specifically, in order to calculate VMT, CalEEMod multiplies the average daily trip rate by the average overall trip length (see excerpt below):

> "$VMT_d = \Sigma(\text{Average Daily Trip Rate}_i * \text{Average Overall Trip Length}_i)_n$
>
> Where:
>
> n = Number of land uses being modeled."[5]

Furthermore, to calculate the on-road emissions associated with worker trips, CalEEMod utilizes the following equation (see excerpt below):

> "$\text{Emissions}_{pollutant} = VMT * EF_{running,pollutant}$
>
> Where:
>
> $\text{Emissions}_{pollutant}$ = emissions from vehicle running for each pollutant
>
> VMT = vehicle miles traveled
>
> $EF_{running,pollutant}$ = emission factor for running emissions."[6]

Thus, there is a direct relationship between trip length and VMT, as well as a direct relationship between VMT and vehicle running emissions. In other words, when the trip length is increased, the VMT and vehicle running emissions increase as a result. Thus, vehicle running emissions can be reduced by decreasing the average overall trip length, by way of a local hire requirement or otherwise.

Default Worker Trip Parameters and Potential Local Hire Requirements

As previously discussed, the number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[7] In order to understand how local hire requirements and associated worker trip length reductions impact GHG emissions calculations, it is important to consider the CalEEMod default worker trip parameters. CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence.[8] The default number of construction-related worker trips is calculated by multiplying the

[4] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14-15.
[5] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 23.
[6] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.
[7] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.
[8] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 1, 9.

number of pieces of equipment for all phases by 1.25, with the exception of worker trips required for the building construction and architectural coating phases.[9] Furthermore, the worker trip vehicle class is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively."[10] Finally, the default worker trip length is consistent with the length of the operational home-to-work vehicle trips.[11] The operational home-to-work vehicle trip lengths are:

> "[B]ased on the *location* and *urbanization* selected on the project characteristic screen. These values were *supplied by the air districts or use a default average for the state*. Each district (or county) also assigns trip lengths for urban and rural settings" (emphasis added). [12]

Thus, the default worker trip length is based on the location and urbanization level selected by the User when modeling emissions. The below table shows the CalEEMod default rural and urban worker trip lengths by air basin (see excerpt below and Attachment A).[13]

Worker Trip Length by Air Basin		
Air Basin	**Rural (miles)**	**Urban (miles)**
Great Basin Valleys	16.8	10.8
Lake County	16.8	10.8
Lake Tahoe	16.8	10.8
Mojave Desert	16.8	10.8
Mountain Counties	16.8	10.8
North Central Coast	17.1	12.3
North Coast	16.8	10.8
Northeast Plateau	16.8	10.8
Sacramento Valley	16.8	10.8
Salton Sea	14.6	11
San Diego	16.8	10.8
San Francisco Bay Area	10.8	10.8
San Joaquin Valley	16.8	10.8
South Central Coast	16.8	10.8
South Coast	19.8	14.7
Average	**16.47**	**11.17**
Minimum	**10.80**	**10.80**
Maximum	**19.80**	**14.70**
Range	**9.00**	**3.90**

[9] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.
[10] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.
[11] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14.
[12] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 21.
[13] "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-84 – D-86.

As demonstrated above, default rural worker trip lengths for air basins in California vary from 10.8- to 19.8-miles, with an average of 16.47 miles. Furthermore, default urban worker trip lengths vary from 10.8- to 14.7-miles, with an average of 11.17 miles. Thus, while default worker trip lengths vary by location, default urban worker trip lengths tend to be shorter in length. Based on these trends evident in the CalEEMod default worker trip lengths, we can reasonably assume that the efficacy of a local hire requirement is especially dependent upon the urbanization of the project site, as well as the project location.

Practical Application of a Local Hire Requirement and Associated Impact

To provide an example of the potential impact of a local hire provision on construction-related GHG emissions, we estimated the significance of a local hire provision for the Village South Specific Plan ("Project") located in the City of Claremont ("City"). The Project proposed to construct 1,000 residential units, 100,000-SF of retail space, 45,000-SF of office space, as well as a 50-room hotel, on the 24-acre site. The Project location is classified as Urban and lies within the Los Angeles-South Coast County. As a result, the Project has a default worker trip length of 14.7 miles.[14] In an effort to evaluate the potential for a local hire provision to reduce the Project's construction-related GHG emissions, we prepared an updated model, reducing all worker trip lengths to 10 miles (see Attachment B). Our analysis estimates that if a local hire provision with a 10-mile radius were to be implemented, the GHG emissions associated with Project construction would decrease by approximately 17% (see table below and Attachment C).

Local Hire Provision Net Change	
Without Local Hire Provision	
Total Construction GHG Emissions (MT CO_2e)	3,623
Amortized Construction GHG Emissions (MT CO_2e/year)	120.77
With Local Hire Provision	
Total Construction GHG Emissions (MT CO2e)	3,024
Amortized Construction GHG Emissions (MT CO_2e/year)	100.80
% Decrease in Construction-related GHG Emissions	***17%***

As demonstrated above, by implementing a local hire provision requiring 10 mile worker trip lengths, the Project could reduce potential GHG emissions associated with construction worker trips. More broadly, any local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

This serves as an example of the potential impacts of local hire requirements on estimated project-level GHG emissions, though it does not indicate that local hire requirements would result in reduced construction-related GHG emission for all projects. As previously described, the significance of a local hire requirement depends on the worker trip length enforced and the default worker trip length for the project's urbanization level and location.

[14] "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-85.

Disclaimer

SWAPE has received limited discovery. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Paul E. Rosenfeld, Ph.D.

EXHIBIT B

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

SOIL WATER AIR PROTECTION ENTERPRISE
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Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial sources.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

Publications:

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Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

Deposition and/or Trial Testimony:

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case: No 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al.,, et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward DeRuyter, Defendants
Rosenfeld Deposition: July 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the United States District Court Western District of Oklahoma
Tommy McCarty, et al., Plaintiffs, v. Oklahoma City Landfill, LLC d/b/a Southeast Oklahoma City Landfill, et al. Defendants.
Case No. 5:12-cv-01152-C
Rosenfeld Deposition: July 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court of Southern District of Texas Galveston Division
Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and on behalf of those similarly situated, *Plaintiffs,* vs. BP Products North America, Inc., *Defendant.*
Case 3:10-cv-00622
Rosenfeld Deposition: February 2012
Rosenfeld Trial: April 2013

In the Circuit Court of Baltimore County Maryland
Philip E. Cvach, II et al., *Plaintiffs* vs. Two Farms, Inc. d/b/a Royal Farms, Defendants
Case Number: 03-C-12-012487 OT
Rosenfeld Deposition: September 2013

EXHIBIT C

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

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Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

Appendix B
Air Quality Data

ESA

Carson General Plan Update
Operational & Existing Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Los Angeles
Air District	South Coast
Climate Zone	11
Operational Year	2040
Utility Provider	Southern California Edison

CO2e

	2040	2016
(lbs CO2e/MWh)	100.2887325	631.8190151
% Reduction	87%	16.00%

Note: CH4 and N2O are set to 0 in CalEEMod as CO2 is set to represent CO2e values)

Potential 2040 Planning Area Buildout

	Existing		Net New		2040 Total	
	City Limits	SOI	City Limits	SOI	City Limits	SOI
Non-Residential Development (sf)						
Commercial	5,338,000	65,000	3,044,000	194,000	8,382,000	259,000
Office	4,127,000	825,000	2,098,000	87,000	6,225,000	912,000
Industrial	14,831,000	9,811,000	5,817,000	291,000	20,648,000	10,102,000
Total	**24,296,000**	**10,701,000**	**10,959,000**	**572,000**	**35,255,000**	**11,273,000**
Housing Units	**26,710**	**1,700**	**13,690**	**40**	**40,400**	**1,740**
Subtotal	**28,410**		**13,730**		**42,140**	
Single Family Residential	**22,540**		**40**		**22,580**	
Single Family Attached	**2,410**		**200**		**2,610**	
Multifamily	**3,460**		**13,490**		**16,950**	
Total	**28,410**		**13,730**		**42,140**	
Population	**93,100**	**5,000**	**43,500**	**100**	**136,600**	**5,100**
Jobs	**58,600**	**19,000**	**18,000**	**900**	**76,600**	**19,900**

NOTES: sf = square feet; SOI = Sphere of Influence

Dyett & Bhatia, 2021

Trip Generation:

Scenario		2016	2040 No Project	2040 Plus Project
Total Volume		12,377,418	11,706,639	12,252,255
Total VMT		3,688,949	3,460,815	3,612,495
VMT by Vehicle Occupancy	DA			
	SR2			
	SR3			
VMT by	Auto	3,392,242	3,040,274	3,174,281
	Light-heavy Truck	54,979	67,879	69,458

Vehicle Type				
	Medium-heavy Truck	48,581	57,992	59,363
	Heavy-heavy Truck	193,147	294,670	309,393

Source VMT_by_Link_Carson

Area Source

wood stoves	Not allowed.

fireplaces	default Existing	Defalut	2040
wood	11.27	62.5	0
gas	119.59	1062.5	129.07
none	22.54	125	24.33
		1250	153.4

Energy Use

Existing	Defaults 2008 Title 24 Used
Project	Default 2019 Title 24 Used

	T24 Electric		Lighting		T24 Natural Gas	
	Default	**2019**	**Default**	**2019**	**Default**	**2019**
Apartment Low Rise	28.76	26.7468	810.36	810.36	8848.67	8229.2631
Condo/Townhouse	39.19	27.433	1001.1	1001.1	12162.6	8513.82
Gen Heavy Industry	2.01	1.407	3.1	3.1	13.51	9.457
General Office Building	4.11	2.877	3.77	3.77	9.92	6.944
Single Family Building	44.29	31.003	1608.84	1608.84	20534.71	14374.297
Strip Mall	3.58	2.506	6.26	6.26	1.14	0.798

CalEEMod currently uses 2016 Title 24 efficiency standards. The project will be built post 2019 therefore as a conservative estimate of T24 efficiencies required, the emission factors are updated using the following reductions to account for the inclusion of 2019 Title 24 standards.

	T24 Electricity	**Lighting**	**T24 NG**
Residential 2019	7%	0%	7%
Non-Residential 2019	30%	0%	30%

Water Use

	gallons/day/person	PPd	gallons/year
Existing	157.0	15,401,700	5,621,620,500
Increase	157.0	6,800,000	2,482,000,000
2040		22,201,700	8,103,620,500

	Defaults	%	2016	2040		
Apartment Low Rise	225432928	4%	197718764	285013517	1977187.6	2850135.167
Condo/Townhouse	157021201	2%	137717405	198520975	1377174	1985209.751
Gen Heavy Industry	3429668750	54%	3008033794	4336109903	30080338	43361099.03
General Office Building	733507178	11%	643331628	927368784	6433316.3	9273687.84
Single Family Building	1468571737	23%	1288029176	1856706556	12880292	18567065.56
Strip Mall	395399119	6%	346789734	499900766	3467897.3	4999007.66

Solid Waste Generation

	PPD/person	PPd	tons/day	tons/year
Existing	11.4	1,118,340	559	204,097
Increase	11.4	497,040	248.52	90,710
2040		1,615,380	808	294,807

	Defaults	%	2016	2040		
Apartment Low Rise	1591.6	3%	5703	8237	57.025752	82.37053025
Condo/Townhouse	1108.6	2%	3972	5737	39.720249	57.37369304
Gen Heavy Industry	18390.44	32%	65891	95177	658.91472	951.7657039
General Office Building	3838.11	7%	13752	19863	137.5164	198.6348051
Single Family Building	26430.24	46%	94697	136785	946.97431	1367.851774
Strip Mall	5604.9	10%	20082	29007	200.81907	290.0719936

Carson General Plan
Air Quality and GHG Assessment
Existing 2016 AQ Emissions

Maximum Regional Operational Emissions (Existing 2016 - Summer) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	7,723	446	8,956	13	921	921
Energy	37	321	179	2	25	25
Mobile	2,209	5,749	22,895	37	2,728	744
Total Project On-Site and Off-Site Emissions	9,969	6,516	32,030	52	3,675	1,691

Maximum Regional Operational Emissions (Existing 2016 - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	7,723	446	8,956	13	921	921
Energy	37	321	179	2	25	25
Mobile	2,209	5,749	22,895	37	2,728	744
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Total Project On-Site and Off-Site Emissions	9,969	6,516	32,030	52	3,675	1,691

Carson General Plan
Air Quality and GHG Assessment
Carson 2040 New Development AQ Emissions

Maximum Regional Operational Emissions (Carson 2040 New Development - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	588	17	1,130	0	7	7
Energy	8	72	41	0	6	6

Maximum Regional Operational Emissions (Carson 2040 New Development - Winter + Existing 2040 - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	8310.9	462.4	10086.3	12.6	928.1	928.1
Energy	45.1	393.2	219.5	2.5	31.2	31.2
Mobile	684.0	1515.0	6513.0	27.0	2623.0	671.0
Total Project On-Site and Off-Site Emissions	**9040**	**2371**	**16819**	**42**	**3582.23**	**1630**

Maximum Regional Operational Emissions (Carson 2040 New Development - Summer) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	587.9	16.6	1130.5	0.1	6.6	6.6
Energy	8.3	72.1	40.8	0.5	5.7	5.7

Maximum Regional Operational Emissions (Carson 2040 New Development - Summer + Existing 2040 - Summer) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	8310.9	462.4	10086.3	12.6	928.1	928.1
Energy	45.1	393.2	219.5	2.5	31.2	31.2
Mobile	684.0	1515.0	6513.0	27.0	2623.0	671.0
Total Project On-Site and Off-Site Emissions	**9040**	**2371**	**16819**	**42**	**3582.23**	**1630**
Existing On-Site and Off-Site Emissions	9969	6516	32030	52	3675	1691
Net Change	**-929**	**-4145**	**-15211**	**-9**	**-92.71**	**-61**

Carson General Plan
Air Quality and GHG Assessment
Carson Existing GHG Emissions

Maximum Regional Operational GHG Emissions (Existing 2016)

Source	$MTCO_2e/yr$
Area	6,621
Energy	273,874
Solid Waste	17,597
Water Conveyance and Wastewater Treatment	51,183
Mobile	648,319
Total	**997,594**

Maximum Regional Operational GHG Emissions (Existing 2040)

Source	$MTCO_2e/yr$
Area	6,620
Energy	99,824
Solid Waste	17,597
Water Conveyance and Wastewater Treatment	18,235
Mobile	452,692
Total	**594,968**

Carson General Plan
Air Quality and GHG Assessment
Carson New Development GHG Emissions

Maximum Regional Operational GHG Emissions (New Development 2040)

Source	$MTCO_2e/yr$
Area	289
Energy	24,177
Solid Waste	2,432
Water Conveyance and Wastewater Treatment	6,214
Mobile	20,233
Total	53,346

Maximum Regional Operational GHG Emissions (Existing 2040 + New Development 2040)

Source	CO2e MT/yr
Area	6,910
Energy	124,001
Solid Waste	20,029
Water Conveyance and Wastewater Treatment	24,449
Mobile	472,925
Total	**648,314**
Existing (2016)	997,594
Project Net Total GHG Emissions	**-349,281**

Carson General Plan
Air Quality and GHG Assessment
Operational Mobile Emissions

		Criteria Pollutant Emission Factors (lb/mile)										GHG Emissions (metric tons/mile)				Criteria Pollutant Emissions (pounds/day)								GHG Emissions (metric tons/year)			
Year	Weekday Daily VMT	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Tota	CO2	CH4	N2O	CO2e	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Total	CO2	CH4	N2O	CO2e
																										1	*25*	*298*	
2016	3,392,242	5.87E-04	5.79E-04	6.14E-03	8.23E-06	6.61E-04	4.44E-05	7.05E-04	1.62E-04	1.71E-05	1.79E-04	3.77E-04	2.72E-08	1.90E-08	3.84E-04	1,992.37	1,965.35	20,828.79	27.93	2,242.46	150.57	2,393.03	550.42	58.02	608.44	467,389.92	33.63	23.55	475,248.52
2016	54,979	8.64E-04	3.56E-03	6.07E-03	1.54E-05	6.61E-04	2.36E-04	8.97E-04	1.62E-04	1.04E-04	2.66E-04	7.15E-04	2.93E-08	5.84E-08	7.33E-04	47.49	195.75	333.93	0.85	36.34	12.98	49.33	8.92	5.71	14.63	14,355.17	0.59	1.17	14,718.80
2016	48,581	8.78E-04	1.19E-02	7.02E-03	2.85E-05	6.61E-04	4.14E-04	1.08E-03	1.62E-04	3.19E-04	4.81E-04	1.35E-03	3.30E-08	1.55E-07	1.40E-03	42.63	579.85	340.96	1.38	32.11	20.12	52.23	7.88	15.49	23.38	23,907.82	0.59	2.75	24,742.88
2016	193,147	6.56E-04	1.56E-02	7.21E-03	3.38E-05	6.61E-04	5.46E-04	1.21E-03	1.62E-04	3.45E-04	5.07E-04	1.80E-03	3.74E-07	2.83E-07	1.90E-03	126.65	3,008.34	1,391.70	6.53	127.68	105.50	233.18	31.34	66.63	97.97	127,002.41	26.35	19.96	133,609.00
																2,209	**5,749**	**22,895**	**37**			**2,728**			**744**				**648,319**
2040	3,040,274	2.00E-04	1.02E-04	1.75E-03	5.87E-06	6.61E-04	3.95E-05	7.01E-04	1.62E-04	1.30E-05	1.75E-04	2.69E-04	6.58E-09	6.65E-09	2.72E-04	609.20	311.56	5,316.97	17.85	2,009.79	120.02	2,129.81	493.31	39.56	532.88	299,026.64	7.30	7.37	301,406.67
2040	67,879	1.73E-04	3.43E-04	1.52E-03	7.04E-06	6.61E-04	1.76E-04	8.37E-04	1.62E-04	6.56E-05	2.28E-04	3.29E-04	4.64E-09	3.00E-08	3.38E-04	11.76	23.31	102.84	0.48	44.87	11.93	56.80	11.01	4.45	15.47	8,157.55	0.12	0.74	8,381.60
2040	57,992	6.50E-05	1.13E-03	7.36E-04	1.39E-05	6.61E-04	1.08E-04	7.69E-04	1.62E-04	3.82E-05	2.01E-04	6.69E-04	1.23E-08	8.59E-08	6.94E-04	3.77	65.74	42.68	0.80	38.34	6.28	44.61	9.41	2.22	11.63	14,150.21	0.26	1.82	14,698.48
2040	294,670	1.04E-04	3.55E-03	2.63E-03	2.24E-05	6.61E-04	2.93E-04	9.54E-04	1.62E-04	1.19E-04	2.81E-04	1.14E-03	8.58E-08	1.80E-07	1.19E-03	30.56	1,046.52	773.84	6.59	194.79	86.22	281.01	47.81	35.02	82.84	122,194.91	9.23	19.39	128,204.75
																655	**1,447**	**6,236**	**26**			**2,512**			**643**				**452,692**
2040	3,174,281	2.00E-04	1.02E-04	1.75E-03	5.87E-06	6.61E-04	3.95E-05	7.01E-04	1.62E-04	1.30E-05	1.75E-04	2.69E-04	6.58E-09	6.65E-09	2.72E-04	636.05	325.29	5,551.32	18.64	2,098.38	125.31	2,223.69	515.06	41.31	556.36	312,206.91	7.62	7.70	314,691.85
2040	69,458	1.73E-04	3.43E-04	1.52E-03	7.04E-06	6.61E-04	1.76E-04	8.37E-04	1.62E-04	6.56E-05	2.28E-04	3.29E-04	4.64E-09	3.00E-08	3.38E-04	12.03	23.86	105.24	0.49	45.92	12.20	58.12	11.27	4.56	15.83	8,347.29	0.12	0.76	8,576.55
2040	59,363	6.50E-05	1.13E-03	7.36E-04	1.39E-05	6.61E-04	1.08E-04	7.69E-04	1.62E-04	3.82E-05	2.01E-04	6.69E-04	1.23E-08	8.59E-08	6.94E-04	3.86	67.29	43.69	0.82	39.24	6.43	45.67	9.63	2.27	11.90	14,484.74	0.27	1.86	15,045.97
2040	309,393	1.04E-04	3.55E-03	2.63E-03	2.24E-05	6.61E-04	2.93E-04	9.54E-04	1.62E-04	1.19E-04	2.81E-04	1.14E-03	8.58E-08	1.80E-07	1.19E-03	32.09	1,098.81	812.50	6.92	204.53	90.52	295.05	50.20	36.77	86.98	128,300.45	9.69	20.36	134,610.56
																684	**1,515**	**6,513**	**27**			**2,623**			**671**				**472,925**

Source: EMFAC2021; Fehr & Peers, 2021 (VMT data)

Carson General Plan
Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ =	Paved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
sL =	road surface silt loading (g/m^2)
W =	average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
$EF_{Dust,P}$	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k\ (\ s / 12)^{1} \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C)$

Where:

$EF_{Dust,U}$ =	Unpaved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
s =	surface material silt content (%)
Sp =	mean vehicle speed (mph)
M =	surface material moisture content (%)
C =	Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
$EF_{Dust,U}$	5.20E+00	5.19E-01

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).

USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

ESA, 2020.

Appendix C
Energy Data

ESA

Carson General Plan
Operational Energy Demand

Electricity	kWh/yr	MWh/yr
Project		
Apartments Low Rise	666,186	666
Condo/Townhouse	116,040	116
General Heavy Industry	4,518,940	4,519
General Office Building	1,027,810	1,028
Single Family Housing	1,618,384	1,618
Strip Mall	1,285,526	1,286
Project Total Building Energy	**9,232,885**	**9,233**
Project Total	**9,232,885**	**9,233**
Total (including water, see below)	**11,142,512**	**11,143**

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Electricity	MWh/yr (Supplied)	MWh/yr (Sales)
Total SCE, 2019	85,399,000	108,000,000
Project Annual	11,143	
Existing Annual	8,623	
Net Project Annual	2,520	
Percent Net Project of SCE	0.0030%	0.002%

Source: Southern California Edison 2020 Annual Report. https://docs.cpuc.ca.gov/PublishedDocs/SupDc

Water	Mgal/yr	MWh/yr
Project		
Apartments Low Rise	18.0	234.45
Condo/Townhouse	2.8	36.10
General Heavy Industry	71.1	925.92
General Office Building	20.5	266.40
Single Family Housing	24.0	312.33
Strip Mall	10.3	134.42
Project Total	**146.657**	**1,909.63**

Electricity Intensity Factors	kWh/Mgal
Electricity Factor - Supply	9,727
Electricity Factor - Treat	111
Electricity Factor - Distribute	1,272
Electricity Factor - Wastewater Treatment	1,911

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.
Water Demand based on Project Water supply Assessment
Sewage Facilities Charge, Sewage Generation Factor for Residential and Commercial Categories, 2012.

Natural Gas	kBtu/yr	cubic foot (cf)
Project		
Apartments Low Rise	2,338,497	2,259,417
Condo/Townhouse	474,704	458,651
General Heavy Industry	3,695,195	3,570,237
General Office Building	841,303	812,853
Single Family Housing	7,774,686	7,511,774
Strip Mall	151,114	146,004
Mobile Sources	46,380	44,812
Total	**15,321,880**	**14,803,749**

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.
Conversion factor of 1,035 Btu per cubic foot based on United States Energy Information Administration data
(see: USEIA, Natural Gas, Heat Content of Natural Gas Consumed, February 28, 2018,
https://www.eia.gov/dnav/ng/ng_cons_heat_a_EPG0_VGTH_btucf_a.htm. Accessed March 2020.)

Natural Gas	million cubic foot (cf)
SoCalGas 2020	898,630
Project Annual	14.804
Existing Annual	12.114
Net Project Annual	2.69
Percent Net Project of SoCalGas	0.0003%

Source: California Gas and Electric Utilities, 2020 California Gas
Report, p. 145,2020.

Carson General Plan
Operational Energy Demand

Electricity	kWh/yr	MWh/yr
Project		
Apartments Low Rise	124,983	125
Condo/Townhouse	106,369	106
General Heavy Industry	3,755,440	3,755
General Office Building	754,685	755
Single Family Housing	1,615,260	1,615
Strip Mall	862,319	862
Project Total Building Energy	**7,219,056**	**7,219**
Project Total	**7,219,056**	**7,219**
Total (including water, see below)	**8,622,918**	**8,623**

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Water	Mgal/yr	MWh/yr
Project		
Apartments Low Rise	3.7	47.86
Condo/Townhouse	2.6	33.34
General Heavy Industry	57.0	742.00
General Office Building	14.2	184.84
Single Family Housing	23.9	311.78
Strip Mall	6.5	84.05
Project Total	**107.815**	**1,403.86**

Electricity Intensity Factors	kWh/Mgal
Electricity Factor - Supply	9,727
Electricity Factor - Treat	111
Electricity Factor - Distribute	1,272
Electricity Factor - Wastewater Treatment	1,911

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Water Demand based on Project Water supply Assessment

Sewage Facilities Charge, Sewage Generation Factor for Residential and Commercial Categories, 2012.

Natural Gas	kBtu/yr	cubic foot (cf)
Project		
Apartments Low Rise	493,107	476,432
Condo/Townhouse	440,717	425,814
General Heavy Industry	3,065,460	2,961,797
General Office Building	616,029	595,197
Single Family Housing	7,764,540	7,501,971
Strip Mall	98,335	95,009
Mobile Sources	59,658	57,641
Total	**12,537,846**	**12,113,861**

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Conversion factor of 1,035 Btu per cubic foot based on United States Energy Information Administration data (see: USEIA, Natural Gas, Heat Content of Natural Gas Consumed, February 28, 2018, https://www.eia.gov/dnav/ng/ng_cons_heat_a_EPG0_VGTH_btucf_a.htm. Accessed March 2020.)

Electricity	MWh/yr (Supplied)	MWh/yr (Sales)
Total SCE, 2019	84,654,000	108,000,000
Project Annual	8,623	
Net Project Annual	8,623	
Percent Net Project of SCE	0.0102%	0.008%

Source: Southern California Edison 2019 Annual Report. https://docs.cpuc.ca.gov/PublishedDocs/SupD

12,056,220

Natural Gas	million cubic foot (cf)
SoCalGas 2025	854,830
Project Annual	12.114
Net Project Annual	12.11
Percent Net Project of SoCalGas	0.0014%

Source: California Gas and Electric Utilities, 2020 California Gas Report, p. 145,2020.

Carson General Plan
Project Energy Analysis
Fuel Usage from VMT

Annual VMT (Traffic Study)[4]: 1,318,560,659 miles/year

Fuel Type:[1]	Gasoline	Diesel	Electricity	Natural Gas	Plug-in Hybrid
Percent:	85.1%	3.3%	8.6%	0.1%	2.8%
Miles per Gallon Fuel:	28.4	9.5	-	5.8	65.4
Annual VMT by Fuel Type (miles):	1,121,712,464	43,792,470	113,915,049	1,858,296	37,282,380
Annual Fuel Usage (gallons):	39,504,586	4,615,602	-	46,380	570,014

	Los Angeles County Fuel Consumption [3]	
	Gasoline	Diesel
Los Angeles County:	2,770,000,000	610,204,082
Mobile	40,074,600	4,615,602
Project Total	40,074,600	4,615,602
Existing Total	59,511,413	5,047,480
Net Project Total	(19,436,813)	(431,878)
Percent Net Project of Los Angeles County:	-0.702%	-0.071%

Notes:

1. California Air Resources Board, EMFAC2021 (LA County; Annual; 2024', Aggregate Fleet).
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.
3. California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at: https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed May 2021. Diesel is adjusted to account for retail (48%) and non-retail (52%) diesel sales.

Carson General Plan
Project Energy Analysis
Fuel Usage from VMT

Annual VMT (Traffic Study)[4]: 1,346,466,325 miles/year

Fuel Type:[1]	Gasoline	Diesel	Electricity	Natural Gas	Plug-in Hybrid
Percent:	96.0%	3.0%	0.5%	0.1%	0.4%
Miles per Gallon Fuel:	21.8	7.9	-	3.8	50.4
Annual VMT by Fuel Type (miles):	1,292,728,211	40,028,543	6,473,037	1,552,761	5,683,772
Annual Fuel Usage (gallons):	59,398,626	5,047,480	-	59,658	112,787

	Los Angeles County Fuel Consumption [3]	
	Gasoline	Diesel
Los Angeles County:	2,770,000,000	610,204,082
Mobile	59,511,413	5,047,480
Project Total	59,511,413	5,047,480
Existing Total	-	-
Net Project Total	59,511,413	5,047,480
Percent Net Project of Los Angeles County:	2.148%	0.827%

Notes:

1. California Air Resources Board, EMFAC2021 (LA County; Annual; 2016,2040', Aggregate Fleet).
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.
3. California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at: https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed May 2021. Diesel is adjusted to account for retail (48%) and non-retail (52%) diesel sales.

Appendix D

Greenhouse Gas Emissions Data

ESA

Carson General Plan Update
Operational & Existing Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Los Angeles
Air District	South Coast
Climate Zone	11
Operational Year	2040
Utility Provider	Southern California Edison

CO2e

	2040	2016
(lbs CO2e/MWh)	100.2887325	631.8190151
% Reduction	87%	16.00%

Note: CH4 and N2O are set to 0 in CalEEMod as CO2 is set to represent CO2e values)

Potential 2040 Planning Area Buildout

	Existing		Net New		2040 Total	
	City Limits	SOI	City Limits	SOI	City Limits	SOI
Non-Residential Development (sf)						
Commercial	5,338,000	65,000	3,044,000	194,000	8,382,000	259,000
Office	4,127,000	825,000	2,098,000	87,000	6,225,000	912,000
Industrial	14,831,000	9,811,000	5,817,000	291,000	20,648,000	10,102,000
Total	**24,296,000**	**10,701,000**	**10,959,000**	**572,000**	**35,255,000**	**11,273,000**
Housing Units	**26,710**	**1,700**	**13,690**	**40**	**40,400**	**1,740**
Subtotal	**28,410**		**13,730**		**42,140**	
Single Family Residential	**22,540**		**40**		**22,580**	
Single Family Attached	**2,410**		**200**		**2,610**	
Multifamily	**3,460**		**13,490**		**16,950**	
Total	**28,410**		**13,730**		**42,140**	
Population	**93,100**	**5,000**	**43,500**	**100**	**136,600**	**5,100**
Jobs	**58,600**	**19,000**	**18,000**	**900**	**76,600**	**19,900**

NOTES: sf = square feet; SOI = Sphere of Influence

Dyett & Bhatia, 2021

Trip Generation:

Scenario		2016	2040 No Project	2040 Plus Project
Total Volume		12,377,418	11,706,639	12,252,255
Total VMT		3,688,949	3,460,815	3,612,495
VMT by Vehicle Occupancy	DA			
	SR2			
	SR3			
VMT by	Auto	3,392,242	3,040,274	3,174,281
	Light-heavy Truck	54,979	67,879	69,458

Vehicle Type				
	Medium-heavy Truck	48,581	57,992	59,363
	Heavy-heavy Truck	193,147	294,670	309,393

Source VMT_by_Link_Carson

Area Source

wood stoves	Not allowed.

fireplaces	default Existing	Defalut	2040
wood	11.27	62.5	0
gas	119.59	1062.5	129.07
none	22.54	125	24.33
		1250	153.4

Energy Use

Existing	Defaults 2008 Title 24 Used
Project	Default 2019 Title 24 Used

	T24 Electric		Lighting		T24 Natural Gas	
	Default	**2019**	**Default**	**2019**	**Default**	**2019**
Apartment Low Rise	28.76	26.7468	810.36	810.36	8848.67	8229.2631
Condo/Townhouse	39.19	27.433	1001.1	1001.1	12162.6	8513.82
Gen Heavy Industry	2.01	1.407	3.1	3.1	13.51	9.457
General Office Building	4.11	2.877	3.77	3.77	9.92	6.944
Single Family Building	44.29	31.003	1608.84	1608.84	20534.71	14374.297
Strip Mall	3.58	2.506	6.26	6.26	1.14	0.798

CalEEMod currently uses 2016 Title 24 efficiency standards. The project will be built post 2019 therefore as a conservative estimate of T24 efficiencies required, the emission factors are updated using the following reductions to account for the inclusion of 2019 Title 24 standards.

	T24 Electricity	**Lighting**	**T24 NG**
Residential 2019	7%	0%	7%
Non-Residential 2019	30%	0%	30%

Water Use

	gallons/day/person	PPd	gallons/year
Existing	157.0	15,401,700	5,621,620,500
Increase	157.0	6,800,000	2,482,000,000
2040		22,201,700	8,103,620,500

	Defaults	%	2016	2040		
Apartment Low Rise	225432928	4%	197718764	285013517	1977187.6	2850135.167
Condo/Townhouse	157021201	2%	137717405	198520975	1377174	1985209.751
Gen Heavy Industry	3429668750	54%	3008033794	4336109903	30080338	43361099.03
General Office Building	733507178	11%	643331628	927368784	6433316.3	9273687.84
Single Family Building	1468571737	23%	1288029176	1856706556	12880292	18567065.56
Strip Mall	395399119	6%	346789734	499900766	3467897.3	4999007.66

Solid Waste Generation

	PPD/person	PPd	tons/day	tons/year
Existing	11.4	1,118,340	559	204,097
Increase	11.4	497,040	248.52	90,710
2040		1,615,380	808	294,807

	Defaults	%	2016	2040		
Apartment Low Rise	1591.6	3%	5703	8237	57.025752	82.37053025
Condo/Townhouse	1108.6	2%	3972	5737	39.720249	57.37369304
Gen Heavy Industry	18390.44	32%	65891	95177	658.91472	951.7657039
General Office Building	3838.11	7%	13752	19863	137.5164	198.6348051
Single Family Building	26430.24	46%	94697	136785	946.97431	1367.851774
Strip Mall	5604.9	10%	20082	29007	200.81907	290.0719936

Carson General Plan
Air Quality and GHG Assessment
Existing 2016 AQ Emissions

Maximum Regional Operational Emissions (Existing 2016 - Summer) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	7,723	446	8,956	13	921	921
Energy	37	321	179	2	25	25
Mobile	2,209	5,749	22,895	37	2,728	744
Total Project On-Site and Off-Site Emissions	9,969	6,516	32,030	52	3,675	1,691

Maximum Regional Operational Emissions (Existing 2016 - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	7,723	446	8,956	13	921	921
Energy	37	321	179	2	25	25
Mobile	2,209	5,749	22,895	37	2,728	744
Total Project On-Site and Off-Site Emissions	9,969	6,516	32,030	52	3,675	1,691

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Energy	37	321	179	2	25	25
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Total Project On-Site and Off-Site Emissions	9,969	6,516	32,030	52	3,675	1,691

Maximum Regional Operational Emissions (Existing 2040 - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	7,723	446	8,956	13	921	921
Energy	37	321	179	2	25	25
Mobile	2,209	5,749	22,895	37	2,728	744
Total Project On-Site and Off-Site Emissions	9,969	6,516	32,030	52	3,675	1,691

Carson General Plan
Air Quality and GHG Assessment
Carson 2040 New Development AQ Emissions

Maximum Regional Operational Emissions (Carson 2040 New Development - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	588	17	1,130	0	7	7
Energy	8	72	41	0	6	6

Maximum Regional Operational Emissions (Carson 2040 New Development - Winter + Existing 2040 - Winter) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	8310.9	462.4	10086.3	12.6	928.1	928.1
Energy	45.1	393.2	219.5	2.5	31.2	31.2
Mobile	684.0	1515.0	6513.0	27.0	2623.0	671.0
Total Project On-Site and Off-Site Emissions	**9040**	**2371**	**16819**	**42**	**3582.23**	**1630**

Maximum Regional Operational Emissions (Carson 2040 New Development - Summer) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	587.9	16.6	1130.5	0.1	6.6	6.6
Energy	8.3	72.1	40.8	0.5	5.7	5.7

Maximum Regional Operational Emissions (Carson 2040 New Development - Summer + Existing 2040 - Summer) (pounds per day)

Source	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	8310.9	462.4	10086.3	12.6	928.1	928.1
Energy	45.1	393.2	219.5	2.5	31.2	31.2
Mobile	684.0	1515.0	6513.0	27.0	2623.0	671.0
Total Project On-Site and Off-Site Emissions	**9040**	**2371**	**16819**	**42**	**3582.23**	**1630**
Existing On-Site and Off-Site Emissions	9969	6516	32030	52	3675	1691
Net Change	**-929**	**-4145**	**-15211**	**-9**	**-92.71**	**-61**

Carson General Plan
Air Quality and GHG Assessment
Carson Existing GHG Emissions

Maximum Regional Operational GHG Emissions (Existing 2016)

Source	$MTCO_2e/yr$
Area	6,621
Energy	273,874
Solid Waste	17,597
Water Conveyance and Wastewater Treatment	51,183
Mobile	648,319
Total	**997,594**

Maximum Regional Operational GHG Emissions (Existing 2040)

Source	$MTCO_2e/yr$
Area	6,620
Energy	99,824
Solid Waste	17,597
Water Conveyance and Wastewater Treatment	18,235
Mobile	452,692
Total	**594,968**

Carson General Plan
Air Quality and GHG Assessment
Carson New Development GHG Emissions

Maximum Regional Operational GHG Emissions (New Development 2040)

Source	$MTCO_2e/yr$
Area	289
Energy	24,177
Solid Waste	2,432
Water Conveyance and Wastewater Treatment	6,214
Mobile	20,233
Total	53,346

Maximum Regional Operational GHG Emissions (Existing 2040 + New Development 2040)

Source	CO2e MT/yr
Area	6,910
Energy	124,001
Solid Waste	20,029
Water Conveyance and Wastewater Treatment	24,449
Mobile	472,925
Total	**648,314**
Existing (2016)	997,594
Project Net Total GHG Emissions	**-349,281**

Carson General Plan
Air Quality and GHG Assessment
Operational Mobile Emissions

		Criteria Pollutant Emission Factors (lb/mile)										GHG Emissions (metric tons/mile)				Criteria Pollutant Emissions (pounds/day)								GHG Emissions (metric tons/year)			
Year	Weekday Daily VMT	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Tota	CO2	CH4	N2O	CO2e	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Total	CO2	CH4	N2O	CO2e
																										1	*25*	*298*	
2016	3,392,242	5.87E-04	5.79E-04	6.14E-03	8.23E-06	6.61E-04	4.44E-05	7.05E-04	1.62E-04	1.71E-05	1.79E-04	3.77E-04	2.72E-08	1.90E-08	3.84E-04	1,992.37	1,965.35	20,828.79	27.93	2,242.46	150.57	2,393.03	550.42	58.02	608.44	467,389.92	33.63	23.55	475,248.52
2016	54,979	8.64E-04	3.56E-03	6.07E-03	1.54E-05	6.61E-04	2.36E-04	8.97E-04	1.62E-04	1.04E-04	2.66E-04	7.15E-04	2.93E-08	5.84E-08	7.33E-04	47.49	195.75	333.93	0.85	36.34	12.98	49.33	8.92	5.71	14.63	14,355.17	0.59	1.17	14,718.80
2016	48,581	8.78E-04	1.19E-02	7.02E-03	2.85E-05	6.61E-04	4.14E-04	1.08E-03	1.62E-04	3.19E-04	4.81E-04	1.35E-03	3.30E-08	1.55E-07	1.40E-03	42.63	579.85	340.96	1.38	32.11	20.12	52.23	7.88	15.49	23.38	23,907.82	0.59	2.75	24,742.88
2016	193,147	6.56E-04	1.56E-02	7.21E-03	3.38E-05	6.61E-04	5.46E-04	1.21E-03	1.62E-04	3.45E-04	5.07E-04	1.80E-03	3.74E-07	2.83E-07	1.90E-03	126.65	3,008.34	1,391.70	6.53	127.68	105.50	233.18	31.34	66.63	97.97	127,002.41	26.35	19.96	133,609.00
																2,209	**5,749**	**22,895**	**37**			**2,728**			**744**				**648,319**
2040	3,040,274	2.00E-04	1.02E-04	1.75E-03	5.87E-06	6.61E-04	3.95E-05	7.01E-04	1.62E-04	1.30E-05	1.75E-04	2.69E-04	6.58E-09	6.65E-09	2.72E-04	609.20	311.56	5,316.97	17.85	2,009.79	120.02	2,129.81	493.31	39.56	532.88	299,026.64	7.30	7.37	301,406.67
2040	67,879	1.73E-04	3.43E-04	1.52E-03	7.04E-06	6.61E-04	1.76E-04	8.37E-04	1.62E-04	6.56E-05	2.28E-04	3.29E-04	4.64E-09	3.00E-08	3.38E-04	11.76	23.31	102.84	0.48	44.87	11.93	56.80	11.01	4.45	15.47	8,157.55	0.12	0.74	8,381.60
2040	57,992	6.50E-05	1.13E-03	7.36E-04	1.39E-05	6.61E-04	1.08E-04	7.69E-04	1.62E-04	3.82E-05	2.01E-04	6.69E-04	1.23E-08	8.59E-08	6.94E-04	3.77	65.74	42.68	0.80	38.34	6.28	44.61	9.41	2.22	11.63	14,150.21	0.26	1.82	14,698.48
2040	294,670	1.04E-04	3.55E-03	2.63E-03	2.24E-05	6.61E-04	2.93E-04	9.54E-04	1.62E-04	1.19E-04	2.81E-04	1.14E-03	8.58E-08	1.80E-07	1.19E-03	30.56	1,046.52	773.84	6.59	194.79	86.22	281.01	47.81	35.02	82.84	122,194.91	9.23	19.39	128,204.75
																655	**1,447**	**6,236**	**26**			**2,512**			**643**				**452,692**
2040	3,174,281	2.00E-04	1.02E-04	1.75E-03	5.87E-06	6.61E-04	3.95E-05	7.01E-04	1.62E-04	1.30E-05	1.75E-04	2.69E-04	6.58E-09	6.65E-09	2.72E-04	636.05	325.29	5,551.32	18.64	2,098.38	125.31	2,223.69	515.06	41.31	556.36	312,206.91	7.62	7.70	314,691.85
2040	69,458	1.73E-04	3.43E-04	1.52E-03	7.04E-06	6.61E-04	1.76E-04	8.37E-04	1.62E-04	6.56E-05	2.28E-04	3.29E-04	4.64E-09	3.00E-08	3.38E-04	12.03	23.86	105.24	0.49	45.92	12.20	58.12	11.27	4.56	15.83	8,347.29	0.12	0.76	8,576.55
2040	59,363	6.50E-05	1.13E-03	7.36E-04	1.39E-05	6.61E-04	1.08E-04	7.69E-04	1.62E-04	3.82E-05	2.01E-04	6.69E-04	1.23E-08	8.59E-08	6.94E-04	3.86	67.29	43.69	0.82	39.24	6.43	45.67	9.63	2.27	11.90	14,484.74	0.27	1.86	15,045.97
2040	309,393	1.04E-04	3.55E-03	2.63E-03	2.24E-05	6.61E-04	2.93E-04	9.54E-04	1.62E-04	1.19E-04	2.81E-04	1.14E-03	8.58E-08	1.80E-07	1.19E-03	32.09	1,098.81	812.50	6.92	204.53	90.52	295.05	50.20	36.77	86.98	128,300.45	9.69	20.36	134,610.56
																684	**1,515**	**6,513**	**27**			**2,623**			**671**				**472,925**

Source: EMFAC2021; Fehr & Peers, 2021 (VMT data)

Carson General Plan
Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ =	Paved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
sL =	road surface silt loading (g/m^2)
W =	average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
$EF_{Dust,P}$	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k\ (\ s / 12)^{1} \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C)$

Where:

$EF_{Dust,U}$ =	Unpaved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
s =	surface material silt content (%)
Sp =	mean vehicle speed (mph)
M =	surface material moisture content (%)
C =	Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
$EF_{Dust,U}$	5.20E+00	5.19E-01

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).

USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

ESA, 2020.

Appendix E
Noise Measurement Data

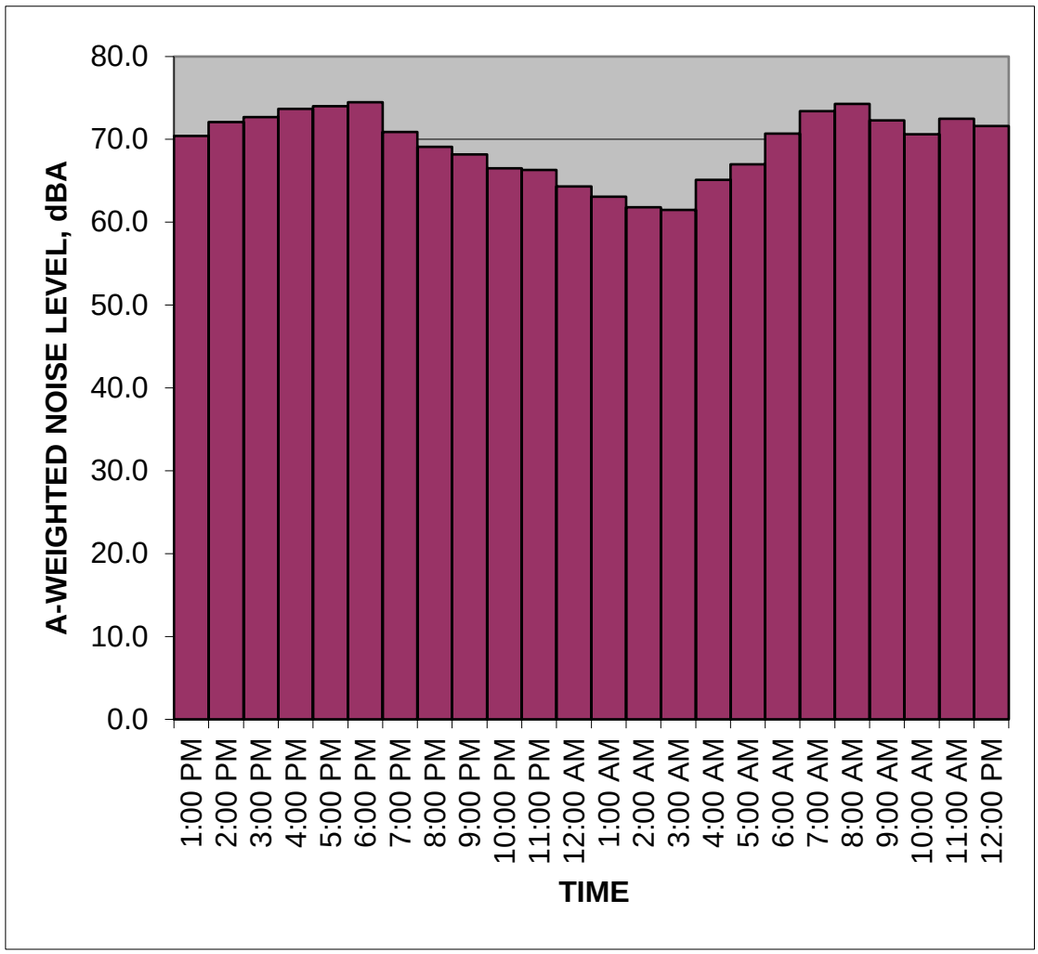
ESA

Measured Ambient Noise Levels

Project: City of Carson GPU
Location: R1
Sources: Ambient

Date: December 14-15, 2017

TIME	HNL, dB(A)
1:00 PM	70.4
2:00 PM	72.1
3:00 PM	72.7
4:00 PM	73.7
5:00 PM	74.0
6:00 PM	74.5
7:00 PM	70.9
8:00 PM	69.1
9:00 PM	68.2
10:00 PM	66.5
11:00 PM	66.3
12:00 AM	64.3
1:00 AM	63.1
2:00 AM	61.8
3:00 AM	61.5
4:00 AM	65.1
5:00 AM	67.0
6:00 AM	70.7
7:00 AM	73.4
8:00 AM	74.3
9:00 AM	72.3
10:00 AM	70.6
11:00 AM	72.5
12:00 PM	71.6
CNEL, dB(A):	**74.5**



NOTES:

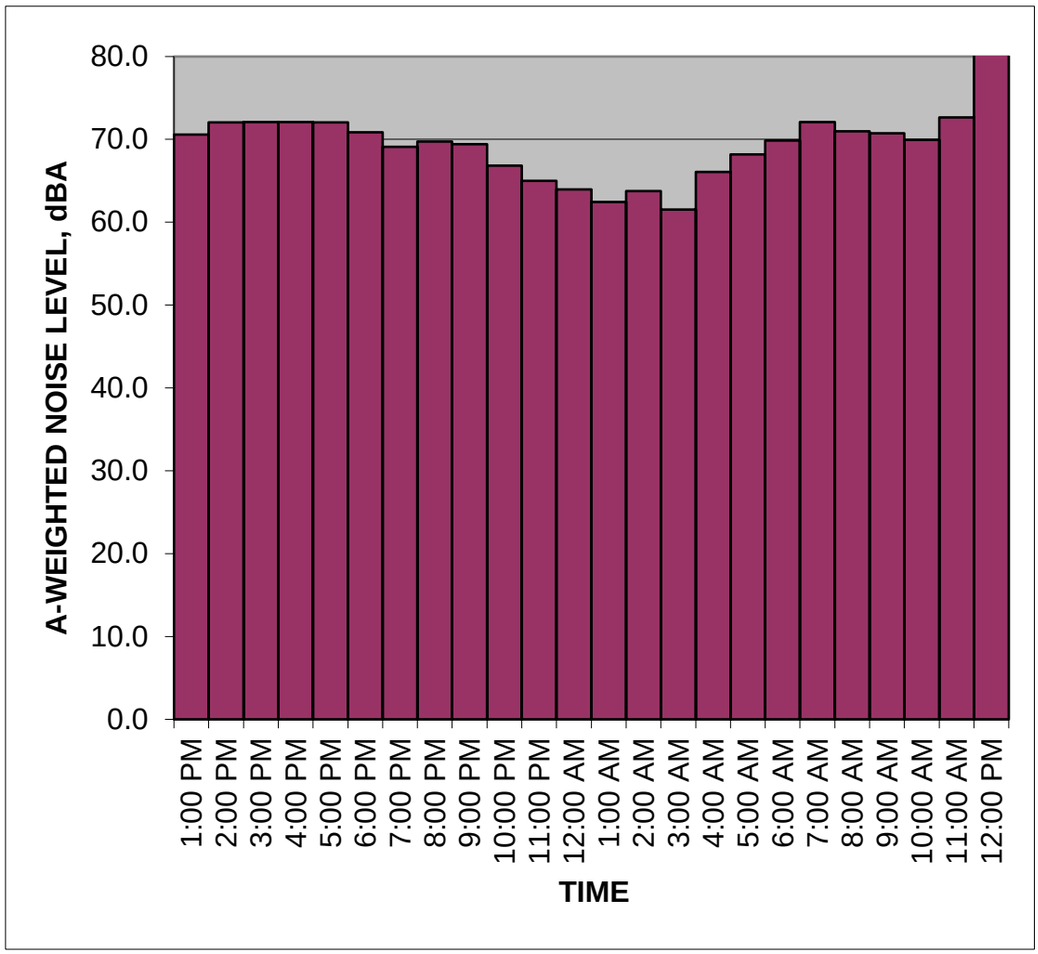
fieldcnel.xls

Measured Ambient Noise Levels

Project: City of Carson GPU
Location: R2
Sources: Ambient

Date: December 14-15, 2017

TIME	HNL, dB(A)
1:00 PM	70.6
2:00 PM	72.0
3:00 PM	72.1
4:00 PM	72.1
5:00 PM	72.0
6:00 PM	70.9
7:00 PM	69.1
8:00 PM	69.7
9:00 PM	69.4
10:00 PM	66.8
11:00 PM	65.0
12:00 AM	64.0
1:00 AM	62.4
2:00 AM	63.8
3:00 AM	61.5
4:00 AM	66.1
5:00 AM	68.2
6:00 AM	69.8
7:00 AM	72.1
8:00 AM	71.0
9:00 AM	70.7
10:00 AM	70.0
11:00 AM	72.6
12:00 PM	81.6
CNEL, dB(A):	**74.9**



NOTES:

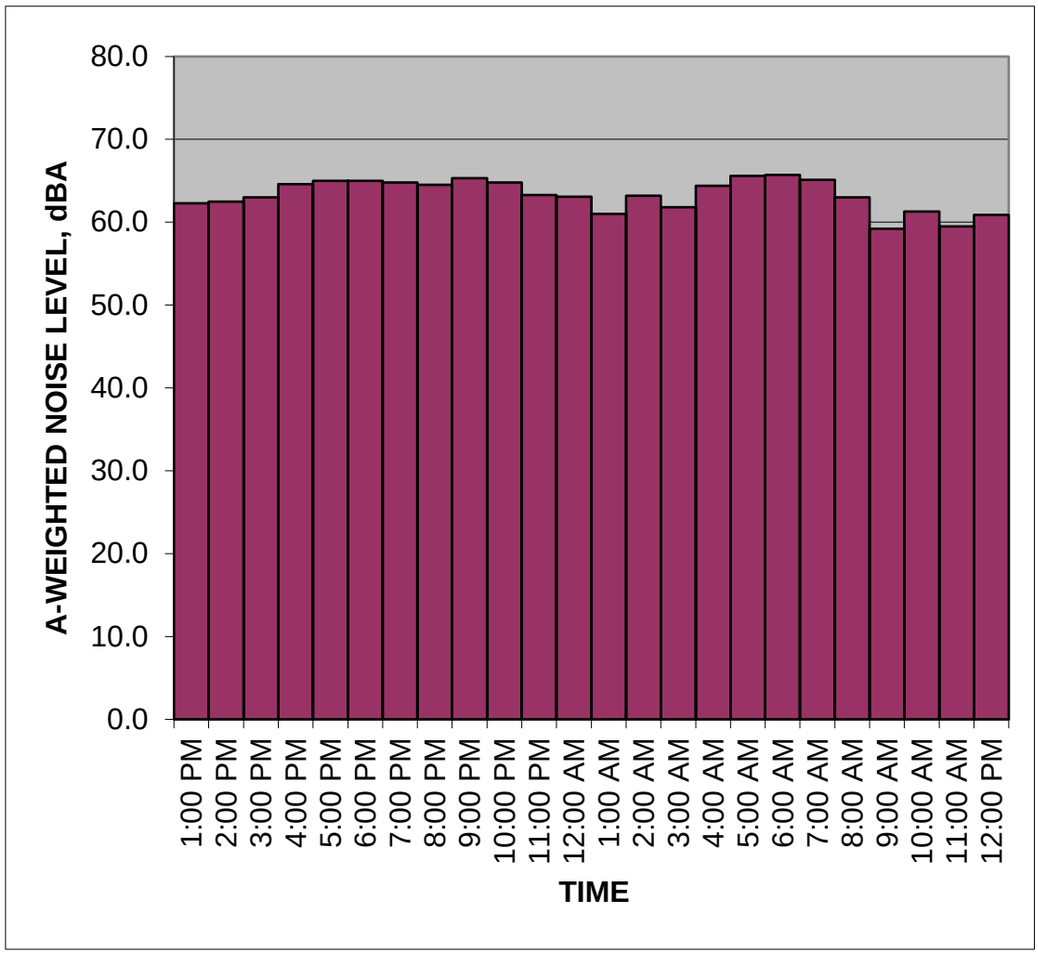
fieldcnel.xls

Measured Ambient Noise Levels

Project: City of Carson GPU
Location: R3
Sources: Ambient

Date: December 14-15, 2017

TIME	HNL, dB(A)
1:00 PM	62.3
2:00 PM	62.5
3:00 PM	63.0
4:00 PM	64.6
5:00 PM	65.0
6:00 PM	65.0
7:00 PM	64.8
8:00 PM	64.5
9:00 PM	65.3
10:00 PM	64.8
11:00 PM	63.3
12:00 AM	63.1
1:00 AM	61.0
2:00 AM	63.2
3:00 AM	61.8
4:00 AM	64.4
5:00 AM	65.6
6:00 AM	65.7
7:00 AM	65.1
8:00 AM	63.0
9:00 AM	59.2
10:00 AM	61.3
11:00 AM	59.5
12:00 PM	60.9
CNEL, dB(A):	**70.6**



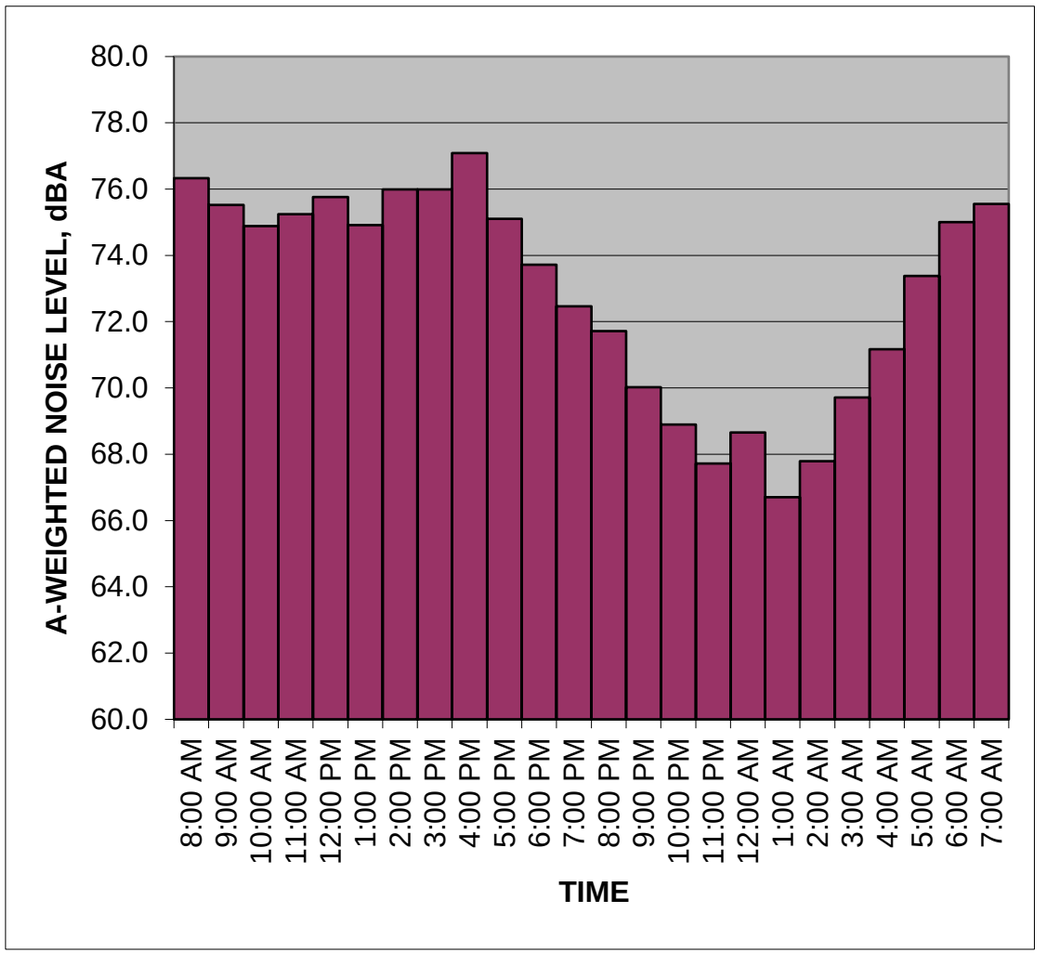
NOTES:

Measured Ambient Noise Levels

Project: City of Carson GPU
Location: R4
Sources: Ambient

Date: December 20-21, 2017

TIME	HNL, dB(A)
8:00 AM	76.3
9:00 AM	75.5
10:00 AM	74.9
11:00 AM	75.2
12:00 PM	75.8
1:00 PM	74.9
2:00 PM	76.0
3:00 PM	76.0
4:00 PM	77.1
5:00 PM	75.1
6:00 PM	73.7
7:00 PM	72.5
8:00 PM	71.7
9:00 PM	70.0
10:00 PM	68.9
11:00 PM	67.7
12:00 AM	68.7
1:00 AM	66.7
2:00 AM	67.8
3:00 AM	69.7
4:00 AM	71.2
5:00 AM	73.4
6:00 AM	75.0
7:00 AM	75.5
CNEL, dB(A):	**78.4**



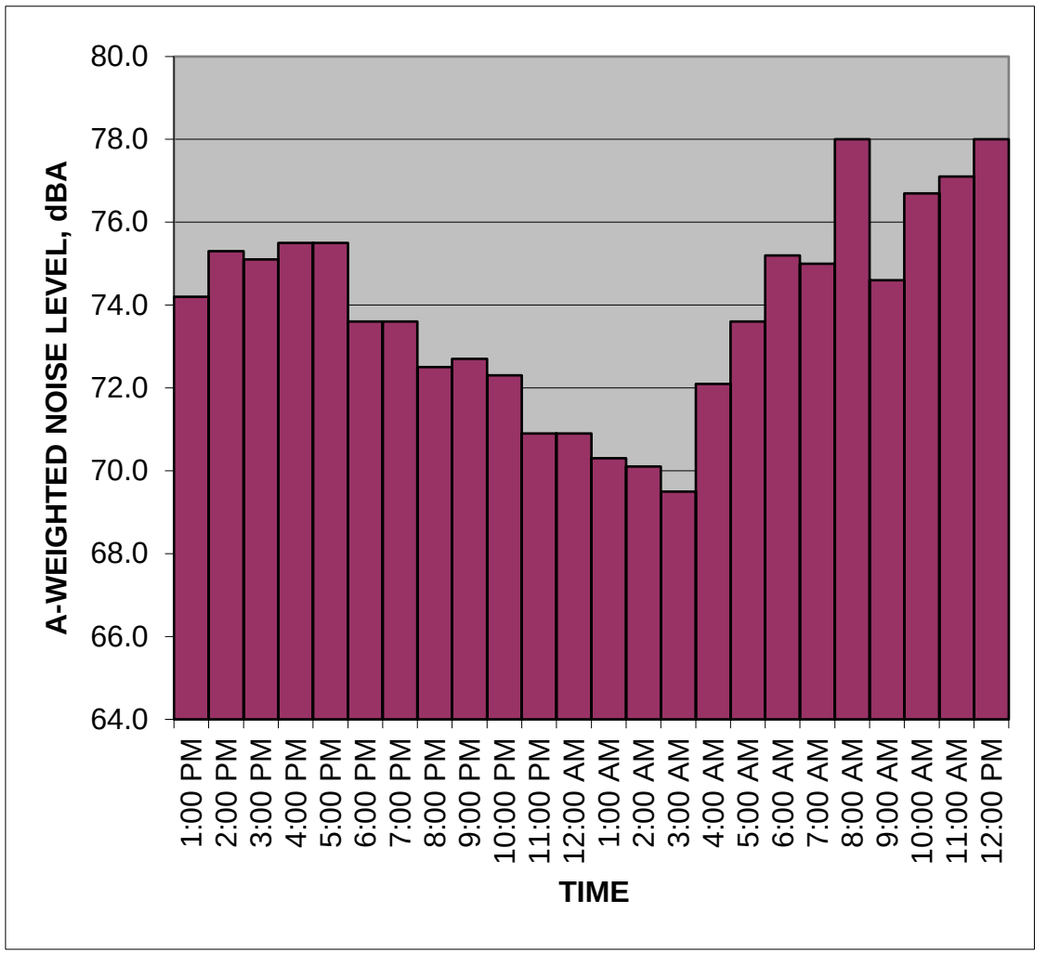
NOTES:

Measured Ambient Noise Levels

Project: City of Carson GPU
Location: R5
Sources: Ambient

Date: December 15-16, 2017

TIME	HNL, dB(A)
1:00 PM	74.2
2:00 PM	75.3
3:00 PM	75.1
4:00 PM	75.5
5:00 PM	75.5
6:00 PM	73.6
7:00 PM	73.6
8:00 PM	72.5
9:00 PM	72.7
10:00 PM	72.3
11:00 PM	70.9
12:00 AM	70.9
1:00 AM	70.3
2:00 AM	70.1
3:00 AM	69.5
4:00 AM	72.1
5:00 AM	73.6
6:00 AM	75.2
7:00 AM	75.0
8:00 AM	78.0
9:00 AM	74.6
10:00 AM	76.7
11:00 AM	77.1
12:00 PM	78.0
CNEL, dB(A):	**79.4**



NOTES:

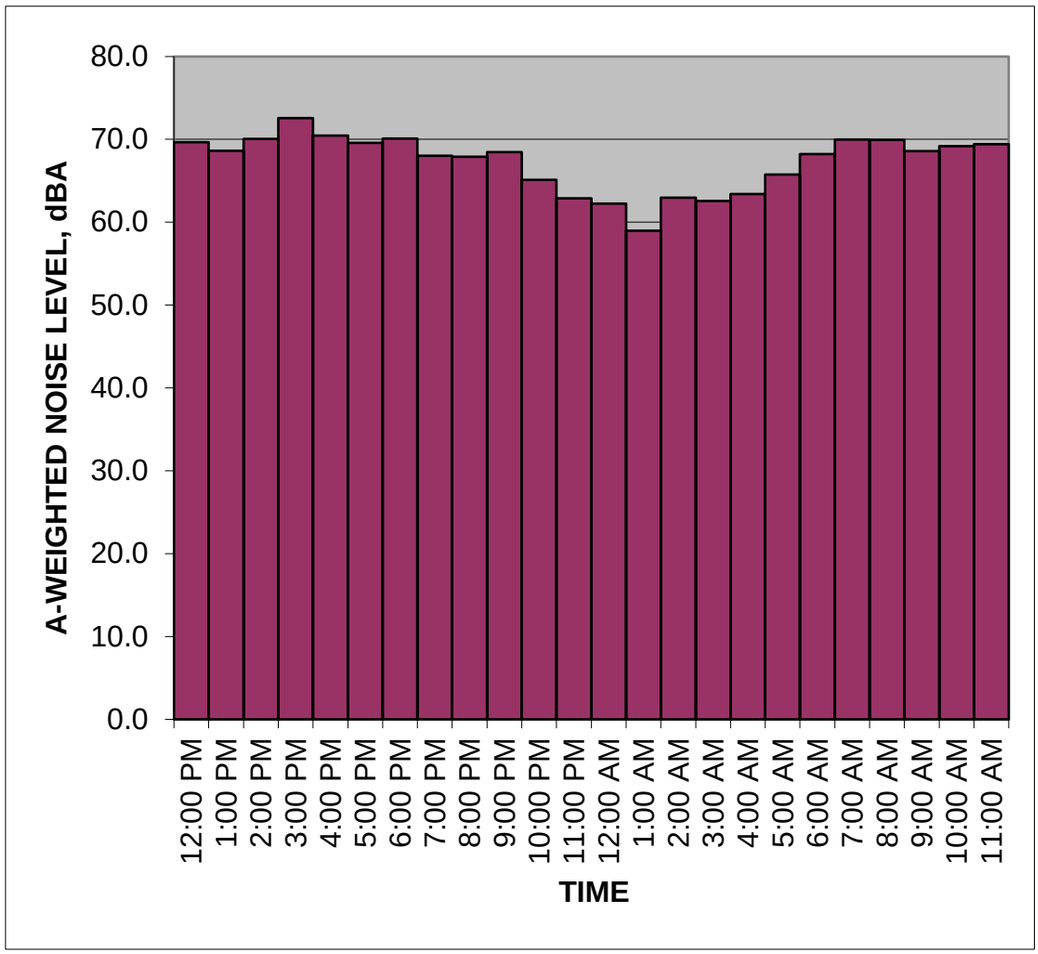
fieldcnel.xls

Measured Ambient Noise Levels

Project: City of Carson GPU
Location: R6
Sources: Ambient

Date: December 15-16, 2017

TIME	HNL, dB(A)
12:00 PM	69.6
1:00 PM	68.6
2:00 PM	70.1
3:00 PM	72.6
4:00 PM	70.4
5:00 PM	69.6
6:00 PM	70.1
7:00 PM	68.0
8:00 PM	67.9
9:00 PM	68.5
10:00 PM	65.1
11:00 PM	62.9
12:00 AM	62.3
1:00 AM	59.0
2:00 AM	63.0
3:00 AM	62.5
4:00 AM	63.4
5:00 AM	65.8
6:00 AM	68.2
7:00 AM	70.0
8:00 AM	69.9
9:00 AM	68.6
10:00 AM	69.2
11:00 AM	69.4
CNEL, dB(A):	**72.4**



NOTES:

TRAFFIC NOISE ANALYSIS TOOL

Project Name: Carson General Plan Update
Project Number: D170087.00
Analysis Scenario: 2040 NB
Source of Traffic Volumes: Fehr and Peers, 2021

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	CNEL Noise Level (dBA)	Distance (feet) to Noise Level (dBA CNEL)		
			Auto	MT	HT	Auto	MT	HT			60	65	70
223rd St between Alameda St and Wilmington Ave	Hard	50	30	30	30	2413	34	213	70.8	71.8	750	235	75
223rd St between Wilmington Ave and Grace Ave	Hard	50	40	40	40	2168	34	67	70.7	71.7	740	235	75
223rd St between Grace Ave and Main St	Hard	50	40	40	40	2066	40	49	70.3	71.3	670	215	65
223rd St between Main St and Figueroa St	Hard	50	40	40	40	1843	36	53	70.0	71.0	630	200	65
Alameda St between Del Amo Blvd and Carson St	Hard	50	40	40	40	1277	77	585	75.4	76.4	2,200	695	220
Alameda St between Carson St and Sepulveda Blvd	Hard	50	40	40	40	1473	117	961	77.4	78.4	3,455	1,095	345
Alameda St S/O Sepulveda Blvd	Hard	50	40	40	40	1447	86	1154	78.0	79.0	4,000	1,265	400
Albertoni St between Figueroa St and Avalon Blvd	Hard	50	40	40	40	746	19	22	66.2	67.2	265	85	25
Albertoni St between Avalon Blvd and Central Ave	Hard	50	30	30	30	457	13	36	63.4	64.4	135	45	15
Avalon Blvd between Walnut St and Alondra Blvd	Hard	50	40	40	40	2870	76	84	72.1	73.1	1,010	320	100
Avalon Blvd between Walnut and University Dr	Hard	50	40	40	40	2775	64	73	71.7	72.7	940	295	95
Avalon Blvd between University Dr and 220th St	Hard	50	40	40	40	2315	53	66	71.0	72.0	800	250	80
Avalon Blvd between 220th St and Sepulveda Blvd	Hard	50	40	40	40	1859	38	56	70.1	71.1	645	205	65
Avalon Blvd between Sepulveda Blvd and Lomita Blvd	Hard	50	30	30	30	760	9	51	65.0	66.0	200	65	20
Carson St W/O Figueroa St	Hard	50	40	40	40	1933	39	50	70.1	71.1	645	205	65
Carson St between Figueroa St and Dolores St	Hard	50	40	40	40	1914	44	58	70.3	71.3	670	210	65
Carson St between Dolores St Arnold Center Dr	Hard	50	40	40	40	1746	56	66	70.3	71.3	675	215	65
Carson St between Arnold Center Dr and Alameda St	Hard	50	30	30	30	996	30	27	64.7	65.7	185	60	20
Central Ave between Albertoni St and Victoria St	Hard	50	40	40	40	1814	53	119	71.3	72.3	850	270	85
Central Ave between Victoria St and University Dr	Hard	50	30	30	30	1162	44	63	66.7	67.7	295	95	30
Central Ave between University Dr and Del Amo Blvd	Hard	50	40	40	40	606	36	52	67.4	68.4	350	110	35
Del Amo Blvd between Avalon Blvd and Central Ave	Hard	50	40	40	40	2317	55	66	71.1	72.1	805	255	80
Del Amo Blvd between Central Ave and Alameda St	Hard	50	40	40	40	2532	76	101	72.0	73.0	985	310	100
Figueroa St between Victoria St and Del Amo Blvd	Hard	50	40	40	40	505	7	9	63.8	64.8	150	50	15
Figueroa St between Del Amo Blvd and Sepulveda Blvd	Hard	50	40	40	40	615	10	20	65.3	66.3	215	65	20
Figueroa St between Sepulveda Blvd and Lomita Blvd	Hard	50	40	40	40	916	10	5	65.7	66.7	235	75	25
Main St between 234th St and Vista Del Loma	Hard	50	40	40	40	965	21	16	66.7	67.7	295	95	30
Main St Between Vista Del Loma and Griffith St	Hard	50	40	40	40	1622	56	124	71.2	72.2	825	260	85
Main St between Griffith St and Albertoni St	Hard	50	30	30	30	1433	67	115	68.6	69.6	460	145	45
Santa Fe Ave between Carson St and Del Amo blvd	Hard	50	40	40	40	1502	72	161	71.7	72.7	935	295	95
Sepulveda Blvd E/O Alameda St Connector	Hard	50	30	30	30	2260	59	87	68.7	69.7	470	150	45
Sepulveda Blvd between Avalon Blvd and Alameda St	Hard	50	40	40	40	2250	42	68	70.9	71.9	775	245	75
Sepulveda Blvd between Figueroa St and Avalong Blvd	Hard	50	40	40	40	2359	48	89	71.4	72.4	870	275	85
Torrance Blvd between Figueroa St and Main St	Hard	50	40	40	40	649	12	15	65.2	66.2	210	65	20
University Dr between Avalon Blvd and Perimeter Rd	Hard	50	40	40	40	124	4	3	58.2	59.2	40	15	>5
University Dr between Perimeter Rd and Wilmington Ave	Hard	50	40	40	40	322	7	7	62.3	63.3	105	35	10
Victoria St between Tamcliff Ave and Central Ave	Hard	50	40	40	40	428	47	77	68.0	69.0	400	125	40
Victoria St between Central Ave and Wilmington Ave	Hard	50	40	40	40	206	30	34	64.8	65.8	190	60	20
Wilmington Ave between Victoria St and Dominguez St	Hard	50	40	40	40	970	46	193	71.4	72.4	880	280	90
Wilmington Ave between Dominguez St and 220th St	Hard	50	40	40	40	1275	32	192	71.7	72.7	925	290	90
Wilmington Ave between 220th St and 230 St	Hard	50	40	40	40	2921	105	276	74.2	75.2	1,655	525	165
Wilmington Ave between 230th St and Sepulveda Blvd	Hard	50	40	40	40	3437	124	212	74.1	75.1	1,600	505	160

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL

Project Name: Carson General Plan Update
Project Number: D170087.00
Analysis Scenario: 2040 PP
Source of Traffic Volumes: Fehr and Peers, 2021

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	CNEL Noise Level (dBA)	Distance (feet) to Noise Level (dBA CNEL)		
			Auto	MT	HT	Auto	MT	HT			60	65	70
223rd St between Alameda St and Wilmington Ave	Hard	50	30	30	30	2545	35	220	70.9	71.9	780	245	80
223rd St between Wilmington Ave and Grace Ave	Hard	50	40	40	40	2092	35	62	70.5	71.5	710	225	70
223rd St between Grace Ave and Main St	Hard	50	40	40	40	2109	43	54	70.5	71.5	700	220	70
223rd St between Main St and Figueroa St	Hard	50	40	40	40	1905	36	53	70.1	71.1	640	205	65
Alameda St between Del Amo Blvd and Carson St	Hard	50	40	40	40	1260	92	683	76.0	77.0	2,515	795	250
Alameda St between Carson St and Sepulveda Blvd	Hard	50	40	40	40	1396	128	1106	77.9	78.9	3,900	1,235	390
Alameda St S/O Sepulveda Blvd	Hard	50	40	40	40	1385	88	1281	78.4	79.4	4,380	1,385	440
Albertoni St between Figueroa St and Avalon Blvd	Hard	50	40	40	40	946	26	30	67.3	68.3	340	110	35
Albertoni St between Avalon Blvd and Central Ave	Hard	50	30	30	30	485	11	46	64.1	65.1	160	50	15
Avalon Blvd between Walnut St and Alondra Blvd	Hard	50	40	40	40	2994	74	79	72.1	73.1	1,020	320	100
Avalon Blvd between Walnut and University Dr	Hard	50	40	40	40	3299	65	67	72.2	73.2	1,040	330	105
Avalon Blvd between University Dr and 220th St	Hard	50	40	40	40	2677	52	66	71.4	72.4	875	275	90
Avalon Blvd between 220th St and Sepulveda Blvd	Hard	50	40	40	40	1977	39	59	70.3	71.3	680	215	70
Avalon Blvd between Sepulveda Blvd and Lomita Blvd	Hard	50	30	30	30	770	7	50	64.9	65.9	195	60	20
Carson St W/O Figueroa St	Hard	50	40	40	40	2070	43	51	70.4	71.4	685	215	70
Carson St between Figueroa St and Dolores St	Hard	50	40	40	40	2037	42	62	70.5	71.5	710	225	70
Carson St between Dolores St Arnold Center Dr	Hard	50	40	40	40	1842	49	61	70.3	71.3	670	210	65
Carson St between Arnold Center Dr and Alameda St	Hard	50	30	30	30	1017	24	23	64.4	65.4	170	55	15
Central Ave between Albertoni St and Victoria St	Hard	50	40	40	40	2568	61	170	72.8	73.8	1,190	375	120
Central Ave between Victoria St and University Dr	Hard	50	30	30	30	1329	56	88	67.8	68.8	380	120	40
Central Ave between University Dr and Del Amo Blvd	Hard	50	40	40	40	852	47	71	68.8	69.8	475	150	50
Del Amo Blvd between Avalon Blvd and Central Ave	Hard	50	40	40	40	2261	62	95	71.5	72.5	885	280	90
Del Amo Blvd between Central Ave and Alameda St	Hard	50	40	40	40	2676	88	138	72.6	73.6	1,150	365	115
Figueroa St between Victoria St and Del Amo Blvd	Hard	50	40	40	40	777	8	26	66.3	67.3	265	85	25
Figueroa St between Del Amo Blvd and Sepulveda Blvd	Hard	50	40	40	40	651	10	22	65.6	66.6	230	70	25
Figueroa St between Sepulveda Blvd and Lomita Blvd	Hard	50	40	40	40	917	8	5	65.7	66.7	235	75	25
Main St between 234th St and Vista Del Loma	Hard	50	40	40	40	1035	19	14	66.8	67.8	300	95	30
Main St Between Vista Del Loma and Griffith St	Hard	50	40	40	40	2012	58	132	71.8	72.8	945	300	95
Main St between Griffith St and Albertoni St	Hard	50	30	30	30	1672	70	119	69.0	70.0	495	155	50
Santa Fe Ave between Carson St and Del Amo blvd	Hard	50	40	40	40	1306	65	158	71.4	72.4	870	275	85
Sepulveda Blvd E/O Alameda St Connector	Hard	50	30	30	30	2316	68	93	69.0	70.0	495	155	50
Sepulveda Blvd between Avalon Blvd and Alameda St	Hard	50	40	40	40	2299	40	64	70.9	71.9	770	245	75
Sepulveda Blvd between Figueroa St and Avalon Blvd	Hard	50	40	40	40	2372	48	89	71.4	72.4	875	275	90
Torrance Blvd between Figueroa St and Main St	Hard	50	40	40	40	909	22	26	67.0	68.0	315	100	30
University Dr between Avalon Blvd and Perimeter Rd	Hard	50	40	40	40	108	7	5	59.0	60.0	50	15	5
University Dr between Perimeter Rd and Wilmington Ave	Hard	50	40	40	40	278	11	13	62.7	63.7	115	35	10
Victoria St between Tamcliff Ave and Central Ave	Hard	50	40	40	40	489	28	67	67.5	68.5	355	115	35
Victoria St between Central Ave and Wilmington Ave	Hard	50	40	40	40	181	14	15	62.3	63.3	105	35	10
Wilmington Ave between Victoria St and Dominguez St	Hard	50	40	40	40	947	38	195	71.4	72.4	865	275	85
Wilmington Ave between Dominguez St and 220th St	Hard	50	40	40	40	1218	36	213	71.9	72.9	980	310	100
Wilmington Ave between 220th St and 230 St	Hard	50	40	40	40	2979	114	309	74.5	75.5	1,780	565	180
Wilmington Ave between 230th St and Sepulveda Blvd	Hard	50	40	40	40	3510	127	226	74.2	75.2	1,665	525	165

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL

Project Name: Carson General Plan Update
Project Number: D170087.00
Analysis Scenario: 2040 Existing
Source of Traffic Volumes: Fehr and Peers, 2021

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	CNEL Noise Level (dBA)	Distance (feet) to Noise Level (dBA CNEL)		
			Auto	MT	HT	Auto	MT	HT			60	65	70
223rd St between Alameda St and Wilmington Ave	Hard	50	30	30	30	2581	29	96	68.9	69.9	495	155	50
223rd St between Wilmington Ave and Grace Ave	Hard	50	40	40	40	2348	26	39	70.4	71.4	685	215	70
223rd St between Grace Ave and Main St	Hard	50	40	40	40	2179	32	34	70.1	71.1	640	200	65
223rd St between Main St and Figueroa St	Hard	50	40	40	40	1966	28	34	69.7	70.7	585	185	60
Alameda St between Del Amo Blvd and Carson St	Hard	50	40	40	40	1500	77	272	73.1	74.1	1,285	405	130
Alameda St between Carson St and Sepulveda Blvd	Hard	50	40	40	40	1776	103	441	74.8	75.8	1,905	600	190
Alameda St S/O Sepulveda Blvd	Hard	50	40	40	40	1745	78	515	75.2	76.2	2,090	660	210
Albertoni St between Figueroa St and Avalon Blvd	Hard	50	40	40	40	736	21	18	66.0	67.0	250	80	25
Albertoni St between Avalon Blvd and Central Ave	Hard	50	30	30	30	432	12	22	62.2	63.2	105	35	10
Avalon Blvd between Walnut St and Alondra Blvd	Hard	50	40	40	40	3179	75	67	72.1	73.1	1,025	325	105
Avalon Blvd between Walnut and University Dr	Hard	50	40	40	40	3040	66	63	71.9	72.9	970	305	95
Avalon Blvd between University Dr and 220th St	Hard	50	40	40	40	2480	55	59	71.1	72.1	815	260	80
Avalon Blvd between 220th St and Sepulveda Blvd	Hard	50	40	40	40	1904	42	45	70.0	71.0	625	200	65
Avalon Blvd between Sepulveda Blvd and Lomita Blvd	Hard	50	30	30	30	738	10	29	63.6	64.6	145	45	15
Carson St W/O Figueroa St	Hard	50	40	40	40	1941	33	34	69.7	70.7	590	185	60
Carson St between Figueroa St and Dolores St	Hard	50	40	40	40	1920	40	41	69.9	70.9	615	195	60
Carson St between Dolores St Arnold Center Dr	Hard	50	40	40	40	1785	55	56	70.2	71.2	650	205	65
Carson St between Arnold Center Dr and Alameda St	Hard	50	30	30	30	1036	28	22	64.4	65.4	175	55	15
Central Ave between Albertoni St and Victoria St	Hard	50	40	40	40	1845	51	81	70.7	71.7	735	235	75
Central Ave between Victoria St and University Dr	Hard	50	30	30	30	1168	43	46	66.1	67.1	255	80	25
Central Ave between University Dr and Del Amo Blvd	Hard	50	40	40	40	578	34	37	66.6	67.6	290	90	30
Del Amo Blvd between Avalon Blvd and Central Ave	Hard	50	40	40	40	2410	52	45	70.8	71.8	755	240	75
Del Amo Blvd between Central Ave and Alameda St	Hard	50	40	40	40	2692	69	67	71.6	72.6	910	285	90
Figueroa St between Victoria St and Del Amo Blvd	Hard	50	40	40	40	629	7	9	64.6	65.6	180	55	20
Figueroa St between Del Amo Blvd and Sepulveda Blvd	Hard	50	40	40	40	657	9	12	65.0	66.0	200	65	20
Figueroa St between Sepulveda Blvd and Lomita Blvd	Hard	50	40	40	40	1040	11	5	66.2	67.2	265	85	25
Main St between 234th St and Vista Del Loma	Hard	50	40	40	40	1068	22	14	67.0	68.0	315	100	30
Main St Between Vista Del Loma and Griffith St	Hard	50	40	40	40	1803	52	76	70.5	71.5	715	225	70
Main St between Griffith St and Albertoni St	Hard	50	30	30	30	1604	57	71	67.7	68.7	370	115	35
Santa Fe Ave between Carson St and Del Amo blvd	Hard	50	40	40	40	1453	70	118	71.0	72.0	790	250	80
Sepulveda Blvd E/O Alameda St Connector	Hard	50	30	30	30	2427	51	56	68.1	69.1	405	130	40
Sepulveda Blvd between Avalon Blvd and Alameda St	Hard	50	40	40	40	2503	42	51	70.9	71.9	780	245	80
Sepulveda Blvd between Figueroa St and Avalon Blvd	Hard	50	40	40	40	2491	46	59	71.1	72.1	805	255	80
Torrance Blvd between Figueroa St and Main St	Hard	50	40	40	40	632	12	11	64.9	65.9	195	60	20
University Dr between Avalon Blvd and Perimeter Rd	Hard	50	40	40	40	167	5	4	59.5	60.5	55	20	5
University Dr between Perimeter Rd and Wilmington Ave	Hard	50	40	40	40	379	9	8	62.9	63.9	125	40	10
Victoria St between Tamcliff Ave and Central Ave	Hard	50	40	40	40	597	46	53	67.6	68.6	360	115	35
Victoria St between Central Ave and Wilmington Ave	Hard	50	40	40	40	215	28	23	64.0	65.0	160	50	15
Wilmington Ave between Victoria St and Dominguez St	Hard	50	40	40	40	1083	47	103	70.0	71.0	625	200	65
Wilmington Ave between Dominguez St and 220th St	Hard	50	40	40	40	1489	36	89	70.2	71.2	660	210	65
Wilmington Ave between 220th St and 230 St	Hard	50	40	40	40	2968	83	151	73.0	74.0	1,250	395	125
Wilmington Ave between 230th St and Sepulveda Blvd	Hard	50	40	40	40	3509	95	138	73.3	74.3	1,345	425	135

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

Appendix F1
VMT Analysis Methodology

ESA

APPENDIX F1 – VMT ANALYSIS METHODOLOGY

Modeling approach followed to conduct the VMT impact analysis as per SB743 and City's Draft Transportation Study Guidelines.

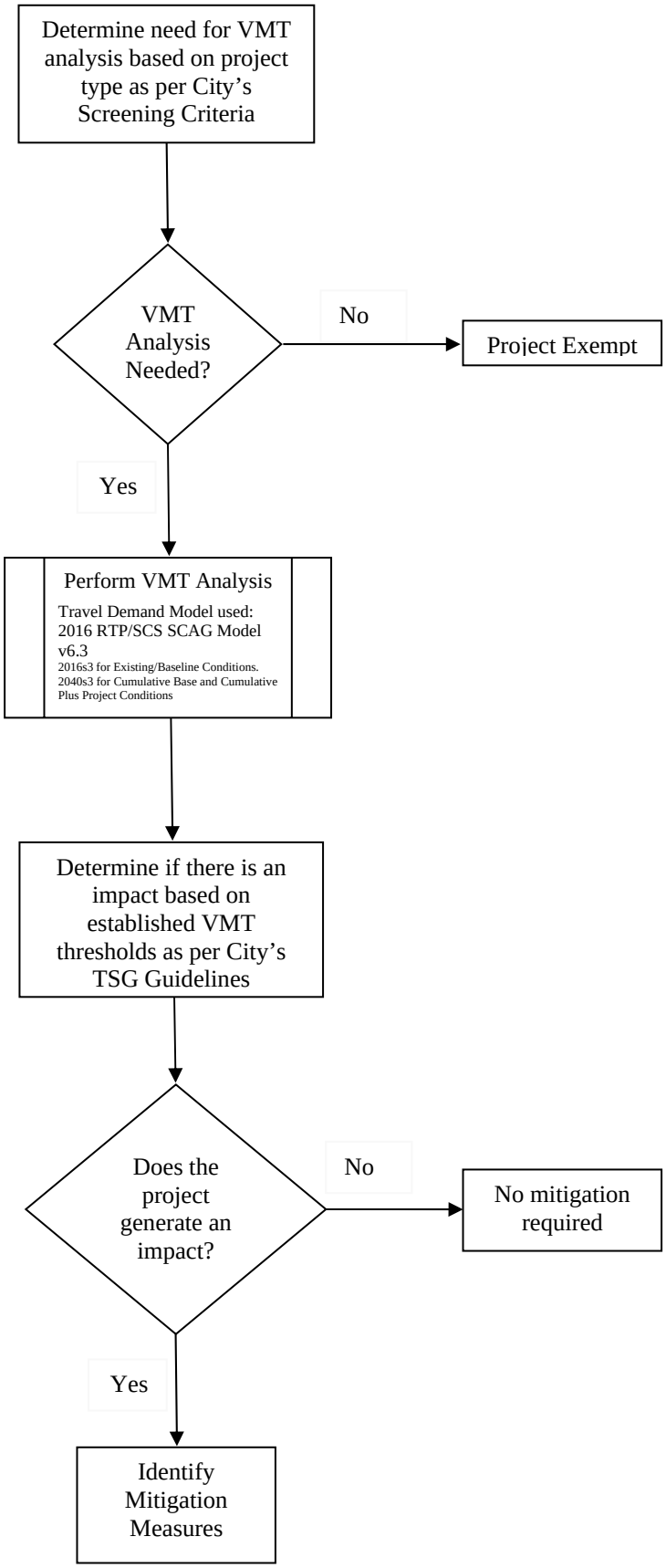


Table 1. Socioeconomic Data Across the Three Analyzed Conditions:

SED / VMT Metrics	2016 Existing/Baseline Conditions	Cumulative Base 2040 Conditions	Cumulative Plus Project 2040 Conditions
Population	108,569	121,153	143,501
Employment	90,580	100,042	111,629
Service Population	199,149	221,195	255,130
Households	29,141	33,633	42,126
Total VMT (Include Auto and Trucks)	7,867,557	8,405,911	9,505,005
Home-Based VMT (Productions)	1,475,720	1,470,830	1,709,723
Home-Based Work VMT (Attractions)	1,725,203	1,548,271	1,719,621
Total VMT per Service Population	39.5	38.0	37.3
Home-Based VMT per Capita	14.3	12.7	12.4
Home-Based Work VMT per Employee	20.0	16.2	16.0

SOURCE: Fehr & Peers 2021

Figure 1. Carson TAZs

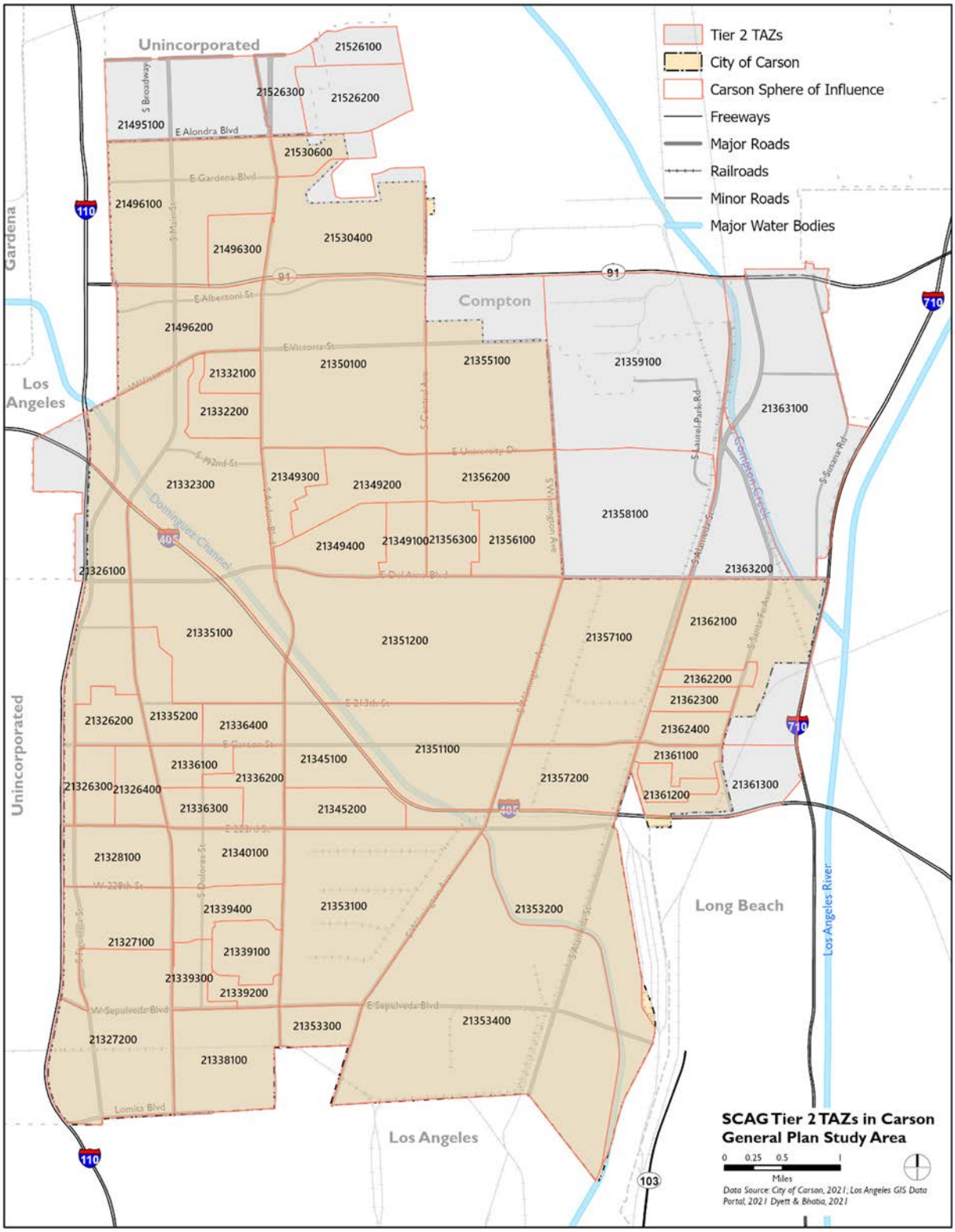


Table 2. VMT ANALYSIS APPENDIX - 2040 WITH GP VMT AND SED BY TAZ

T2 TAZ	Population	Employment	Home Based VMT	Home Based Work VMT	T1 TAZ	Population (T2)	Employment (T2)	Truck OD VMT (T2 level)	Total OD VMT (T2 level)
21326100	4,792	2,757	59,189	40,297	21326000	11,579	4,020	22,770	397,520
21326200	1,951	502	21,841	6,043					
21326300	2,095	349	24,435	4,938					
21326400	2,741	412	33,370	5,033					
21327100	2,848	688	31,221	8,408	21327000	4,379	1,350	7,684	173,382
21327200	1,531	662	17,643	11,394					
21328100	3,545	179	43,999	2,599	21328000	3,545	179	4,898	85,365
21332100	1,076	100	11,372	1,333	21332000	9,058	9,483	113,406	671,915
21332200	1,610	217	16,718	2,642					
21332300	6,372	9,166	80,573	144,861					
21335100	9,012	3,044	111,212	42,350	21335000	11,193	3,516	34,285	404,360
21335200	2,181	472	20,883	5,333					
21336100	1,848	1,019	21,361	13,416	21336000	10,854	2,518	12,476	323,960
21336200	3,567	536	39,687	7,598					

21336300	1,573	285	15,918	4,193					
21336400	3,866	678	46,947	8,642					
21338100	3,275	3,720	35,609	54,166	21338000	3,275	3,720	29,209	348,526
21339100	2,180	260	24,066	3,739	21339000	5,873	523	11,829	146,860
21339200	710	79	7,357	964					
21339300	1,175	174	11,807	2,472					
21339400	1,808	10	18,901	117					
21340100	2,002	217	19,498	3,022	21340000	2,002	217	7,922	72,702
21345100	7,611	5,512	83,514	79,688	21345000	9,722	5,798	31,762	516,793
21345200	2,111	286	21,935	4,078					
21349100	729	97	9,876	1,476	21349000	6,411	360	3,135	160,137
21349200	2,361	32	29,725	403					
21349300	1,245	32	15,443	387					
21349400	2,076	199	25,872	2,641					
21350100	14,917	6,130	218,302	89,884	21350000	14,917	6,130	18,438	567,667
21351100	6,001	1,672	65,687	24,305	21351000	17,158	10,979	263,975	953,686
21351200	11,157	9,307	159,692	161,158					

21353100	1,972	5,530	17,755	95,969	21353000	3,245	9,291	506,121	879,314
21353200	-	2,234	-	41,234					
21353300	1,273	207	12,747	3,227					
21353400	-	1,320	-	25,397					
21355100	1,762	3,380	23,062	50,749	21355000	1,762	3,380	95,245	256,964
21356100	2,364	157	33,102	2,320	21356000	6,043	380	8,749	147,496
21356200	2,373	33	32,954	510					
21356300	1,306	190	18,500	2,796					
21357100	100	4,451	1,374	77,584	21357000	100	6,244	268,056	464,670
21357200	-	1,793	-	31,627					
21358100	1,760	5,097	28,917	91,623	21358000	1,760	5,097	148,043	346,232
21359100	1,700	1,798	25,022	32,369	21359000	1,700	1,798	84,167	197,924
21361100	967	26	13,364	338	21361000	2,427	26	17,267	72,976
21361200	834	-	10,697	-					
21361300	626	-	8,041	-					
21362100	746	3,759	8,472	61,226	21362000	4,232	4,152	163,695	384,940
21362200	866	17	10,748	233					

21362300	1,269	44	14,828	593					
21362400	1,351	332	16,032	4,823					
21363100	-	7,840	-	133,686	21363000	-	9,749	209,435	504,949
21363200	-	1,909	-	32,923					
21495100	1,059	3,165	10,288	49,693	21495000	1,066	7,241	136,254	359,457
21496100	626	7,057	7,036	112,888	21496000	3,841	9,690	207,436	588,690
21496200	2,000	2,601	38,678	42,051					
21496300	1,215	32	16,010	572					
21526100	63	-	643	-	21526000	1,176	613	6,262	49,425
21526200	483	-	5,182	-					
21526300	630	613	5,885	9,153					
21530400	84	4,462	870	71,433	21530000	6,183	5,175	168,837	429,094
21530600	482	448	5,860	7,023					
	T1 POP	T1 EMP	HB VMT	HBW(A) VMT		T2 POP	T2 EMP	Truck VMT	Total VMT
Sum	137,877	107,288	1,709,723	1,719,621		143,501	111,629	2,581,358	9,505,005

Table 3. VMT ANALYSIS APPENDIX - 2040 WITHOUT GP VMT AND SED BY TAZ

T2 TAZ	Population	Employment	Home Based VMT	Home Based Work VMT	T1 TAZ	Population (T2)	Employment (T2)	Truck OD VMT (T2 level)	Total OD VMT (T2 level)
21326100	928	3,718	11,354	56,718	21326000	7,999	5,301	24,451	359,044
21326200	2,277	555	27,537	6,845					
21326300	2,240	468	26,770	6,508					
21326400	2,554	560	28,774	6,861					
21327100	3,780	1,012	49,444	12,120	21327000	6,140	1,820	12,209	200,809
21327200	2,360	808	34,229	13,643					
21328100	4,582	443	62,736	6,336	21328000	4,582	443	6,628	119,783
21332100	1,495	93	21,601	1,233	21332000	4,290	4,561	73,785	368,001
21332200	2,066	369	28,335	4,783					
21332300	729	4,099	9,899	68,543					
21335100	5,602	913	66,158	13,239	21335000	8,026	1,594	13,822	232,796
21335200	2,424	681	29,742	7,976					
21336100	1,473	852	20,507	11,263	21336000	9,595	6,889	33,536	414,565
21336200	3,382	790	36,038	11,319					

21336300	2,261	714	28,094	10,628					
21336400	2,479	4,533	28,731	60,519					
21338100	3,870	2,533	49,440	36,141	21338000	3,870	2,533	23,907	225,800
21339100	2,715	455	33,515	6,430	21339000	7,878	1,008	16,533	207,100
21339200	1,027	293	13,726	3,549					
21339300	1,553	175	19,609	2,444					
21339400	2,583	85	32,971	1,102					
21340100	3,415	696	44,940	9,617	21340000	3,415	696	13,989	127,127
21345100	1,414	6,106	15,987	90,950	21345000	3,943	6,427	29,264	412,111
21345200	2,529	321	31,773	4,557					
21349100	872	257	12,031	4,030	21349000	7,132	1,240	4,487	229,013
21349200	2,771	263	36,059	3,944					
21349300	1,402	285	18,404	4,037					
21349400	2,087	435	26,801	6,085					
21350100	6,065	2,568	76,647	40,069	21350000	6,065	2,568	15,568	252,215
21351100	7,447	1,439	92,808	21,886	21351000	8,622	7,571	154,431	569,808
21351200	1,175	6,132	14,069	113,438					

21353100	3,310	4,091	41,235	69,867	21353000	5,057	7,840	507,986	882,577
21353200	-	3,057	-	56,813					
21353300	1,747	388	22,748	5,933					
21353400	-	304	-	5,881					
21355100	75	2,842	857	44,684	21355000	75	2,842	60,539	190,160
21356100	2,525	278	36,007	4,152	21356000	6,261	1,052	7,977	187,143
21356200	2,383	634	31,973	10,479					
21356300	1,353	140	19,321	2,088					
21357100	-	3,312	-	58,526	21357000	-	3,854	167,869	292,856
21357200	-	542	-	9,679					
21358100	1,268	3,085	15,221	56,560	21358000	1,268	3,085	89,665	224,920
21359100	1,340	4,863	14,827	89,926	21359000	1,340	4,863	167,339	372,579
21361100	1,291	276	19,563	4,191	21361000	3,198	1,704	40,273	179,892
21361200	1,030	25	14,846	228					
21361300	877	1,403	12,722	23,801					
21362100	765	3,362	9,569	55,028	21362000	5,669	3,786	181,291	449,579
21362200	1,211	5	17,685	28					

21362300	1,765	153	23,270	2,003					
21362400	1,928	266	27,772	3,941					
21363100	28	7,512	361	128,856	21363000	40	9,479	191,805	531,713
21363200	12	1,967	26	34,245					
21495100	1,167	3,483	12,157	54,973	21495000	1,174	7,559	148,203	392,961
21496100	643	4,611	6,646	74,463	21496000	3,789	7,429	164,286	489,284
21496200	1,556	2,588	19,694	43,630					
21496300	1,590	230	22,674	3,946					
21526100	1,051	84	12,494	1,064	21526000	4,508	682	11,536	120,812
21526200	2,783	82	33,572	1,003					
21526300	674	516	6,782	7,660					
21530400	708	2,388	8,710	38,886	21530000	7,217	3,216	132,263	373,264
21530600	892	563	11,371	8,925					
	T2 POP	T2 EMP	HB VMT	HBW(A) VMT		T1 POP	T1 EMP	Truck VMT	Total VMT
Sum	115,529	95,701	1,470,830	1,548,271		121,153	100,042	2,293,642	8,405,911

Table 4. VMT ANALYSIS APPENDIX - 2016 BASELINE VMT AND SED BY TAZ

T2 TAZ	Population	Employment	Home Based VMT	Home Based Work VMT	T1 TAZ	Population (T2)	Employment (T2)	Truck OD VMT (T2 level)	Total OD VMT (T2 level)
21326100	888	2,993	13,339	57,737	21326000	6,999	4,346	18,359	379,554
21326200	1,943	514	25,528	7,862					
21326300	1,915	307	24,909	5,286					
21326400	2,253	532	28,788	8,231					
21327100	3,632	1,003	52,474	14,863	21327000	5,737	1,734	10,712	222,789
21327200	2,105	731	33,025	15,497					
21328100	3,994	354	61,909	6,358	21328000	3,994	354	4,342	114,004
21332100	1,478	72	24,236	1,227	21332000	4,154	4,507	42,727	383,091
21332200	2,040	369	31,969	5,810					
21332300	636	4,066	9,735	84,240					
21335100	3,231	375	45,853	6,848	21335000	5,573	1,056	7,001	187,544
21335200	2,342	681	32,387	9,931					
21336100	1,223	781	18,265	12,783	21336000	7,404	6,508	28,169	425,634
21336200	2,377	725	28,911	13,003					

21336300	1,987	714	27,142	13,277					
21336400	1,817	4,288	22,249	71,067					
21338100	3,546	2,358	49,393	41,242	21338000	3,546	2,358	17,575	271,256
21339100	2,374	359	31,682	6,114	21339000	7,224	870	8,030	203,930
21339200	957	293	14,215	4,352					
21339300	1,469	155	20,738	2,688					
21339400	2,424	63	33,949	956					
21340100	3,046	696	43,229	12,004	21340000	3,046	696	6,323	121,980
21345100	1,362	4,961	17,816	90,822	21345000	3,871	5,247	19,648	418,115
21345200	2,509	286	35,384	4,975					
21349100	780	257	11,686	4,945	21349000	6,755	1,129	3,462	240,663
21349200	2,558	263	36,925	4,850					
21349300	1,325	189	19,646	3,179					
21349400	2,092	420	31,938	7,188					
21350100	5,628	2,175	83,417	41,669	21350000	5,628	2,175	12,244	256,856
21351100	6,310	827	89,217	15,394	21351000	7,358	6,379	78,699	486,290
21351200	1,048	5,552	14,298	128,476					

21353100	2,878	3,937	37,820	82,671	21353000	4,590	6,708	199,980	680,233
21353200	-	2,175	-	50,555					
21353300	1,712	321	25,402	5,926					
21353400	-	275	-	6,278					
21355100	7	2,793	6	53,520	21355000	7	2,793	30,039	172,816
21356100	2,496	268	39,672	4,849	21356000	6,179	1,040	4,909	200,730
21356200	2,345	634	35,873	12,799					
21356300	1,338	138	21,301	2,500					
21357100	-	3,279	-	71,003	21357000	-	3,790	85,114	247,794
21357200	-	511	-	11,155					
21358100	1,268	2,909	17,072	64,956	21358000	1,268	2,909	47,467	211,609
21359100	1,358	4,611	17,551	105,301	21359000	1,358	4,611	83,842	326,579
21361100	1,122	106	18,523	1,804	21361000	2,912	1,485	17,343	155,089
21361200	1,011	25	16,470	254					
21361300	779	1,354	12,342	27,510					
21362100	728	3,016	10,153	60,510	21362000	5,193	3,377	80,019	386,815
21362200	1,162	5	18,998	52					

21362300	1,572	153	22,747	2,492					
21362400	1,731	203	27,677	3,529					
21363100	29	7,293	149	151,761	21363000	78	9,200	123,252	529,732
21363200	49	1,907	46	40,389					
21495100	1,166	3,386	13,975	66,204	21495000	1,173	7,333	81,783	374,292
21496100	659	3,831	8,099	77,494	21496000	3,307	6,321	74,569	420,078
21496200	1,290	2,269	17,513	47,615					
21496300	1,358	221	21,003	4,668					
21526100	1,032	74	13,861	1,122	21526000	4,387	651	6,489	124,694
21526200	2,676	78	36,978	1,173					
21526300	679	499	7,985	9,124					
21530400	679	2,313	9,436	46,270	21530000	6,828	3,003	54,341	325,389
21530600	786	451	10,814	8,844					
	T1 POP	T1 EMP	HB VMT	HBW(A) VMT		T2 POP	T2 EMP	Truck VMT	Total VMT
Sum	103,199	86,394	1,475,720	1,725,203		108,569	90,580	1,146,440	7,867,557

Appendix F2

Link-Based VMT by Vehicle Type and Occupancy

ESA

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

Table: Carson* link-based VMT by Vehicle Type and Occupancy.

Scenario		2016	2040 No Project	2040 Plus Project
Total Volume		12,377,418	11,706,639	12,252,255
Total VMT		3,688,949	3,460,815	3,612,495
VMT by Vehicle Type	Auto	3,392,242	3,040,274	3,174,281
	Light-heavy Truck	54,979	67,879	69,458
	Medium-heavy Truck	48,581	57,992	59,363
	Heavy-heavy Truck	193,147	294,670	309,393

Table: Carson* link-based VMT by Speed Bin

	VMT		
Posted Speed	**2016**	**2040 No Project**	**2040 Plus Project**
25	193,530	202,399	257,347
30	130,055	121,582	130,585
35	146,911	143,699	157,186
40	772,571	726,902	775,667
45	342,191	344,022	355,208
50	45,615	43,243	45,959
65	2,058,075	1,878,968	1,890,543
Total	3,688,949	3,460,815	3,612,495

**All links within and touching Carson City Administrative Boundary as per SCAG 16R40s3 and 16R16s3 geographies*

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
16991	SAN DIEGO FWY	Interstate	65	Freeways	0.22748	137063.6203	31179.23233	26805.23742	802.4380945	683.0575245	2888.4993	16211.66133	3697.810959	6895.765128
17109	SAN DIEGO FWY	Interstate	65	Freeways	0.21305	129532.09	27596.81178	23680.42825	707.7996592	602.6667624	2605.917108	13983.40358	3437.683273	6259.341394
98209	S ALAMEDA ST	Other	45	Principal Arterial	0.260329	24348.41794	6338.599295	3299.945902	122.64434	130.4807867	2785.528266	2567.265686	351.7128764	377.322734
105700	E DOMINGUEZ ST	Other	35	Major Collector	0.714489	0	0	0	0	0	0	0	0	0
127099	S ALAMEDA ST	Other	45	Principal Arterial	1.084317	42499.89732	46083.36117	25530.16405	1336.726374	1046.77384	18169.6969	19620.97581	2705.055249	3188.952549
127105	0	Ramp-Other	30	Ramps	0.161127	2023.012583	325.9619485	193.1539961	15.64475948	9.768474545	107.3947183	135.4964475	24.48313776	33.1744108
140484	S MAIN ST	Other	40	Principal Arterial	0.380748	9885.236834	3763.784154	3633.856443	33.87996031	25.00651204	71.04123849	2676.612785	451.5466613	403.9103648
140494	AVALON BLVD	Other	40	Principal Arterial	0.280822	28407.62645	7977.486474	7607.417952	75.95124983	62.82330097	231.2939703	5795.26624	907.514981	864.2919711
140497	CATSKILL AVE	Other	30	Minor Collector	0.220085	2299.553939	506.0973287	494.8591591	3.40215184	1.913145644	5.922872059	362.9620021	62.29557139	53.90218908
140506	CAROLDALE AVE	Other	35	Major Collector	0.381099	428.572944	163.3287204	145.5999682	0.583359672	0.218968052	16.92642443	105.3390719	24.03695928	16.22393664
1645249	0	Centroid Connector	25	Tier 1 Centroid Co	0.376581	8674.421518	3266.62233	1193.78681	92.43822264	104.5076764	1875.889621	1022.964687	88.97783037	81.84429189
1645250	0	Centroid Connector	25	Tier 1 Centroid Co	0.473257	9116.09431	4314.255445	2502.52585	227.6760421	231.6415255	1352.412027	2128.790932	195.4050893	178.3298296
1645251	0	Centroid Connector	25	Tier 1 Centroid Co	0.585959	5288.307167	3098.731179	2233.524106	145.4540171	152.2414439	567.5116126	1840.299543	203.8609383	189.3636247
1645252	0	Centroid Connector	25	Tier 1 Centroid Co	0.485533	3660.445098	1777.26689	1508.818707	63.31557982	68.98001415	136.152589	1225.545955	152.902789	130.3699618
2665865	SR 91 HOV	HOV-Other	65	HOV	3.015281	7595.577161	22902.7995	22902.7995	0	0	0	0	7687.433771	15187.2231
2666003	I 405 HOV	HOV-Interstate	65	Freeways	1.97643	21351.96439	42200.66299	42200.66299	0	0	0	39109.32582	331.3615379	2690.14177
2671107	0	Ramp-Other	30	Ramps	0.12493	2023.012583	252.734962	149.7621673	12.13018179	7.573997685	83.2686152	105.0573224	18.9830283	25.72181659
2671108	0	Ramp-Other	30	Ramps	0.17896	6606.138207	1182.234494	613.8045324	73.00657362	55.07747049	440.345917	435.6840817	65.34300014	112.7774504
2671604	I 405 HOV	HOV-Interstate	65	Freeways	0.652351	16431.72766	10719.25397	10719.25397	0	0	0	9626.166613	76.85061858	990.1426977
2674144	E CARSON ST	Other	35	Minor Arterial	0.374498	12825.02882	4802.947645	4589.734043	59.51820391	49.11881277	104.576585	3416.201675	546.6695798	573.434407
2680637	S FIGUEROA ST	Other	40	Minor Arterial	0.346613	3103.393427	1075.676506	1054.241932	7.90912427	6.035216197	7.490233101	750.3307763	127.0624642	140.1077141
2680673	DOLORES ST	Other	35	Major Collector	0.319802	647.531155	207.0817584	202.4585456	1.544974655	2.013769848	1.064468312	173.7046208	16.81206501	11.94185952
2680744	WILMINGTON AVE	Other	45	Minor Arterial	0.576115	46544.16463	26814.7914	24366.41032	499.8891604	378.2899299	1570.201994	17377.10225	2938.386354	4050.921718
2731316	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.883277	0	0	0	0	0	0	0	0	0
2731325	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.36973	0	0	0	0	0	0	0	0	0
2731327	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.311649	0	0	0	0	0	0	0	0	0
2731330	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.671642	0	0	0	0	0	0	0	0	0
2731331	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.38912	0	0	0	0	0	0	0	0	0
2731350	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24311	0	0	0	0	0	0	0	0	0
2731375	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.62745	0	0	0	0	0	0	0	0	0
2751964	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.099233	0	0	0	0	0	0	0	0	0
2762157	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.098016	29845.0778	2925.295146	2735.186211	40.92456069	39.35566092	109.8287131	1916.741331	354.9752451	463.469635
104092	E LOMITA BLVD	Other	40	Principal Arterial	0.312573	35784.04043	11185.12487	10410.45189	145.8766641	111.3604358	517.4358804	7425.59236	1249.955568	1734.90396
2680681	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.297512	38545.46942	11467.7397	10817.42126	132.1983701	116.8046928	401.3153774	7910.159167	1285.385474	1621.876617
2731672	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.19387	0	0	0	0	0	0	0	0	0
2751962	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.30226	0	0	0	0	0	0	0	0	0
103322	S MAIN ST	Other	40	Principal Arterial	0.64411	11932.10756	7685.5898	7478.58717	61.59492532	47.186164	98.22154096	5276.387844	1089.738202	986.2155627
103324	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.507583	28755.85227	14595.98176	13675.83713	169.4220684	150.4844725	600.2380962	9490.534533	1805.771655	2375.977856
106383	FIGUEROA ST	Other	40	Minor Arterial	0.437034	11212.27512	4900.145443	4830.821636	24.93280543	16.93232249	27.45867884	3706.061463	551.1920043	561.4768945
1645446	0	Centroid Connector	25	Tier 1 Centroid Co	0.458134	7475.683476	3424.864774	3347.726439	21.95186491	21.01605383	34.17041551	2685.502519	356.9846122	305.2393092
1645447	0	Centroid Connector	25	Tier 1 Centroid Co	0.315395	2117.597412	667.8796358	662.8924366	1.766614444	1.905806458	1.314778305	527.5338964	86.46025701	48.89828318
1645448	0	Centroid Connector	25	Tier 1 Centroid Co	0.444379	5172.759621	2298.665748	2227.050742	14.21110844	13.54389381	43.86000333	1732.579632	268.1135589	226.3575519
1645449	0	Centroid Connector	25	Tier 1 Centroid Co	0.307301	5689.345042	1748.341421	1706.457209	11.12232886	9.515873547	21.24600937	1309.326678	191.0456563	206.0848747
1658417	W 234TH ST	Other	35	Major Collector	0.06829	2608.446051	178.1307808	172.1725427	2.235272104	1.779058779	1.943907219	121.8127296	22.35720544	23.13125443
2744306	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.32345	0	0	0	0	0	0	0	0	0
2759868	W LOMITA BLVD	Other	40	Principal Arterial	0.114922	41319.78388	4748.552203	4556.422793	51.24753843	38.88204247	101.9998289	3357.513169	523.2496158	669.3009913
106384	W LOMITA BLVD	Other	40	Principal Arterial	0.453256	41513.66736	18816.31881	18017.69568	212.9333649	161.7527621	423.9370024	12981.37001	2201.267887	2814.208015
103347	W LOMITA BLVD	Other	40	Principal Arterial	0.327773	40161.53592	13163.86711	12615.8882	146.1648719	110.8968144	290.9172301	9215.522221	1483.23335	1902.055067
2759870	FIGUEROA ST	Other	40	Principal Arterial	0.29637	9036.697481	2678.206032	2621.202408	16.11468842	10.82791855	30.06101715	1865.811844	349.6761286	397.5148646
2759871	FRIGATE AVE	Other	35	Major Collector	0.297408	1158.247961	344.4722096	344.4722096	0	0	0	327.1547818	8.297737923	6.243881697
97009	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.094509	43736.58738	4133.501137	3928.98004	40.39796042	34.61404638	129.5090898	2809.939927	500.126132	618.9139816
106566	S FIGUEROA ST	Other	40	Minor Arterial	0.175393	407.987727	71.5581914	63.27332309	0.397285841	0.174198574	7.713383893	39.94765578	9.653705788	7.591670798
1645240	0	Centroid Connector	25	Tier 1 Centroid Co	0.290351	3052.642077	886.3376797	868.5902332	6.412088837	4.934036456	6.40132117	642.6617434	108.7698733	117.1586168
1645459	0	Centroid Connector	25	Tier 1 Centroid Co	0.285446	8034.789552	2293.498538	2231.867915	19.27774005	15.75378529	26.59909769	1668.674909	278.667326	284.5256801
1657606	0	Ramp-Other	30	Ramps	0.168191	6631.561658	1115.368987	911.3974215	39.91773511	35.44801354	128.6058167	479.2931828	157.9339703	274.1702685
1658415	W 234TH PL	Other	35	Minor Collector	0.433618	0	0	0	0	0	0	0	0	0
2670362	0	Ramp-Other	30	Ramps	0.061713	6631.561658	409.2535646	334.4118834	14.6467004	13.00666064	47.18832021	175.8632756	57.9494688	100.5991389
2670363	0	Ramp-Other	30	Ramps	0.137381	4225.29667	580.4754818	443.9665263	6.303756997	6.432194768	123.7730038	328.559351	57.8468704	57.56030503
2674503	W 234TH ST	Other	30	Major Collector	0.212411	71.336567	15.15267153	15.15266941	1.06206E-06	4.24822E-07	6.37233E-07	0.00056565	6.18116E-05	5.7351E-05
2680639	FIGUEROA ST	Other	40	Minor Arterial	0.23064	11212.27512	2585.999133	2549.414238	13.1580203	8.93585135	14.49102286	1955.834136	290.8856608	296.3134011
2731351	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.191534	0	0	0	0	0	0	0	0	0
2731693	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.407365	0	0	0	0	0	0	0	0	0
91693	0	Ramp-Other	30	Ramps	0.161851	4225.29667	683.8684913	523.0448624	7.426568257	7.57788308	145.8191776	387.0816162	68.15042707	67.81281931
1657608	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.107665	51403.50286	5534.358135	5234.683353	67.69427261	55.78082059	176.1996892	3716.427947	662.7320212	855.5233843
2680635	S FIGUEROA ST	Other	40	Minor Arterial	0.215624	407.987727	87.97194565	77.78672478	0.488413804	0.214155601	9.482651466	49.11070185	11.86803725	9.333020269
97003	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.049963	45109.36684	2253.799295	2161.796474	22.39116846	19.05575825	50.55589508	1547.383469	275.4017859	339.0112185

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2670360	0	Ramp-Other	30	Ramps	0.143038	11934.22861	1707.048192	1646.196404	14.78840645	9.571753661	36.49162856	1199.32967	177.9210883	268.9456451
91726	0	Ramp-Other	30	Ramps	0.115158	2258.919752	260.1326808	249.5662774	2.014015305	1.796220665	6.756167391	194.0643511	22.89122136	32.61070523
2670361	0	Ramp-Other	30	Ramps	0.115966	9675.30886	1122.006867	1083.312697	9.961341169	5.951337779	22.78149101	776.913277	121.1951255	185.2042948
2674501	S FIGUEROA ST	Other	40	Minor Arterial	0.033498	3103.393427	103.957473	101.8859542	0.764367882	0.583266272	0.723884645	72.514823	12.27980032	13.54054294
2674502	W 234TH ST	Other	30	Major Collector	0.064152	3059.372399	196.2648581	189.5388192	1.466808793	1.10745944	4.15177066	137.0964581	22.56303605	25.30314914
2674500	CAROLDALE AVE	Other	35	Minor Collector	0.05101	3052.642077	155.7152723	152.5973315	1.126500861	0.866830835	1.124609155	112.9053302	19.10911702	20.58288432
2731694	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.149615	0	0	0	0	0	0	0	0	0
1645241	0	Centroid Connector	25	Tier 1 Centroid Co	0.267139	2537.109484	677.7608904	654.453267	8.744007372	6.959378337	7.604237725	476.5102093	87.45755156	90.48550667
2674504	W 234TH ST	Other	30	Major Collector	0.221099	71.336567	15.77244363	15.77244142	1.1055E-06	4.42198E-07	6.63297E-07	0.000588787	6.43398E-05	5.96967E-05
2731352	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158546	0	0	0	0	0	0	0	0	0
1658416	MEHDEN AVE	Other	35	Minor Collector	0.049629	2537.109484	125.9142066	121.5841236	1.624458959	1.292911134	1.41271291	88.52591789	16.24783662	16.81036917
103346	E LOMITA BLVD	Other	40	Principal Arterial	0.285637	36359.5569	10385.63476	9832.732834	127.2577863	95.22250677	330.4216285	6980.595868	1210.425759	1637.045803
2759874	N WILMINGTON BLVD	Other	35	Minor Arterial	0.266038	7789.780335	2072.377581	1940.94075	20.45091091	17.84974139	93.13617874	1445.32023	229.3880334	203.7135565
104087	AVALON BLVD	Other	40	Principal Arterial	0.088825	21698.59906	1927.378062	1829.049922	20.15685002	17.66281261	60.50847736	1423.169404	207.5209258	185.5983998
140489	DOLORES ST	Other	35	Major Collector	0.196568	718.896998	141.3121451	138.4700344	0.949647528	1.237792038	0.6546711	106.7730313	10.33443287	7.34071972
140490	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.256589	27299.89493	7004.852741	6605.306234	69.0602032	60.7131711	269.7731322	4774.905831	815.0964908	995.2044414
140491	PANAMA AVE	Other	30	Minor Collector	0.04127	6785.28756	280.0288176	259.7862164	1.267219493	0.691379142	18.28400261	196.8880647	35.90805394	26.99009768
140495	E 231ST ST	Other	30	Minor Collector	0.394053	0.024136	0.009510863	0.008851218	0.000264016	0.000196632	0.000198997	0.007315988	0.000863764	0.000672254
140502	S MAIN ST	Other	40	Principal Arterial	0.372401	7276.79725	2709.886573	2615.298847	20.94777634	14.7566909	58.88325812	1953.663665	319.728826	268.9157616
153311	E 238TH PL	Other	35	Minor Collector	0.285245	0.000763	0.000217642	5.13441E-06	0	3.42294E-06	0.000209085	0	5.13441E-06	0
1645246	0	Centroid Connector	25	Tier 1 Centroid Co	0.303456	6709.052284	2035.90217	1971.927641	13.21049328	7.54486355	43.21917246	1400.340961	271.6994367	299.8872421
1645471	0	Centroid Connector	25	Tier 1 Centroid Co	0.468619	12092.4614	5666.757167	5378.252449	63.12897528	62.05799201	163.3177512	3898.905491	654.6933284	824.6536297
2731697	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.264273	0	0	0	0	0	0	0	0	0
2731698	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.252453	0	0	0	0	0	0	0	0	0
2731699	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.222021	0	0	0	0	0	0	0	0	0
2731703	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.229697	0	0	0	0	0	0	0	0	0
140487	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.079885	28780.43911	2299.125378	2177.554411	22.27884773	19.38934721	79.90277266	1583.556436	268.2776002	319.4627157
1645473	0	Centroid Connector	25	Tier 1 Centroid Co	0.356756	12944.81966	4618.142084	4438.057448	49.94706653	47.41168012	82.7258895	3356.820458	505.8336051	575.4033847
2744305	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.319914	0	0	0	0	0	0	0	0	0
103323	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.186038	38967.05435	7249.352858	6878.664637	75.93777592	67.69703463	227.0534098	5039.896207	825.5963541	1011.86981
2680669	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.129753	28780.43911	3734.348316	3536.886993	36.18635952	31.49309593	129.7818672	2572.087354	435.7491827	518.8864712
2680667	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.012607	28780.43911	362.8349959	343.6493517	3.515922055	3.059917385	12.60980478	249.9079426	42.33805728	50.41580343
1658420	CATSKILL AVE	Other	30	Minor Collector	0.311341	71.333333	22.20899123	22.20899123	0	0	0	0	0	0
1658422	0	Centroid Connector	25	Tier 1 Centroid Co	0.124326	6785.320833	843.5917979	782.610537	3.817515366	2.08279444	55.08095105	593.128777	108.1736343	81.3081256
2674506	E 236TH ST	Other	30	Minor Collector	0.086907	71.365843	6.202191318	6.202002034	9.03833E-06	7.82163E-06	0.000172423	0.002017111	0.000357101	0.000261938
2680671	DOLORES ST	Other	35	Major Collector	0.166793	647.531155	108.0036639	105.5924234	0.805782821	1.050283345	0.555174337	90.59578993	8.768346539	6.228286799
2751963	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.137632	0	0	0	0	0	0	0	0	0
2674505	DOLORES ST	Other	35	Major Collector	0.063478	647.531155	41.10398266	40.1863139	0.30666444	0.399716332	0.211287983	34.47890231	3.337053123	2.370358405
2731702	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.045301	0	0	0	0	0	0	0	0	0
140493	PANAMA AVE	Other	30	Minor Collector	0.156023	6785.288323	1058.66104	982.1329039	4.790777488	2.613790442	69.1235682	744.3437489	135.7519364	102.0372186
2680675	E 236TH ST	Other	30	Minor Collector	0.098392	0.03251	0.003198724	0.002984426	1.02328E-05	8.85528E-06	0.00019521	0.002283678	0.000404293	0.000296553
2731700	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13903	0	0	0	0	0	0	0	0	0
2731701	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.069781	0	0	0	0	0	0	0	0	0
1658421	E 236TH ST	Other	30	Minor Collector	0.068062	0.03251	0.002212696	0.002064457	7.07845E-06	6.12558E-06	0.000135035	0.001579719	0.000279667	0.000205139
1645242	0	Centroid Connector	25	Tier 1 Centroid Co	0.264567	2228.19647	589.5072555	575.9981504	4.089593083	2.299684887	7.119827091	436.3163642	74.88572507	64.79606117
104088	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.209739	38545.46942	8084.488211	7626.028924	93.19675826	82.3445759	282.9179527	5576.477163	906.1666889	1143.385072
2744304	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.277607	0	0	0	0	0	0	0	0	0
2680677	AVALON BLVD	Other	35	Principal Arterial	0.262291	9973.904555	2616.0654	2433.633394	13.28652372	10.02846793	159.1170138	1799.530862	319.540685	293.7534271
2744303	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.12804	0	0	0	0	0	0	0	0	0
2680679	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.006677	38545.46942	257.3680993	242.7731377	2.966900552	2.621423451	9.00663763	177.5260586	28.84763912	36.39943992
2680682	AVALON BLVD	Other	40	Principal Arterial	0.204546	21698.5983	4438.361487	4211.931832	46.41714657	40.67388046	139.3386289	3277.271139	477.8786935	427.3955562
153310	AVALON BLVD	Other	40	Principal Arterial	0.179513	21698.5983	3895.180476	3696.462013	40.73646629	35.69607963	122.2859175	2876.188114	419.3943559	375.0895079
2680684	E 231ST ST	Other	30	Minor Collector	0.046755	0.024136	0.001128479	0.001050211	3.13259E-05	2.33307E-05	2.36113E-05	0.000868053	0.000102487	7.9764E-05
104414	WILMINGTON AVE	Other	45	Minor Arterial	0.2044	38312.35876	7831.046131	7407.446884	95.98764382	72.00945877	255.602144	5240.83041	916.8870891	1249.729385
104510	E LOMITA BLVD	Other	25	Principal Arterial	1.176717	2443.683789	2875.524257	2260.378418	22.62660756	21.34327647	571.1759548	1733.837879	268.4491443	258.0913965
105791	ALAMEDA ST	Other	45	Principal Arterial	0.653524	33173.97418	21679.9883	10904.6328	388.4919021	301.4273272	10085.43627	8139.946257	1266.407257	1489.129947
1645480	0	Centroid Connector	25	Tier 1 Centroid Co	0.55505	18956.42688	10521.76474	7705.915943	601.2031169	544.2410457	1670.404636	6208.081833	729.8520691	767.9820409
2680748	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.400794	22568.28636	9045.233761	8789.968552	55.69728729	44.02073966	155.5471827	5972.817095	1184.923558	1632.227898
2731318	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.307885	0	0	0	0	0	0	0	0	0
2731319	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.867158	0	0	0	0	0	0	0	0	0
2680726	EUBANK AVE	Other	35	Major Collector	0.261465	1010.12255	264.1116925	250.6968082	1.994854277	1.658743111	9.761286964	186.6393202	33.0012343	31.05625343
104413	E LOMITA BLVD	Other	35	Principal Arterial	0.096065	3453.806339	331.789906	276.6417672	2.580124914	2.351865347	50.21614852	210.120574	34.04069346	32.48049959
1645484	0	Centroid Connector	25	Tier 1 Centroid Co	0.110303	3961.879575	437.0072028	429.7838317	1.600455056	0.862629685	4.760286346	291.5701612	64.94008052	73.27359009
1645487	0	Centroid Connector	25	Tier 1 Centroid Co	0.640365	19319.95296	12371.82168	10619.37592	457.4013012	391.4000486	903.6444093	8666.236425	1029.606129	923.5333624
2680742	WILMINGTON AVE	Other	45	Minor Arterial	0.447335	38312.35876	17138.45901	16211.40045	210.0715883	157.5946734	559.3922949	11469.70094	2006.632515	2735.066997
2680746	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.548416	22568.28636	12376.80933	12027.52385	76.21192809	60.23462916	212.8389241	8172.748244	1621.359198	2233.416406

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
104610	WILMINGTON AVE	Other	45	Minor Arterial	0.363638	46544.16463	16925.22694	15379.83339	315.5250159	238.7728032	991.0957235	10968.25236	1854.679946	2556.90109
2680756	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.407353	22568.28636	9193.259152	8933.816523	56.60877426	44.74113974	158.0927147	6070.562339	1204.314851	1658.939333
2731320	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.651086	0	0	0	0	0	0	0	0	0
2731317	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.33313	0	0	0	0	0	0	0	0	0
98172	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.200457	29845.0778	5982.65476	5593.854292	83.69668893	80.48806033	224.6157192	3920.015272	725.9760927	947.8629267
2676237	SEPULVEDA-ALAMEDA CONNECTOR	0	30	Minor Collector	0.205237	7276.979675	1493.505478	1226.145665	57.17253183	59.86602384	150.3212573	954.9784317	136.520417	134.6468159
2762158	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.063151	29845.0778	1884.746508	1762.260696	26.36739851	25.35656773	70.76184561	1234.942578	228.7079834	298.6101343
103410	S MAIN ST	Other	40	Minor Arterial	0.251568	10189.19085	2563.274364	2205.73336	80.53481176	82.4078442	194.5983477	1628.821161	271.5005719	270.4436753
103422	E GARDENA BLVD	Other	40	Minor Arterial	0.64174	1567.736431	1006.079177	913.2928136	26.75655418	34.34581891	31.68399049	702.7380647	114.3034489	96.2513001
103729	S BROADWAY	Other	40	Principal Arterial	0.250879	8746.59989	2194.338234	2050.785803	42.10720145	39.94652865	61.49870108	1535.270146	261.8657225	253.6499335
105047	S CENTRAL AVE	Other	40	Principal Arterial	0.198006	15713.22017	3111.311872	2919.549599	48.62598736	41.90626626	101.2300202	2039.797752	390.4487478	459.536197
1646199	0	Centroid Connector	25	Tier 1 Centroid Co	0.655544	10486.05131	6874.068022	6122.920699	194.0234397	193.3149953	363.808888	4664.797532	713.0023713	745.1207955
1646201	0	Centroid Connector	25	Tier 1 Centroid Co	0.312645	5323.180337	1664.265716	1557.690341	28.40445011	25.8681582	52.30276692	1177.523944	204.8857848	175.2806122
2676599	AVALON BLVD	Other	40	Principal Arterial	0.222959	36894.47854	8225.95604	7865.216443	94.71332098	82.99680056	183.0294758	5860.884137	930.0082945	1008.997024
2732668	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.391113	0	0	0	0	0	0	0	0	0
2744552	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.443655	0	0	0	0	0	0	0	0	0
12798	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.245106	21854.54645	5356.680461	4687.245715	93.93825053	65.25790995	510.238586	3030.063185	618.6144571	1038.568073
13455	SAN DIEGO FWY	Interstate	65	Freeways	0.897504	118883.7298	106698.6231	89251.50862	3119.06106	2649.621701	11678.4317	51547.14904	13206.38911	24471.04534
17813	GARDENA FWY	State Route-Limited Access	65	Freeways	0.37221	100783.3798	37512.5818	32263.48223	769.6333584	636.6063876	3842.859823	22541.83501	3633.734461	6087.912762
17893	SAN DIEGO FWY	Interstate	65	Freeways	0.246926	119662.754	29547.84521	24564.68693	902.1378101	770.7066589	3310.313809	14417.9095	3504.712553	6639.760229
18023	GARDENA FWY	State Route-Limited Access	65	Freeways	0.556235	102692.8815	57121.37492	48198.40898	1200.951951	1002.792511	6719.221483	33364.33334	5576.933702	9254.546172
18057	SAN DIEGO FWY	Interstate	65	Freeways	0.927695	124055.6305	115085.7881	96613.18395	3367.960377	2869.16068	12235.4831	57904.00948	13421.29663	25260.04699
93128	0	Ramp-Other	30	Ramps	0.394618	5697.54846	2248.355178	2081.834418	32.95206151	27.7438158	105.8248831	1560.670376	222.6842349	298.4798069
93163	0	Ramp-Other	30	Ramps	0.325105	5467.169668	1777.404195	1577.712875	37.3054057	32.03157872	130.3543359	1144.814411	185.9753955	246.9230685
98384	E ARTESIA BLVD	Other	40	Minor Arterial	0.790496	1457.410002	1152.076777	1138.326401	3.194040984	3.576701126	6.97963384	133.0922116	364.6448952	640.589295
98457	E ARTESIA BLVD	Other	45	Minor Arterial	0.692127	3550.245326	2457.220647	2407.107859	17.80162964	14.32507295	17.98608494	914.9735499	623.6591955	868.4751139
104013	E UNIVERSITY DR	Other	45	Minor Arterial	0.629985	1443.248081	909.2246423	816.8293564	25.41206782	25.66070778	41.32251035	573.3501492	99.05382105	99.48645632
104057	E WALNUT ST	Other	40	Minor Arterial	0.754678	2026.431254	1529.303086	1471.855849	16.61713111	14.99570317	25.83440294	1042.043748	190.6133	239.198801
104058	AVALON BLVD	Other	40	Principal Arterial	0.124587	19587.09023	2440.29681	2338.680726	28.91558832	23.99994295	48.70055285	1716.045003	272.9952238	298.6013575
104081	E DEL AMO BLVD	Other	45	Principal Arterial	0.353863	30993.65531	10967.50785	10291.24076	139.5278706	129.589453	407.1497603	6728.678328	1460.227796	1979.662133
104143	E 223RD ST	Other	45	Principal Arterial	0.247524	25739.644	6371.179642	6083.755867	57.37879611	41.43421216	188.6107675	3986.152083	813.8744285	1246.105708
104163	E 213TH ST	Other	30	Major Collector	0.384216	2657.132024	1020.912638	904.0790969	33.7142993	34.15748784	48.96175373	622.0510784	139.367286	115.253325
104637	S MAIN ST	Other	45	Principal Arterial	0.446708	31095.01966	13890.39404	13019.5168	149.0389929	127.7999367	594.0383097	9827.534877	1582.223095	1603.50492
105022	S CENTRAL AVE	Other	40	Principal Arterial	0.456614	9898.937339	4519.993374	3886.803319	130.0470813	117.7120367	385.4309367	3018.680289	449.9904107	418.1326191
140580	E DOMINGUEZ ST	Other	35	Major Collector	0.241284	13319.81339	3213.857854	3019.611365	69.55163164	64.61599032	60.07886716	2392.018276	308.888859	318.7042296
140624	LYSANDER DR	Other	30	Minor Collector	0.146753	71.333333	10.46838062	10.46838062	0	0	0	0	0	0
146823	SUDBURY CT	Other	30	Minor Collector	0.299862	71.333333	21.3901559	21.3901559	0	0	0	0	0	0
153299	E TURMONT ST	Other	30	Major Collector	0.152875	394.534836	60.31451305	60.31451305	0	0	0	41.16479052	4.698741999	3.545897253
1646442	0	Centroid Connector	25	Tier 1 Centroid Co	0.03286	20098.49196	660.4364456	629.4687062	6.538136258	6.2120534	18.21754979	458.6110128	83.55143076	87.30626262
1646443	0	Centroid Connector	25	Tier 1 Centroid Co	0.552552	3741.174737	2067.193583	1948.151663	20.28261025	15.06677907	83.6925307	1381.826865	286.2953055	280.0294929
1646444	0	Centroid Connector	25	Tier 1 Centroid Co	0.388738	7377.138315	2867.773994	2836.839033	14.69507893	7.478154072	8.761728463	2103.274875	386.56565	346.9985074
1646445	0	Centroid Connector	25	Tier 1 Centroid Co	0.555034	3671.309615	2037.701661	1968.649563	17.95190758	12.02965539	39.070535	1426.365264	288.539706	253.7445918
1646446	0	Centroid Connector	25	Tier 1 Centroid Co	0.643117	12815.33531	8241.759999	7769.36353	92.91014317	93.36743666	286.1188895	5878.874768	955.5900967	934.8986652
1646447	0	Centroid Connector	25	Tier 1 Centroid Co	0.591656	5716.301282	3382.083951	3350.223177	15.75021286	6.953095163	9.15746638	2398.959139	475.1589247	476.105114
1646448	0	Centroid Connector	25	Tier 1 Centroid Co	0.519087	30000.29039	15572.76074	15572.76074	0	0	0	12542.79338	1529.209541	1500.757811
2666005	I 405 HOV	HOV-Interstate	65	Freeways	2.026125	16431.72766	33292.7342	33292.7342	0	0	0	29897.73424	238.688926	3075.266035
2666376	SR 91 HOV	HOV-Other	65	HOV	2.060552	6950.283392	14321.42034	14321.42034	0	0	0	0	5411.536682	8909.883662
2671597	I 405 HOV	HOV-Interstate	65	Freeways	0.639736	21351.96439	13659.62029	13659.62029	0	0	0	12659.00824	107.2559639	870.7520809
2671599	I 405 HOV	HOV-Interstate	65	Freeways	1.100335	13860.66364	15251.37333	15251.37333	0	0	0	13486.75203	119.2260309	1624.122127
2674510	E CARSON ST	Other	40	Minor Arterial	0.149547	24390.34326	3647.502664	3498.290514	37.30804551	33.41428518	78.48981937	2630.470672	372.611237	463.2055474
2683242	S FIGUEROA ST	Other	40	Minor Arterial	0.504445	5158.091615	2601.973525	2477.805787	7.625577529	4.093388566	112.4487713	1949.427551	256.7099741	243.7556394
2683258	E 220TH ST	Other	25	Major Collector	0.143918	0	0	0	0	0	0	0	0	0
2683285	BRENNER DR	Other	25	Minor Collector	0.196496	38.666667	7.597845399	7.597845399	0	0	0	0	0	0
2683293	E VICTORIA ST	Other	40	Minor Arterial	0.270733	6735.84483	1823.615478	1453.049326	65.84945437	48.45561041	256.261088	800.2325134	283.2788335	299.1473978
2683311	GALWAY AVE	Other	30	Major Collector	0.309879	71.333333	22.1047019	22.1047019	0	0	0	0	0	0
2683335	S WILMINGTON AVE	Other	45	Minor Arterial	0.376928	9687.470666	3651.478943	2745.116497	44.75716611	44.17752246	817.4277579	2093.122953	309.7475941	292.2401686
2731329	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.488001	0	0	0	0	0	0	0	0	0
2732669	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.507975	0	0	0	0	0	0	0	0	0
2732883	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.286889	0	0	0	0	0	0	0	0	0
2732895	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.317617	0	0	0	0	0	0	0	0	0
2732896	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158072	0	0	0	0	0	0	0	0	0
2732901	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.620313	0	0	0	0	0	0	0	0	0
2732904	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.635912	0	0	0	0	0	0	0	0	0
2732908	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.477931	0	0	0	0	0	0	0	0	0
2744649	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.278984	0	0	0	0	0	0	0	0	0
2744651	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24717	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2759878	E WATSON CENTER RD	Other	30	Major Collector	0.262043	1034.237413	271.0146744	266.7574714	1.146242379	0.293066795	2.817893813	191.9202222	30.66000659	44.17724266
2761703	SAN DIEGO FWY	Interstate	65	Freeways	0.377174	115563.804	43587.66222	36172.07881	1323.466368	1127.970966	4964.14608	20802.13788	5348.980437	10020.96049
2768556	I 405 HOV	HOV-Interstate	65	Freeways	1.430456	21253.84062	30402.68384	30402.68384	0	0	0	28510.49735	194.9057094	1689.651685
103293	S MAIN ST	Other	35	Principal Arterial	0.258189	8603.492177	2221.327042	2164.763534	21.33225912	16.90116399	18.33008494	1653.672429	260.9866237	229.879676
103575	E 220TH ST	Other	30	Major Collector	0.269547	397.477137	107.1387698	101.2342167	0.956443324	0.5392188	4.408891059	74.97663933	13.27268755	12.98488952
103595	DOLORES ST	Other	30	Major Collector	0.257506	0	0	0	0	0	0	0	0	0
103597	E CARSON ST	Other	35	Minor Arterial	0.203562	27677.20626	5634.027461	5396.61836	54.34945115	45.78313084	137.2765192	3971.537879	631.2840479	726.2817034
103599	E 213TH ST	Other	30	Major Collector	0.198949	1510.56181	300.5247615	297.8724117	0.797045599	0.572078048	1.283226223	239.4568252	22.8903971	21.33349425
103852	GRACE AVE	Other	30	Major Collector	0.257355	0.073082	0.018808018	0.018505111	9.72802E-05	4.7096E-05	0.000158531	0.01319665	0.002410902	0.00289756
104105	S MAIN ST	Other	35	Principal Arterial	0.193151	18843.65014	3639.669868	3522.165268	36.08799908	29.47513155	51.94146964	2659.68195	471.6538811	389.4773802
104156	AVALON BLVD	Other	35	Principal Arterial	0.156938	23867.35705	3745.69528	3563.690758	39.60931597	32.45199118	109.943215	2550.097492	448.4461344	499.2854842
105905	MONETA AVE	Other	30	Major Collector	0.18893	0	0	0	0	0	0	0	0	0
106732	S FIGUEROA ST	Other	40	Minor Arterial	0.187953	7062.845853	1327.483067	1316.791505	3.113690671	2.12160651	5.456264877	1091.765205	114.1894483	90.91383293
140483	W 228TH ST	Other	35	Major Collector	0.353112	731.548779	258.3186525	253.9430104	1.370602462	0.546220831	2.458818787	181.5706477	37.83938446	34.53297823
1643165	0	Ramp-Other	35	Ramps	0.813291	0	0	0	0	0	0	0	0	0
1646449	0	Centroid Connector	25	Tier 1 Centroid Co	0.323456	1003.09589	324.4573842	308.0834554	1.295242678	0.513446615	14.56523953	231.480306	42.59666685	34.00648252
1646450	0	Centroid Connector	25	Tier 1 Centroid Co	0.328975	2791.719766	918.40601	897.1579816	3.757848199	1.378911872	16.11126836	660.8609547	117.4297771	118.8672505
1646451	0	Centroid Connector	25	Tier 1 Centroid Co	0.381001	9255.808618	3526.472339	3392.852013	33.20621188	27.2439981	73.17011619	2616.704754	437.1643345	338.9829246
1646452	0	Centroid Connector	25	Tier 1 Centroid Co	0.329884	16485.40057	5438.269881	5378.926166	19.8723738	14.36228968	25.10905072	3944.026525	694.7529441	740.1466969
1646453	0	Centroid Connector	25	Tier 1 Centroid Co	0.474068	16030.30389	7599.454103	7089.302313	120.8374638	114.1978949	275.1164305	4592.217859	1230.827642	1266.256813
1646454	0	Centroid Connector	25	Tier 1 Centroid Co	0.687316	5009.4819	3443.097062	3443.091668	0.00188462	0.001074962	0.002434473	3443.005429	0.039610708	0.046626143
2662654	W DEL AMO BLVD	Other	40	Principal Arterial	0.486215	27667.79161	13452.4953	12608.7542	198.9261266	181.3937976	463.4211679	8498.944836	1676.122323	2433.687044
2674509	CIVIC CENTER DR	Other	30	Minor Collector	0.137706	71.333333	9.823027954	9.823027954	0	0	0	0	0	0
2683232	W 223RD ST	Other	40	Principal Arterial	0.058491	24031.57678	1405.630958	1342.78427	14.48491491	10.98555256	37.37622038	903.8151685	175.8154121	258.9813313
2732916	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.31518	0	0	0	0	0	0	0	0	0
2732917	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.329491	0	0	0	0	0	0	0	0	0
2732918	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.236946	0	0	0	0	0	0	0	0	0
2732923	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.156588	0	0	0	0	0	0	0	0	0
97016	S FIGUEROA ST	Other	40	Minor Arterial	0.24703	15736.61857	3887.416885	3708.438309	32.9036228	26.36312979	119.7118232	2481.326408	508.8192436	692.1074769
97018	W 220TH ST	Other	30	Major Collector	0.249754	397.476985	99.27146691	93.80052662	0.886199121	0.499618391	4.08512278	69.47105915	12.29806603	12.03140119
105915	W CARSON ST	Other	35	Minor Arterial	0.250322	23885.25672	5979.005232	5642.285464	71.23088061	60.62897517	204.8599119	4031.48452	704.7803497	858.7097364
105916	MONETA AVE	Other	30	Major Collector	0.25253	71.333333	18.01380658	18.01380658	0	0	0	0	0	0
105943	W 223RD ST	Other	40	Principal Arterial	0.247532	24031.57678	5948.584264	5682.619136	61.29968639	46.49049932	158.1749429	3824.916248	744.0450768	1096.000528
140479	W 228TH ST	Other	35	Minor Arterial	0.132714	2066.08377	274.1982415	269.8780376	1.379895806	0.519428528	2.420879471	189.4829181	38.48559802	32.44258959
1646456	0	Centroid Connector	25	Tier 1 Centroid Co	0.391878	3464.58609	1357.695068	1318.054776	6.236161917	2.45369472	30.95043548	934.7169529	190.7779856	192.5598376
2732924	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.264009	0	0	0	0	0	0	0	0	0
2751967	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.15682	0	0	0	0	0	0	0	0	0
2751968	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.199586	0	0	0	0	0	0	0	0	0
140478	W 228TH ST	Other	35	Major Collector	0.250605	6565.25208	1645.284998	1561.060188	20.08292961	16.20809189	47.93378772	1089.292034	235.3952375	236.3729165
140482	S FIGUEROA ST	Other	40	Minor Arterial	0.214418	6391.490293	1370.450566	1296.319868	17.91770552	15.16816518	41.04482671	892.5050703	185.3099968	211.0716437
106779	W 223RD ST	Other	40	Principal Arterial	0.106651	36282.1526	3869.527857	3710.725889	34.58029638	26.03479915	98.18687183	2516.978019	483.1682979	710.5795723
2683216	S FIGUEROA ST	Other	40	Minor Arterial	0.1721	6391.490293	1099.975479	1040.475377	14.38142842	12.17454331	32.94413098	716.3583403	148.7368152	169.4140878
127351	S FIGUEROA ST	Other	40	Minor Arterial	0.244286	6796.454893	1660.27878	1526.608272	18.73779445	15.78594991	99.14676388	1121.692535	203.3664695	175.6549515
127355	0	Ramp-Other	30	Ramps	0.243181	12056.28323	2931.859012	2739.914246	31.9005738	26.07018482	133.9740068	1717.14096	401.6415216	621.1317646
2670355	0	Ramp-Other	30	Ramps	0.178621	2538.24067	453.3830867	390.2738835	4.304713943	3.769033851	55.03545539	295.859276	48.50376412	45.91084363
106746	W CARSON ST	Other	35	Minor Arterial	0.106256	26081.56553	2771.322827	2650.15265	30.00417039	25.25337559	65.91263181	1937.574027	309.0201086	377.5966308
103295	W 223RD ST	Other	40	Principal Arterial	0.268112	24031.57678	6443.154115	6155.076442	66.39618925	50.35575503	171.3257287	4142.922714	805.9055542	1187.122851
140477	MONETA AVE	Other	30	Major Collector	0.191398	71.333333	13.65305727	13.65305727	0	0	0	0	0	0
1658418	0	Centroid Connector	25	Tier 1 Centroid Co	0.174151	1691.774603	294.6242389	283.0116492	1.401349908	0.512280492	9.698959251	207.2329309	42.82407955	32.95463884
2732921	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.239263	0	0	0	0	0	0	0	0	0
2683222	W 228TH ST	Other	35	Minor Arterial	0.044949	2494.656715	112.1323247	108.578081	0.536162685	0.201752058	2.816328904	76.60039945	15.86977157	12.90154799
140507	W 228TH ST	Other	35	Minor Arterial	0.06797	2494.656715	169.5618169	164.1872382	0.810762813	0.305081034	4.258734913	115.831924	23.99760558	19.50918189
1646457	0	Centroid Connector	25	Tier 1 Centroid Co	0.229892	0	0	0	0	0	0	0	0	0
2683226	MONETA AVE	Other	30	Major Collector	0.104073	71.333333	7.423873965	7.423873965	0	0	0	0	0	0
2683228	MONETA AVE	Other	30	Major Collector	0.080226	71.333333	5.722787973	5.722787973	0	0	0	0	0	0
103576	S MAIN ST	Other	35	Principal Arterial	0.257449	8603.492025	2214.960418	2158.559067	21.27110575	16.85271812	18.27752714	1648.93281	260.2386054	229.2208139
103577	W 220TH ST	Other	30	Major Collector	0.268797	397.476985	106.8406211	100.9525379	0.95376917	0.537712808	4.396601247	74.76802087	13.23575701	12.94875976
104106	W CARSON ST	Other	35	Minor Arterial	0.215003	23956.59005	5150.738731	4861.528193	61.18061147	52.07457414	175.9553521	3462.665153	605.3398803	737.5507125
105914	MONETA AVE	Other	30	Major Collector	0.245776	71.333333	17.53202125	17.53202125	0	0	0	0	0	0
2751966	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.138492	0	0	0	0	0	0	0	0	0
2732925	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.164253	0	0	0	0	0	0	0	0	0
2751965	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.132511	0	0	0	0	0	0	0	0	0
91740	0	Ramp-Other	30	Ramps	0.123884	5649.795475	699.9192626	521.3242463	6.790042025	6.010279955	165.7946943	389.6019596	66.47249945	65.24978729
104605	W TORRANCE BLVD	Other	40	Principal Arterial	0.153397	11523.24846	1767.631744	1679.20608	21.11766308	19.47682844	47.83117201	1075.077741	257.4555863	334.6566553
104638	W DEL AMO BLVD	Other	40	Principal Arterial	0.243042	37803.76887	9187.903593	8467.748901	137.4639534	125.8203301	456.8704087	6115.544757	1026.896806	1325.307338
105906	W 214TH ST	Other	30	Major Collector	0.24894	2358.75052	587.1873544	587.1816908	0.001286522	0.00076325	0.003613862	541.651866	23.52877321	22.00105183

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
1646459	0	Centroid Connector	25	Tier 1 Centroid Co	0.130385	18393.38047	2398.220913	2329.452519	20.26348619	15.93428435	32.57062296	1722.766157	309.9202606	296.7661022
1646460	0	Centroid Connector	25	Tier 1 Centroid Co	0.258815	4981.374945	1289.254556	1250.828901	15.52182063	14.03145102	8.872383699	963.4365271	145.9428544	141.4495193
2683238	S FIGUEROA ST	Other	40	Minor Arterial	0.104925	4704.095333	493.5772028	487.6110118	1.737679608	1.184067818	3.044443573	381.1800298	53.82932944	41.47960248
2683244	S MAIN ST	Other	45	Principal Arterial	0.192289	13457.10679	2587.653608	2535.543276	19.93916499	16.14709958	16.0240675	1976.999346	289.2121922	254.2690992
2732906	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.087308	0	0	0	0	0	0	0	0	0
106652	S FIGUEROA ST	Other	40	Minor Arterial	0.431406	4704.095333	2029.374951	2004.844567	7.14458336	4.868372275	12.51742887	1567.246623	221.3228086	170.5460985
127349	S FIGUEROA ST	Other	40	Minor Arterial	0.152393	19101.79454	2910.979776	2665.272704	23.5303358	20.09692334	202.0798122	1948.450502	327.6122658	384.9937302
1656340	0	Ramp-Other	30	Ramps	0.09541	13503.68766	1288.38684	1234.238424	11.34174659	9.786691722	33.01997739	858.9813855	157.409699	217.8473397
97055	S FIGUEROA ST	Other	40	Minor Arterial	0.148651	29116.16767	4328.147441	4162.853095	35.94818809	30.73058466	98.61557346	2972.844919	519.6799383	666.2155595
106653	W TORRANCE BLVD	Other	40	Principal Arterial	0.071978	40129.33974	2888.429616	2787.180939	25.26874891	21.37188648	54.60804181	1969.613542	370.451428	447.1159687
2670352	0	Ramp-Other	30	Ramps	0.125609	5649.795475	709.6651598	528.58333	6.884588718	6.093968994	168.1032721	395.0269005	67.39808356	66.15834597
2670349	0	Ramp-Other	30	Ramps	0.179076	13503.68766	2418.186372	2316.554659	21.28743959	18.36874129	61.97553161	1612.230904	295.443866	408.8798889
97091	S FIGUEROA ST	Other	40	Minor Arterial	0.048036	5158.091615	247.7740888	235.9501607	0.72614902	0.389794751	10.70798438	185.6351075	24.44532172	23.21173942
106443	W DEL AMO BLVD	Other	40	Principal Arterial	0.093106	30581.12518	2847.286241	2564.437765	48.65527138	45.65048155	188.5427231	1887.040668	297.5760285	377.2451361
104425	W 214TH ST	Other	30	Major Collector	0.171691	2358.75052	404.9762355	404.9723294	0.000887299	0.000526405	0.002492438	373.5709429	16.22751909	15.17386756
104528	S MAIN ST	Other	45	Principal Arterial	0.278411	13457.10679	3746.606559	3671.157159	28.86947701	23.37902918	23.20089374	2862.453728	418.7439512	368.1506179
2732915	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.28865	0	0	0	0	0	0	0	0	0
2732922	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.043919	0	0	0	0	0	0	0	0	0
104424	S MAIN ST	Other	35	Principal Arterial	0.071756	21202.40066	1521.399462	1477.744625	13.40713788	10.95029288	19.29740609	1144.206473	182.0024808	151.0333792
104604	S MAIN ST	Other	45	Principal Arterial	0.282499	13376.875	3778.953809	3554.635603	61.99631609	56.75083822	105.5710515	2153.859602	666.2426949	730.5783205
1646462	0	Centroid Connector	25	Tier 1 Centroid Co	0.20229	6904.453616	1396.701922	1377.778877	6.982630441	6.112372388	5.828041858	1085.41235	178.8678697	113.4986573
1646463	0	Centroid Connector	25	Tier 1 Centroid Co	0.311723	12789.13669	3986.668057	3850.426597	42.1872342	35.08725472	58.96697095	2867.722553	466.1150247	516.5890199
2683246	W TORRANCE BLVD	Other	40	Principal Arterial	0.171515	11523.24846	1976.409959	1877.540179	23.61190885	21.77727224	53.48059915	1202.057137	287.8641361	374.1835644
2732907	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.161046	0	0	0	0	0	0	0	0	0
2732909	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.333543	0	0	0	0	0	0	0	0	0
103585	DOLORES ST	Other	30	Major Collector	0.249084	5832.649733	1452.819726	1431.156544	8.465472443	5.754643945	7.443065568	1090.978314	192.1802648	147.9979653
103845	E 223RD ST	Other	40	Principal Arterial	0.250284	27151.80017	6795.661154	6508.591083	72.51305611	56.70679057	157.8502244	4376.691908	837.3011027	1193.733621
103851	E 220TH ST	Other	30	Major Collector	0.251544	624.19277	157.0119461	153.2929574	0.934304345	0.492228091	2.292456306	93.48500901	29.56608885	30.24185954
103853	E CARSON ST	Other	35	Minor Arterial	0.24918	35513.08737	8849.151111	8504.674129	80.38270086	65.12315911	198.9711216	6206.576487	1027.582999	1187.869943
104142	AVALON BLVD	Other	35	Principal Arterial	0.251226	27831.48463	6991.992558	6698.86797	70.5848642	59.23856373	163.3011593	5047.671278	810.6409719	759.3259808
140501	E 228TH ST	Other	30	Major Collector	0.250975	593.638825	148.9885041	148.2189086	0.655148403	0.081951118	0.032495992	86.03523992	17.35533636	26.92544956
1646464	0	Centroid Connector	25	Tier 1 Centroid Co	0.390657	1553.152293	606.7498153	563.0422023	1.12136998	0.50832367	42.0779194	379.890595	102.5040566	80.64754947
1646465	0	Centroid Connector	25	Tier 1 Centroid Co	0.399277	3100.207408	1237.841513	1173.887008	4.331093772	1.959747342	57.66366459	802.2249559	167.6413013	204.0207503
2683252	GRACE AVE	Other	30	Major Collector	0.153982	2390.169504	368.0430806	362.490318	1.206954801	0.769330412	3.576477397	280.3513492	42.2245885	39.91438054
2732920	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13419	0	0	0	0	0	0	0	0	0
2732926	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.279601	0	0	0	0	0	0	0	0	0
103586	E 223RD ST	Other	40	Principal Arterial	0.054943	24690.29733	1356.559006	1295.521937	15.48759734	12.17391517	33.37555643	860.749477	168.7401911	247.8095077
130630	S MAIN ST	Other	35	Principal Arterial	0.375203	8355.034044	3134.833838	3043.166481	34.25223459	26.05935066	31.35577174	2261.566035	362.9514383	318.3447396
140486	DOLORES ST	Other	35	Major Collector	0.368043	1904.899523	701.0849351	694.2087543	2.515284623	2.719330975	1.641565263	528.4237595	79.90003856	59.63122231
140488	E 228TH ST	Other	35	Major Collector	0.058188	2821.859431	164.1983566	161.048682	1.051385356	0.524814388	1.573474858	115.9101538	20.49404519	20.49373894
140498	CATSKILL AVE	Other	30	Minor Collector	0.361407	0	0	0	0	0	0	0	0	0
140500	GRACE AVE	Other	30	Major Collector	0.35394	71.333333	25.24771988	25.24771988	0	0	0	0	0	0
1646466	0	Centroid Connector	25	Tier 1 Centroid Co	0.378438	1589.70667	601.6054128	562.4216081	1.858110901	0.768988665	36.55670511	389.8398332	91.12029483	81.46147966
1646467	0	Centroid Connector	25	Tier 1 Centroid Co	0.232173	2612.194016	606.4809213	580.5550135	2.055766309	0.963728531	22.90641292	380.637876	97.57826745	102.3388706
2731349	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.182384	0	0	0	0	0	0	0	0	0
2732928	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.206455	0	0	0	0	0	0	0	0	0
2732929	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.199047	0	0	0	0	0	0	0	0	0
140485	E 228TH ST	Other	35	Major Collector	0.182229	3137.997881	571.8342159	562.738939	2.928358437	1.445027133	4.721891243	411.7454898	74.98779823	76.00565088
103294	E 223RD ST	Other	40	Principal Arterial	0.210607	30340.79664	6389.984157	6119.969999	66.65329446	50.6994726	152.661391	4158.632756	806.5906409	1099.91858
140496	E 228TH ST	Other	35	Major Collector	0.192749	522.305492	100.6738613	100.0828113	0.503154495	0.062938524	0.024956948	66.07513282	13.32891216	20.67876672
2731348	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.188376	0	0	0	0	0	0	0	0	0
140499	E 223RD ST	Other	40	Principal Arterial	0.197883	24690.29733	4885.790107	4665.958676	55.78021265	43.84563741	120.2055809	3100.079878	607.7355667	892.5120364
103591	DOLORES ST	Other	30	Major Collector	0.263214	0	0	0	0	0	0	0	0	0
103592	E 220TH ST	Other	30	Major Collector	0.250221	0.027441	0.006866314	0.004715165	5.70504E-05	4.3038E-05	0.002051062	0.003420771	0.000621799	0.000672594
103596	E CARSON ST	Other	35	Minor Arterial	0.25147	18445.58257	4638.510648	4377.125707	54.25708271	47.90641834	159.2214393	3172.032048	486.0651939	635.6242492
103850	GRACE AVE	Other	30	Major Collector	0.26205	0	0	0	0	0	0	0	0	0
1646468	0	Centroid Connector	25	Tier 1 Centroid Co	0.159714	6230.099429	995.0341002	977.6463144	5.994788966	4.009383114	7.383613677	743.964695	131.091054	102.5905654
1646469	0	Centroid Connector	25	Tier 1 Centroid Co	0.205278	3014.334833	618.7766258	608.3408751	2.371440224	1.427275353	6.637035158	450.0324374	80.41840433	77.89003318
1646470	0	Centroid Connector	25	Tier 1 Centroid Co	0.159703	9231.623697	1474.317999	1454.060274	8.181978038	5.494502981	6.581243887	1101.352515	186.5798537	166.1279057
2732919	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.245874	0	0	0	0	0	0	0	0	0
2683250	E CARSON ST	Other	35	Minor Arterial	0.117513	27677.20626	3252.43154	3115.379164	31.3750457	26.42984965	79.24748036	2292.703603	364.4299148	419.2705014
2683254	GRACE AVE	Other	30	Major Collector	0.094843	2390.169504	226.6908463	223.2707019	0.743406464	0.473858011	2.202879855	172.6783846	26.00762847	24.58468907
1646471	0	Centroid Connector	25	Tier 1 Centroid Co	0.208887	17067.57789	3565.195142	3493.543644	22.31531654	14.79850489	34.53767612	2568.077115	457.6656248	467.8009043
2683256	AVALON BLVD	Other	40	Principal Arterial	0.284027	26271.2089	7461.732649	7122.961579	75.50180533	62.94581152	200.3234535	5474.55218	829.7555706	798.1092081
104141	AVALON BLVD	Other	40	Principal Arterial	0.062049	27305.44631	1694.275638	1619.259099	16.76566512	13.82063939	44.43023454	1241.424237	188.5297144	184.8169367
104150	AVALON BLVD	Other	35	Principal Arterial	0.262662	27207.34674	7146.33611	6843.747115	72.82246164	61.42125506	168.3452789	5179.835367	816.670394	762.313973

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2732927	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.167062	0	0	0	0	0	0	0	0	0
104151	E 220TH ST	Other	25	Major Collector	0.105609	0	0	0	0	0	0	0	0	0
1646472	0	Centroid Connector	25	Tier 1 Centroid Co	0.218624	15568.79342	3403.711893	3314.064791	22.97273314	15.94656726	50.72780113	2559.053633	430.2188984	324.7922601
104157	E CARSON ST	Other	40	Minor Arterial	0.101002	24319.00993	2456.268641	2355.492794	25.19734406	22.56755155	53.01095131	1776.583942	251.6565371	312.8426963
2674511	CIVIC CENTER DR	Other	30	Minor Collector	0.040861	71.333333	2.91475132	2.91475132	0	0	0	0	0	0
18064	SAN DIEGO FWY	Interstate	65	Freeways	0.257876	105385.7825	27176.46406	22262.80938	871.9961463	744.4601021	3297.198423	12402.7029	3375.939846	6476.430355
93201	0	Ramp-Other	30	Ramps	0.143599	13497.94732	1938.291737	1882.968188	13.47048211	9.379859253	32.47320804	1340.9685	233.0962123	308.9034748
103855	E 213TH ST	Other	30	Major Collector	0.248246	1510.634893	375.0090696	371.6992095	0.994636822	0.71387705	1.601346322	298.8038722	28.56466803	26.62245463
127074	0	Ramp-Other	30	Ramps	0.182113	12648.31002	2303.421683	2240.112774	15.94269323	9.910249273	37.45596653	1619.979855	268.0400858	352.0928332
140583	AVALON BLVD	Other	35	Principal Arterial	0.086815	42702.79278	3707.242955	3558.875011	32.77981909	24.55389209	91.03423279	2623.658694	409.8211914	470.3833544
1646473	0	Centroid Connector	25	Tier 1 Centroid Co	0.57982	11860.91069	6877.193235	6379.276638	101.0859783	93.28488631	303.5457325	4736.820583	821.8741823	820.581872
2666772	W DEL AMO BLVD	Other	40	Principal Arterial	0.307588	27667.79161	8510.280685	7976.515509	125.8441007	114.7528468	293.1682284	5376.579176	1060.343908	1539.592424
2671598	SAN DIEGO FWY	Interstate	65	Freeways	0.174794	111407.3204	19473.33117	16053.5333	619.2808066	531.0882038	2269.42886	9355.256468	2271.53982	4421.493191
2732888	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.545898	0	0	0	0	0	0	0	0	0
103598	E 213TH ST	Other	30	Major Collector	0.253587	1510.56181	383.0588377	379.6780645	1.01594078	0.729189672	1.635642743	305.2196188	29.17686005	27.19237999
2732889	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.320973	0	0	0	0	0	0	0	0	0
2732890	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.21757	0	0	0	0	0	0	0	0	0
2683260	E 213TH ST	Other	30	Major Collector	0.179566	1510.56181	271.245542	268.8516025	0.719391854	0.516342213	1.158205369	216.1272702	20.66025487	19.25503636
127072	AVALON BLVD	Other	35	Principal Arterial	0.228863	40709.58111	9316.916862	8990.794488	72.73390435	57.18007117	196.2083983	6375.691341	1139.846995	1330.233298
1657156	0	Ramp-Other	35	Ramps	0.236756	2414.595498	571.6699717	506.3477919	15.12130693	11.26716027	38.9337126	224.643612	99.11788662	182.5862933
2667622	0	Ramp-Other	30	Ramps	0.039251	13497.94732	529.8079302	514.6859263	3.681988687	2.563867823	8.876147387	366.5370553	63.71394946	84.43492148
2732914	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.163604	0	0	0	0	0	0	0	0	0
2761702	SAN DIEGO FWY	Interstate	65	Freeways	0.26308	107702.2543	28334.30905	23248.91054	906.3958269	772.0033996	3406.999288	12940.28434	3545.944224	6762.681973
2761705	0	0	35	Ramps	0.120853	7861.549773	950.0918747	910.129152	7.683521698	6.780292238	25.49890874	720.8868727	84.97825755	104.2640218
2667623	0	Ramp-Other	30	Ramps	0.141096	13497.94732	1904.506375	1850.147142	13.2356851	9.216363771	31.90718432	1317.594771	229.0332326	303.5191379
2674507	AVALON BLVD	Other	35	Principal Arterial	0.09601	23938.69038	2298.353663	2187.008711	24.23180126	19.85316286	67.2599885	1560.073788	274.3460052	305.4480071
2674508	E DESFORD ST	Other	30	Minor Collector	0.054704	71.333333	3.902218648	3.902218648	0	0	0	0	0	0
17968	SAN DIEGO FWY	Interstate	65	Freeways	0.239599	108836.2564	26077.0582	21389.36784	848.8796068	727.9895336	3110.821227	12224.92715	3111.450298	6050.75413
1657154	AVALON BLVD	Other	35	Principal Arterial	0.028057	41269.76532	1157.905806	1120.074591	8.547645489	6.438672008	22.84489738	809.6599989	137.1119007	155.5239054
2761706	0	Ramp - Other	30	Ramps	0.082248	10826.49762	890.457776	839.7894443	9.093040649	6.813312792	34.76197828	605.9333549	99.29785462	134.5582348
2761707	0	Ramp - Other	30	Ramps	0.126693	10826.49762	1371.641463	1293.593085	14.00671869	10.49507632	53.54658247	933.3663376	152.9562189	207.2705287
2761704	0	Ramp-Other	35	Ramps	0.124735	7861.549773	980.6104109	939.3640189	7.930329234	6.998086538	26.31797623	744.0429618	87.70790097	107.6131562
98479	AVALON BLVD	Other	35	Principal Arterial	0.028841	39324.73688	1134.164736	1099.548268	7.472261717	6.039393163	21.10481389	806.7463015	128.9576753	145.5687104
127076	AVALON BLVD	Other	35	Principal Arterial	0.052176	35629.73929	1859.017277	1772.341801	18.93749218	14.43428744	53.30369606	1285.06998	214.0936814	240.1159484
2761708	0	Ramp - Other	30	Ramps	0.071409	7073.053494	505.079677	501.6663787	1.044596131	0.441590043	1.927112041	399.3003701	44.08280564	58.28320295
98480	AVALON BLVD	Other	35	Principal Arterial	0.029961	41269.76532	1236.483439	1196.084927	9.127704548	6.875612219	24.39519444	864.6050264	146.4165683	166.0780458
2761709	0	Ramp - Other	30	Ramps	0.0259	3753.444123	97.21420279	82.49668174	2.484535718	1.985356445	10.24762889	45.98318901	15.28021466	21.23327804
2674513	AVALON BLVD	Other	35	Principal Arterial	0.162076	42827.09949	6941.244977	6579.22605	94.50686747	81.83374778	185.6783118	4837.544585	775.8001368	851.6177481
2674514	CARSON PLAZA DR	Other	30	Minor Collector	0.136941	0	0	0	0	0	0	0	0	0
2683261	AVALON BLVD	Other	35	Principal Arterial	0.158117	42755.76616	6760.413477	6407.237519	92.19836597	79.8348102	181.1427826	4719.378792	756.8498126	830.8154413
2662655	E DEL AMO BLVD	Other	45	Principal Arterial	0.104212	27667.79161	2883.315899	2702.4742	42.63646638	38.87870682	99.32652581	1821.605749	359.2486031	521.6198477
2674512	CARSON PLAZA DR	Other	30	Minor Collector	0.129234	0	0	0	0	0	0	0	0	0
104080	AVALON BLVD	Other	35	Principal Arterial	0.095591	42755.76616	4087.066443	3873.550862	55.73931963	48.26482504	109.511436	2853.141269	457.5601007	502.2766613
12810	HARBOR FWY	Interstate	65	Freeways	0.383607	118209.3974	45345.95232	38885.84313	788.4714791	649.9701848	5021.667524	25488.8308	5167.987603	8224.549306
13481	GARDENA FWY	State Route-Limited Access	65	Freeways	0.586987	96403.85536	56587.80985	47731.49923	1172.279063	966.4001621	6717.63139	32742.19028	5596.501441	9390.068241
18243	GARDENA FWY	State Route-Limited Access	65	Freeways	0.743401	50625.78324	37635.25789	35047.27718	495.7619426	396.8175948	1695.401172	21526.66644	4975.227793	8545.38294
18244	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.286834	51300.56331	14714.74578	12051.91974	341.5140755	278.3196953	2042.992261	7982.159063	1454.74274	2612.340824
91942	0	Ramp-Other	30	Ramps	0.28402	4917.520995	1396.674313	1290.614384	13.45572726	11.60046119	81.00374091	820.6063977	214.2312748	255.7767115
103302	S MAIN ST	Other	45	Minor Arterial	0.146611	23751.43606	3482.221793	3155.938722	55.77871515	49.45650034	221.0478549	2349.972003	384.5694586	419.3447067
103303	E 192ND ST	Other	35	Major Collector	0.62433	2242.778191	1400.233708	1390.863753	4.855798373	1.725492662	2.788664219	960.8700313	189.5146548	240.4790667
103419	GRIFFITH ST	Other	30	Major Collector	0.176887	2139.274009	378.4097616	375.7812109	1.362379606	0.483329046	0.782842074	255.7043991	52.68730445	67.38950749
103421	W GARDENA BLVD	Other	40	Minor Arterial	0.144495	1916.481228	276.921955	270.1410232	2.548411932	2.16956367	2.062956271	182.7001743	34.93217617	32.42386796
103424	W 168TH ST	Other	25	Minor Arterial	0.141643	0	0	0	0	0	0	0	0	0
103428	S MAIN ST	Other	40	Minor Arterial	0.394887	23246.08218	9179.575654	8245.727337	204.2498399	186.6852633	542.9132142	5877.061367	1069.04568	1294.091871
103429	E VICTORIA ST	Other	40	Minor Arterial	0.236975	25075.13295	5942.17963	5666.778026	40.00661193	33.07767787	202.3173141	4360.389795	573.3336414	653.5099811
103430	W VICTORIA ST	Other	40	Minor Arterial	0.196394	26709.05308	5245.49777	4986.972125	61.53149791	54.54649352	142.447653	3672.580501	550.1785858	698.2901184
103431	W ALBERTONI ST	Other	40	Minor Arterial	0.177356	5443.684533	965.470114	941.1353459	6.946701623	5.309756112	12.07831037	644.027272	130.4033252	148.4370805
103442	W WALNUT ST	Other	30	Minor Arterial	0.139681	2087.058615	291.5224344	262.7717837	9.86368556	11.21514938	7.671815778	214.6876225	24.45012276	23.63403833
104024	S BROADWAY	Other	40	Principal Arterial	0.459954	5488.380266	2524.402457	2373.250799	54.85282249	52.18189353	44.11694188	1658.732451	359.9781755	354.5401734
140618	AVALON BLVD	Other	40	Principal Arterial	0.273143	36972.53444	10098.78898	9681.722631	107.7693226	90.15021319	219.1468085	7087.602433	1201.134112	1251.042772
1646474	0	Centroid Connector	25	Tier 1 Centroid Co	0.325497	25148.9506	8185.907973	7709.221336	80.63236064	71.79791766	324.2563594	5789.315219	954.8187226	965.0873946
1646475	0	Centroid Connector	25	Tier 1 Centroid Co	0.376135	3145.191797	1183.016717	1093.241011	20.2168	18.96402069	50.59488439	786.2528757	161.8386221	145.1495144
1646478	0	Centroid Connector	25	Tier 1 Centroid Co	0.265601	0	0	0	0	0	0	0	0	0
1646479	0	Centroid Connector	25	Tier 1 Centroid Co	0.446395	8937.503787	3989.657003	3686.780161	86.86250361	83.20170973	132.8126283	2987.626969	357.2219099	341.931283
2668406	0	Ramp-Other	30	Ramps	0.187094	3023.059946	565.5963775	434.545562	19.89453871	20.038472	91.11780481	314.9322196	52.40645674	67.20688571
2732672	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.437906	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2732931	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.455753	0	0	0	0	0	0	0	0	0
2769030	I 110 H	I-110 EXPRESS LANES	65	Freeways	0.384207	1361.735036	523.188133	523.188133	0	0	0	0	20.26346869	502.9246647
12525	SAN DIEGO FWY	Interstate	65	Freeways	0.444542	85302.85429	37920.70145	31301.42104	1148.144796	972.8034368	4498.332174	18014.06052	4631.165985	8642.858284
12669	0	Low Speed Freeway-Freeway Ramp	25	Ramps	0.608131	1751.665131	1065.241868	330.7151097	128.416924	126.1833957	479.9264384	85.07654294	88.40978558	157.2287806
12763	0	High Speed Freeway-Freeway Ramp	30	Ramps	0.518257	26667.19014	13820.45796	11957.94556	382.962913	323.0515793	1156.497907	6510.677545	1881.083858	3566.184159
12849	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.496765	21807.00203	10832.95536	9493.011102	190.2346828	131.8078134	1017.901763	6136.172891	1252.808961	2104.02925
12850	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.382428	47.54442	18.18231745	5.231491133	0.118010015	0.348505489	12.48431081	3.820965879	0.73815067	0.672374584
12947	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.425122	33805.92776	14371.64362	12832.19936	316.4802874	277.2151123	945.7488608	8363.725344	1596.94292	2871.531095
13161	SAN DIEGO FWY	Interstate	65	Freeways	0.477301	83467.51458	39839.12818	32410.02015	1313.541384	1117.192858	4998.37378	18266.36562	4833.044289	9296.29121
97111	S FIGUEROA ST	Other	40	Minor Arterial	0.321544	9304.555082	2991.823859	2874.372463	15.46795772	10.6358305	91.34760763	2182.823744	322.7414758	351.0151427
103304	S MAIN ST	Other	45	Minor Arterial	0.196436	18363.46607	3607.245822	3219.910472	62.64882668	55.81720513	268.8693182	2435.655247	371.1155004	410.3896209
104159	S BROADWAY	Other	40	Principal Arterial	0.294167	14920.05582	4388.98806	4217.749111	40.69876928	32.84982333	97.69035646	3081.199606	531.7017949	604.8477102
1643030	0	Ramp-Other	30	Ramps	0.405533	3577.011714	1450.596291	1401.32992	17.16512993	6.954601399	25.14663983	1030.392736	126.464966	244.4722177
2665996	I 405 HOV	HOV-Interstate	65	Freeways	0.615659	13593.70934	8369.0895	8369.0895	0	0	0	7660.423225	73.53394587	631.8488148
2768555	I 405 HOV	HOV-Interstate	65	Freeways	0.761954	13739.04848	10468.52295	10468.52295	0	0	0	9339.033107	82.56099383	1032.197737
2769010	0	Low Speed Freeway-Freeway Ramp	30	Ramps	0.640458	0	0	0	0	0	0	0	0	0
2769032	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.495602	7660.13128	3796.376383	3796.376383	0	0	0	3711.273559	8.33346982	76.76935443
2769035	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.838303	114.762077	96.20539344	96.20539344	0	0	0	0	0	96.20539344
2769036	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.401177	121.61516	48.78920504	48.78920504	0	0	0	0.105108374	0	48.68409667
1643029	HARBOR FWY	Interstate	65	Freeways	0.07011	85528.82747	5996.426094	5069.624206	91.91203182	73.07432792	761.8155275	3279.128677	684.8622066	1104.815373
2769034	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.110141	236.377237	26.03482526	26.03482526	0	0	0	0.028856942	0	26.00596832
12923	SAN DIEGO FWY	Interstate	65	Freeways	0.304703	111970.0444	34117.60845	28485.50462	1012.132839	856.7242316	3763.246762	16175.27581	4280.306851	8020.780862
13505	SAN DIEGO FWY	Interstate	65	Freeways	0.254101	120850.454	30708.22122	25802.16721	899.2106002	764.8133481	3242.030065	15369.2126	3606.725318	6818.606263
91804	0	Ramp-Other	30	Ramps	0.141563	1437.951395	203.5607133	197.0570965	1.637231729	1.338545691	3.527839428	140.8367727	25.26406741	30.95625647
95396	0	Ramp-Other	30	Ramps	0.103949	612.050354	63.62202225	53.65866465	1.545304379	1.441900695	6.976152524	38.88361896	6.127018818	8.648026868
127068	S MAIN ST	Other	45	Principal Arterial	0.066345	30076.95414	1995.455522	1830.044875	26.29624804	23.68813978	115.4262596	1390.72436	219.2637697	219.1279152
130600	0	Ramp-Other	30	Ramps	0.148404	2746.523939	407.5951386	395.1519456	3.180708799	2.308506881	6.953977407	286.3436043	46.95714614	61.85119523
2666001	I 405 HOV	HOV-Interstate	65	Freeways	0.297486	13860.66364	4123.353385	4123.353385	0	0	0	3646.271285	32.23388788	439.096816
2668415	0	Ramp-Other	30	Ramps	0.10622	3205.176418	340.4538391	276.2043326	9.737059299	8.80618259	45.70626461	205.261242	29.02962253	41.91346813
2668417	0	Shared HOV Ramp to MF	30	Ramps	0.103975	6254.090642	650.2690745	564.3889842	14.38847536	13.07581511	58.41579981	412.2040514	63.03270353	89.15222928
97090	S FIGUEROA ST	Other	40	Minor Arterial	0.10662	6595.716446	703.2352875	672.0945833	2.844641538	1.873181938	26.42288069	518.0820273	73.2819473	74.83096872
13026	0	High Speed Freeway-Freeway Ramp	50	Ramps	0.057161	33805.92776	1932.380636	1725.390235	42.55326637	37.27375443	127.1633805	1124.568722	214.7215488	386.0999641
13162	0	High Speed Freeway-Freeway Ramp	50	Ramps	0.064527	37382.93947	2412.208935	2170.705812	50.76810989	43.18359469	147.5514191	1433.43775	262.5141102	474.7539516
13160	SAN DIEGO FWY	Interstate	65	Freeways	0.140192	112017.5889	15703.96982	13107.92548	465.7194337	394.3013731	1736.023532	7443.546883	1969.613784	3690.55905
91949	0	Ramp-Other	30	Ramps	0.141764	3205.176418	454.3786297	368.629552	12.99533491	11.75296242	61.00078042	273.9470411	38.74369618	55.93881469
2668416	0	Ramp-Other	30	Ramps	0.095061	6866.140995	652.7022291	565.0733673	14.56809606	13.27341059	59.78735516	412.4238477	63.23191197	89.41760772
104247	S MAIN ST	Other	45	Principal Arterial	0.171089	29427.9283	5034.794825	4545.105458	73.84825373	67.53629531	348.3048186	3475.686728	534.5409808	532.4825035
104029	S BROADWAY	Other	40	Principal Arterial	0.293741	3712.910679	1090.634096	1073.195431	6.327917842	4.942995413	6.167751156	789.5856486	149.6018231	134.0079599
104030	W VICTORIA ST	Other	40	Minor Arterial	0.203963	28484.59596	5809.803646	5486.395934	83.83319248	76.35618568	163.2183338	4001.424064	627.135738	789.372551
104160	GRIFFITH ST	Other	30	Major Collector	0.175168	13346.41938	2337.86559	2243.693991	21.8105301	17.09207768	55.26899089	1617.127867	279.5756728	346.990451
105732	S FIGUEROA ST	Other	40	Minor Arterial	0.198648	22650.97423	4499.570729	4320.215326	34.29008717	25.95390033	119.1114153	3182.427854	516.4385327	610.3570828
12827	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.561655	31012.19958	17418.15695	12791.29829	347.7749748	280.2767299	3998.806961	7879.158697	1817.880533	3094.259057
13198	0	High Speed Freeway-Freeway Ramp	30	Ramps	0.572632	37177.84263	21289.22238	16636.38781	501.2169583	398.6321733	3752.985438	10983.38605	1983.038384	3669.963384
13199	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.500522	17145.78062	8581.840406	7651.562746	211.0607696	190.8389271	528.3779633	5171.017329	945.3895023	1530.484376
103668	S BROADWAY	Other	40	Principal Arterial	0.313583	4525.273363	1419.048797	1305.182305	37.84207569	39.93770604	36.0867105	938.762658	178.0406608	188.3789862
103669	W WALNUT ST	Other	30	Minor Arterial	0.284715	0	0	0	0	0	0	0	0	0
105878	S FIGUEROA ST	Other	40	Principal Arterial	0.407088	6228.201564	2535.426118	2490.397594	17.06327467	12.88874763	15.07650245	1806.798127	328.627887	302.8643146
2744655	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.261665	0	0	0	0	0	0	0	0	0
89437	GARDENA FWY	State Route-Limited Access	65	Freeways	0.245379	77259.46017	18957.84908	17185.41074	349.7366447	291.5589556	1131.142735	10953.93522	2374.820548	3855.50987
104025	W ALBERTONI ST	Other	40	Minor Arterial	0.185304	10765.41897	1994.875197	1944.032051	14.57665527	13.66650596	22.59998493	1405.893901	256.9285665	262.123271
2683275	S FIGUEROA ST	Other	40	Principal Arterial	0.183317	6228.201564	1141.735226	1121.458298	7.683813631	5.803970023	6.789144362	813.6246027	147.9853947	136.3837243
13235	GARDENA FWY	State Route-Limited Access	65	Freeways	0.131839	101321.3764	13358.10894	11319.72376	269.5433146	222.441116	1546.400749	7734.908446	1356.434452	2227.765611
13536	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.088444	54323.62325	4804.598535	3921.576872	114.709005	95.29133713	673.0213203	2610.139889	473.3373527	837.274153
103667	S BROADWAY	Other	40	Principal Arterial	0.284597	2438.277228	693.9263843	649.1635238	14.24722977	13.3955223	17.12010842	414.5781771	111.7693649	122.8159821
103707	W 168TH ST	Other	25	Minor Arterial	0.24928	959.668365	239.22613	230.7506933	4.220638452	2.59891376	1.655884528	192.4023635	24.22835679	14.11997277
103730	W GARDENA BLVD	Other	40	Minor Arterial	0.249273	8321.088941	2074.222804	1983.769916	28.42353081	26.59458415	35.4347729	1528.231532	216.5457733	204.3436631
103706	S BROADWAY	Other	40	Principal Arterial	0.167624	10416.11265	1745.990467	1611.592803	38.17073249	37.38493817	58.84199292	1236.675478	183.6777617	191.2395633
104012	AVALON BLVD	Other	40	Principal Arterial	0.101718	36282.29464	3690.562446	3549.712689	36.20622234	29.48917157	75.15436332	2599.337633	441.3850837	463.3864019
140617	E 189TH ST	Other	25	Major Collector	0.339766	0	0	0	0	0	0	0	0	0
1646484	0	Centroid Connector	25	Tier 1 Centroid Co	0.523023	14665.0911	7670.179942	7390.599899	56.07092287	47.0333867	176.4757339	5474.819403	978.1129756	937.6675207
2683279	E 184TH ST	Other	25	Minor Collector	0.101597	77.333333	7.856834633	7.856834633	0	0	0	0	0	0
2732900	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.39231	0	0	0	0	0	0	0	0	0
2744653	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.300051	0	0	0	0	0	0	0	0	0
103418	S MAIN ST	Other	45	Minor Arterial	0.388496	21612.16205	8396.238509	7537.412964	144.8126008	129.990384	584.0225598	5665.4525	903.3314882	963.1900327
2744652	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.183193	0	0	0	0	0	0	0	0	0
2759518	E 184TH ST	Other	25	Minor Collector	0.515397	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2732933	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.150671	0	0	0	0	0	0	0	0	0
104059	E TURMONT ST	Other	30	Major Collector	0.203069	323.201503	65.63220601	65.63220601	0	0	0	54.68057463	6.241496902	4.710134485
2683281	AVALON BLVD	Other	40	Principal Arterial	0.258495	19263.88872	4979.618915	4768.78432	59.99450186	49.79544618	101.0446468	3490.871055	558.4695752	613.5469055
2683283	BRENNER DR	Other	25	Minor Collector	0.146979	38.666667	5.683188049	5.683188049	0	0	0	0	0	0
2732898	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.18553	0	0	0	0	0	0	0	0	0
2732899	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.17501	0	0	0	0	0	0	0	0	0
104018	AVALON BLVD	Other	40	Principal Arterial	0.258563	19263.88872	4980.92886	4770.038802	60.01028408	49.80854543	101.0712277	3491.789367	558.6164868	613.7083059
140613	BRENNER DR	Other	25	Minor Collector	0.041391	38.666667	1.600452014	1.600452014	0	0	0	0	0	0
2732897	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.146459	0	0	0	0	0	0	0	0	0
140619	AVALON BLVD	Other	40	Principal Arterial	0.27569	36972.53444	10192.95802	9772.002622	108.7742485	90.99084462	221.1903056	7153.692809	1212.334431	1262.708478
104011	AVALON BLVD	Other	40	Principal Arterial	0.054173	36972.53444	2002.913108	1920.195502	21.37410629	17.87967291	43.46382686	1405.698431	238.2233418	248.1218267
18040	GARDENA FWY	State Route-Limited Access	65	Freeways	0.168929	104856.4317	17713.29215	15319.10272	353.508612	291.5542695	1749.126547	10672.26561	1755.341679	2891.495432
98490	AVALON BLVD	Other	40	Principal Arterial	0.171526	42754.41885	7333.494448	7055.15326	74.22778405	62.85794163	141.2554618	5163.60011	867.3870306	973.9090018
98525	E ALBERTONI ST	Other	40	Minor Arterial	0.355514	14411.73524	5123.573643	4924.663934	71.13824226	58.71896682	69.05250028	3016.958598	859.9594087	1016.105181
98544	S MAIN ST	Other	40	Minor Arterial	0.121643	28113.83847	3419.851653	2836.021436	110.5836748	106.0742337	367.1723088	2212.117783	304.7861418	319.117511
127556	0	Ramp-Other	30	Ramps	0.364044	6289.026105	2289.482219	1942.193735	58.96074317	56.95381847	231.3739226	1529.839239	179.0854176	233.2690778
127561	0	Ramp-Other	30	Ramps	0.246801	3638.867663	898.0761781	880.7423628	6.146946392	3.839309409	7.347559463	645.1130574	109.0644903	126.5648151
2672011	SR 91 HOV	HOV-Other	65	HOV	0.314901	7161.392963	2255.129805	2255.129805	0	0	0	0	744.1091692	1508.08156
2676600	E 169TH ST	Other	30	Minor Collector	0.269545	71.333333	19.22754324	19.22754324	0	0	0	0	0	0
2683287	E VICTORIA ST	Other	40	Minor Arterial	0.313279	25152.46628	7879.739484	7515.66083	52.88841177	43.72841796	267.4618244	5764.399428	757.9423561	863.9348175
2683289	BILLINGS DR	Other	35	Minor Collector	0.383677	71.333333	27.36895921	27.36895921	0	0	0	0	0	0
2732673	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.576636	0	0	0	0	0	0	0	0	0
2732936	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.31104	0	0	0	0	0	0	0	0	0
18173	GARDENA FWY	State Route-Limited Access	65	Freeways	0.170602	94764.95358	16167.09061	13989.39352	316.8960782	256.6029803	1604.19803	9687.720178	1603.872368	2697.800977
93237	0	Ramp-Other	30	Ramps	0.181295	10091.47809	1829.534521	1574.275683	42.62776844	40.21037384	172.4206953	1158.572995	179.4368629	236.2658253
124028	SR 91 HOV	HOV-Other	65	HOV	0.298494	7161.392963	2137.632831	2137.632831	0	0	0	0	705.3395269	1429.50736
2732930	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.395585	0	0	0	0	0	0	0	0	0
98531	E ALBERTONI ST	Other	40	Minor Arterial	0.181591	17678.69604	3210.292092	2898.089633	64.3536586	59.29895254	188.5498477	1952.881173	428.5465944	500.5002667
127550	S MAIN ST	Other	40	Minor Arterial	0.164118	26203.73781	4300.505042	3733.027041	113.2012311	106.6415405	347.6352286	2895.195288	399.5072007	438.3245527
2668405	0	Ramp-Other	30	Ramps	0.127301	10091.47809	1284.655253	1105.41862	29.93219642	28.23475992	121.0696761	813.5221644	125.9962607	165.9001949
93263	0	Ramp-Other	30	Ramps	0.120551	3023.059946	364.4328996	279.9924212	12.81872501	12.9114661	58.71028727	202.921494	33.76725478	43.30367237
2732932	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.235556	0	0	0	0	0	0	0	0	0
18118	GARDENA FWY	State Route-Limited Access	65	Freeways	0.055286	104856.4317	5797.092681	5013.537716	115.694032	95.41801198	572.4429214	3492.750661	574.4769699	946.3100855
103423	S MAIN ST	Other	40	Minor Arterial	0.285087	11065.83048	3154.724415	2718.580485	99.70827709	105.1728053	231.2628478	2064.715394	330.8611107	323.0039804
140641	BILLINGS DR	Other	30	Minor Collector	0.103076	0	0	0	0	0	0	0	0	0
1646485	0	Centroid Connector	25	Tier 1 Centroid Co	0.383023	0	0	0	0	0	0	0	0	0
2676630	AMBLER AVE	Other	30	Minor Collector	0.097595	71.333333	6.961776634	6.961776634	0	0	0	0	0	0
1646486	0	Centroid Connector	25	Tier 1 Centroid Co	0.138917	30678.3578	4261.745431	3614.498545	139.5441154	137.4719134	370.2308571	2888.016233	369.489932	356.9923801
103420	S MAIN ST	Other	40	Minor Arterial	0.166874	11065.83048	1846.599396	1591.30511	58.36365401	61.5622835	135.3683488	1208.569022	193.6676067	189.0684816
2732671	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.145198	0	0	0	0	0	0	0	0	0
140640	BILLINGS DR	Other	35	Minor Collector	0.117797	71.333333	8.402852627	8.402852627	0	0	0	0	0	0
140644	E SHERMAN DR	Other	30	Minor Collector	0.139	71.333333	9.915333287	9.915333287	0	0	0	0	0	0
2732938	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.181446	0	0	0	0	0	0	0	0	0
2732937	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.11582	0	0	0	0	0	0	0	0	0
2676631	E 169TH ST	Other	30	Minor Collector	0.131548	0	0	0	0	0	0	0	0	0
93197	0	Ramp-Other	30	Ramps	0.351904	0	0	0	0	0	0	0	0	0
98477	E ALBERTONI ST	Other	40	Minor Arterial	0.263832	9017.414994	2379.082633	2197.924917	37.06020903	31.45511877	112.6423883	1277.828528	388.657096	531.4392932
104017	E VICTORIA ST	Other	40	Minor Arterial	0.22569	6735.84483	1520.21282	1211.299333	54.89380075	40.39384454	213.6258415	667.0944287	236.1485299	249.3769737
127560	AVALON BLVD	Other	40	Principal Arterial	0.169345	49517.09422	8385.472321	8102.400128	78.14681904	65.50445308	139.4209204	6082.250322	943.5921476	1020.673808
140628	UNKNOWN	Other	35	Minor Collector	0.159557	0	0	0	0	0	0	0	0	0
140630	UNKNOWN	Other	30	Minor Collector	0.193909	0	0	0	0	0	0	0	0	0
140632	UNKNOWN	Other	30	Minor Collector	0.129803	0	0	0	0	0	0	0	0	0
2668404	0	Ramp-Other	30	Ramps	0.183053	0	0	0	0	0	0	0	0	0
2672010	GARDENA FWY	State Route-Limited Access	65	Freeways	0.217432	101217.564	22007.93738	18941.5979	449.5927578	371.883077	2244.863644	13168.14774	2163.250521	3610.19964
104016	AVALON BLVD	Other	40	Principal Arterial	0.167688	49517.09422	8303.422496	8023.120096	77.38217126	64.8635078	138.0567203	6022.736969	934.3593259	1010.686761
18101	GARDENA FWY	State Route-Limited Access	65	Freeways	0.044824	102692.8815	4603.105719	3884.051676	96.77828663	80.80967849	541.4660777	2688.652957	449.4152224	745.7743177
98470	E ARTESIA BLVD	Other	40	Minor Arterial	0.147316	7154.958462	1054.039861	989.313003	12.89666859	11.02367528	40.80651388	607.4213475	151.0857409	230.8059146
104056	AVALON BLVD	Other	40	Principal Arterial	0.229735	36823.1452	8459.565263	8087.862343	97.59177605	85.51917607	188.5919681	6039.003661	958.2723977	1039.661693
104034	AVALON BLVD	Other	40	Principal Arterial	0.10199	36622.23207	3735.101449	3573.899324	42.6487686	37.09432017	81.45903666	2678.05571	418.371655	447.5888882
17567	SAN DIEGO FWY	Interstate	65	Freeways	0.588746	121779.3085	71697.08075	60989.08693	1877.442294	1594.281366	7236.270161	35594.38556	8949.817003	16444.88437
17827	SAN DIEGO FWY	Interstate	65	Freeways	0.266459	112761.2756	30046.25673	24950.01133	912.3248395	773.4840585	3410.436508	14496.16655	3570.087977	6883.756805
88750	SAN DIEGO FWY	Interstate	65	Freeways	0.060858	121163.2009	7373.750079	6238.212368	202.2373495	173.5676569	759.7327048	3694.358923	880.290992	1663.562453
93065	0	Ramp-Other	30	Ramps	0.247585	2968.973921	735.0734082	480.6453562	50.83579369	41.66267957	161.9295788	373.5601695	47.10049959	59.98468682
105014	VERA ST	Other	35	Principal Arterial	0.257157	11834.43279	3043.307233	2699.917205	73.02667313	64.60857188	205.7547832	2074.304665	307.23758	318.3749602
105023	E DEL AMO BLVD	Other	50	Principal Arterial	0.796681	30584.4626	24366.06025	21972.9306	478.7065276	460.114701	1454.308416	13618.91854	3401.537591	4733.121634
105556	WILMINGTON AVE	Other	40	Minor Arterial	0.270879	21691.36166	5875.734354	4881.220153	82.48577332	79.73034473	832.2980826	3765.140524	538.9792569	577.1003722

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
127078	0	Ramp-Other	30	Ramps	0.267374	6901.478453	1845.2759	1563.206642	61.38636003	58.3889138	162.2939844	1065.91469	212.5912339	282.2052272
1646487	0	Centroid Connector	25	Tier 1 Centroid Co	0.352764	18292.71549	6453.011486	5675.076516	177.8578072	180.6481183	419.4290448	4245.570003	730.3716139	699.1348989
1646488	0	Centroid Connector	25	Tier 1 Centroid Co	1.124468	4571.368158	5140.35721	5140.347344	0.00428085	0.000976038	0.004609194	4908.714528	110.9959439	120.6368717
2674146	E CARSON ST	Other	40	Minor Arterial	0.266139	17143.82465	4562.640349	4148.885006	78.62068434	85.04636379	250.0882948	3152.054941	464.950362	493.9105392
2674147	MARTIN ST	Other	30	Major Collector	0.095254	71.333333	6.794785302	6.794785302	0	0	0	0	0	0
2674148	E 213TH ST	Other	30	Major Collector	0.1997	1552.700842	310.0743581	238.7759546	16.67753232	19.14729271	35.4735785	209.5170575	18.93901081	10.31988612
2683299	WILMINGTON AVE	Other	45	Minor Arterial	0.374057	47578.40204	17797.03433	16201.28498	326.2016968	246.0324928	1023.515161	11556.4753	1951.586522	2693.223162
2683303	E 223RD ST	Other	45	Principal Arterial	0.094683	26343.75394	2494.305654	2383.691975	22.17764075	16.01915431	72.41688424	1569.684316	321.8183426	485.4352618
2683305	E 220TH ST	Other	30	Major Collector	0.193675	6279.048808	1216.094778	1171.862888	20.06431728	4.002804983	20.16476779	894.600111	127.5949607	135.8523327
2731326	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.331084	0	0	0	0	0	0	0	0	0
2762701	0	Ramp-Other	30	Ramps	0.19868	3368.421715	669.2380263	438.2598454	45.59373171	35.96463995	149.4198093	305.0635761	56.41158949	76.78467995
17748	SAN DIEGO FWY	Interstate	65	Freeways	0.492361	124748.2824	61421.18907	51960.25678	1671.176601	1416.130464	6373.62523	30510.0266	7578.287912	13871.94227
98413	E CARSON ST	Other	40	Minor Arterial	0.221502	29809.82282	6602.935375	6015.298377	137.1577012	133.1394236	317.3398728	4525.635944	726.8607908	731.2006903
104391	BONITA ST	Other	25	Major Collector	0.059342	765.443267	45.42293435	45.00414522	0.143572094	0.106370713	0.168846327	28.14048929	6.577491966	5.499242782
104634	S EDGAR ST	Other	25	Major Collector	0.248464	0	0	0	0	0	0	0	0	0
104635	E 223RD ST	Other	45	Principal Arterial	0.248903	26343.75394	6557.039386	6266.257761	58.30065921	42.11120861	190.3697574	4126.391595	845.9971793	1276.113906
2663554	SAN DIEGO FWY	Interstate	65	Freeways	0.78342	124531.6226	97560.56377	82032.10499	2783.166438	2376.135147	10369.15719	48760.08052	11554.35105	21717.67342
2731328	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.585407	0	0	0	0	0	0	0	0	0
2732885	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.822204	0	0	0	0	0	0	0	0	0
2732893	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.181	0	0	0	0	0	0	0	0	0
2759879	E WATSON CENTER RD	Other	30	Major Collector	0.489183	1034.237413	505.9313604	497.9839955	2.139810205	0.547098354	5.260456296	358.2774966	57.23623223	82.47026669
2759883	LUCERNE ST	Other	25	Major Collector	0.300202	0	0	0	0	0	0	0	0	0
104392	E 223RD ST	Other	45	Principal Arterial	0.252532	26343.75394	6652.640869	6357.619655	59.15068147	42.72518906	193.145344	4186.554289	858.3317987	1294.719617
2759882	BONITA ST	Other	25	Major Collector	0.28716	0	0	0	0	0	0	0	0	0
17806	SAN DIEGO FWY	Interstate	65	Freeways	0.2805	112070.3644	31435.73722	26180.62363	925.8459584	784.9692213	3544.298406	14938.68257	3900.385171	7341.555894
93127	0	Ramp-Other	30	Ramps	0.097966	3493.439611	342.2383049	251.5119459	20.39679276	18.82131707	51.50824921	185.6743856	27.09887792	38.73868245
98412	E CARSON ST	Other	40	Minor Arterial	0.096288	34547.29996	3326.490418	3110.088007	50.82051214	46.7404389	118.8414598	2335.173628	364.7165727	395.5620303
104394	BONITA ST	Other	25	Major Collector	0.098283	765.443267	75.23006061	74.53645655	0.237785988	0.176172572	0.279645504	46.60664806	10.89372861	9.107918142
104395	E 220TH ST	Other	25	Major Collector	0.251598	0	0	0	0	0	0	0	0	0
1656507	0	Ramp-Other	30	Ramps	0.129176	11770.347	1520.446344	1430.597086	16.62506513	16.8190579	56.40513469	1012.356742	174.4314961	243.8088478
1656508	0	Ramp-Other	30	Ramps	0.213602	2997.985225	640.37564	620.3414663	4.200354314	3.214398668	12.61942075	445.6926415	73.18543395	101.463391
2671100	0	Ramp-Other	30	Ramps	0.145291	3493.439611	507.5653345	373.0112706	30.24998895	27.91343913	76.39063589	275.3691807	40.189689	57.45240095
2671102	0	Ramp-Other	30	Ramps	0.213627	9679.932756	2067.894995	1985.255912	15.77570089	13.39244283	53.47093893	1414.828084	244.3869343	326.0408937
2671103	0	Ramp-Other	30	Ramps	0.124485	11770.347	1465.231646	1378.645246	16.0213293	16.20827726	54.35679377	975.5932142	168.097052	234.9549794
2732891	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.188727	0	0	0	0	0	0	0	0	0
2683295	BONITA ST	Other	25	Major Collector	0.191948	765.443267	146.9253042	145.5706863	0.464399183	0.344067366	0.546151372	91.02340061	21.27559617	17.78788469
2732892	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.130243	0	0	0	0	0	0	0	0	0
98434	E CARSON ST	Other	40	Minor Arterial	0.15519	43652.98843	6774.507274	6488.32947	69.2184284	59.81687232	157.1425034	4822.04753	764.0636349	878.6294246
2683297	BONITA ST	Other	25	Major Collector	0.165069	765.443267	126.3509546	125.1860275	0.399368104	0.295886678	0.469672311	78.27714649	18.29631663	15.29699887
2732884	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.150338	0	0	0	0	0	0	0	0	0
104878	E 220TH ST	Other	25	Major Collector	0.13366	0	0	0	0	0	0	0	0	0
2671101	0	Ramp-Other	30	Ramps	0.094181	12677.91798	1194.018993	1148.752755	8.806991324	7.321566897	29.13768048	820.2643641	140.0108128	188.4775776
104909	E 223RD ST	Other	45	Principal Arterial	0.325927	26343.75394	8586.14069	8205.375561	76.34202462	55.14268566	249.2804181	5403.319499	1107.794292	1671.01231
2759880	E WATSON CENTER RD	Other	30	Major Collector	0.265456	1034.237413	274.5445267	270.2318754	1.161171704	0.296883867	2.854595696	194.4199025	31.05934029	44.75263268
2759881	LUCERNE ST	Other	25	Major Collector	0.275004	0	0	0	0	0	0	0	0	0
2683301	E 223RD ST	Other	45	Principal Arterial	0.05436	26343.75394	1432.046464	1368.540242	12.73276672	9.197017714	41.57643745	901.197041	184.7643727	278.7011484
104890	ACARUS AVE	Other	30	Major Collector	0.341355	0.001525	0.000520566	0.000520566	0	0	0	0	0	0.000520566
105011	VERA ST	Other	35	Major Collector	0.265627	6279.047283	1667.884493	1607.220059	27.51839115	5.489882945	27.65615992	1226.952078	174.9976333	186.3222879
105012	E 220TH ST	Other	30	Major Collector	0.24067	6279.048808	1511.178677	1456.213973	24.93289913	4.974080678	25.05772383	1111.673725	158.5557206	168.8167337
105015	E CARSON ST	Other	40	Minor Arterial	0.253252	17215.15799	4359.77319	3966.052735	74.81370844	80.92824322	237.9785031	2999.425931	442.4365053	469.9943709
2732940	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.065467	0	0	0	0	0	0	0	0	0
2732941	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24956	0	0	0	0	0	0	0	0	0
2732942	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.299619	0	0	0	0	0	0	0	0	0
104889	E CARSON ST	Other	40	Minor Arterial	0.149668	11517.10581	1723.742192	1656.734538	17.21675635	13.31777085	36.47312759	1256.675964	181.2604206	197.4455186
2732939	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.19374	0	0	0	0	0	0	0	0	0
140584	E DEL AMO BLVD	Other	50	Principal Arterial	0.582668	27250.02741	15877.71897	14793.35443	217.46708	206.206186	660.6912784	9455.59206	2156.648451	3020.685995
1646489	0	Centroid Connector	25	Tier 1 Centroid Co	0.626587	14040.82567	8797.798832	8292.85732	181.0153193	167.8668147	156.0593779	6586.933084	850.2424306	855.6818061
1646490	0	Centroid Connector	25	Tier 1 Centroid Co	0.7055	15023.34266	10598.96825	9019.301397	366.061005	330.6811099	882.9247353	6231.034413	1371.692301	1416.574685
2683307	E 213TH ST	Other	30	Major Collector	0.492522	2657.132024	1308.695979	1158.928428	43.21796624	43.78608446	62.76349988	797.4000074	178.6532951	147.7418903
2683309	LEAPWOOD AVE	Other	35	Major Collector	0.447292	721.012278	322.5030239	322.1421294	0.283880577	0.047446499	0.029567343	267.7916409	34.33164474	20.01884465
2732886	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.4814	0	0	0	0	0	0	0	0	0
2732887	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.509615	0	0	0	0	0	0	0	0	0
140582	LEAPWOOD AVE	Other	35	Major Collector	0.094257	721.012278	67.96045429	67.88440369	0.059821619	0.009998311	0.00623067	56.4312277	7.23464278	4.218533396
153301	GALWAY AVE	Other	30	Major Collector	0.053074	71.333333	3.785945316	3.785945316	0	0	0	0	0	0
105505	E 213TH ST	Other	30	Major Collector	0.248756	1624.034175	403.9882452	315.1754978	20.77434266	23.85079593	44.18760888	260.9846027	23.59134989	12.85495038
1646491	0	Centroid Connector	25	Tier 1 Centroid Co	0.093131	14998.82518	1396.855588	1219.881349	39.85046694	37.8291166	99.29465554	922.7623772	150.9644487	146.1545234

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2674149	MARTIN ST	Other	30	Major Collector	0.162662	71.333333	11.60322261	11.60322261	0	0	0	0	0	0
17111	SAN DIEGO FWY	Interstate	65	Freeways	0.423552	139086.6328	58910.42151	50417.23584	1535.20927	1297.484023	5660.49238	30541.16761	6949.426256	12926.64197
17336	SAN DIEGO FWY	Interstate	65	Freeways	0.404539	135245.4558	54712.06144	46942.39639	1373.995116	1158.905981	5236.763954	28005.82368	6748.48511	12188.08759
105365	WILMINGTON AVE	Other	40	Minor Arterial	0.085219	48944.09454	4170.966792	3593.576024	80.06488798	61.85782648	435.4680544	2566.374605	423.089141	598.0333226
127102	S ALAMEDA ST	Other	45	Principal Arterial	0.344244	28226.73708	9716.884879	4902.809838	271.8448027	232.3125326	4309.917706	3712.00541	549.7053563	636.2796555
2674143	E 220TH ST	Other	30	Minor Collector	0.584362	0	0	0	0	0	0	0	0	0
2683317	E CARSON ST	Other	35	Minor Arterial	0.269188	12825.02882	3452.343859	3299.086584	42.78150023	35.30645016	75.16932473	2455.55516	392.9443972	412.1828719
2683319	E 223RD ST	Other	45	Principal Arterial	0.317588	33731.70052	10712.78331	9736.487469	80.0389997	55.49884695	840.7579896	6528.252734	1328.263869	1879.970865
2731314	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.760779	0	0	0	0	0	0	0	0	0
2683313	E 223RD ST	Other	45	Principal Arterial	0.236307	33731.70052	7971.036955	7244.606674	59.55444129	41.29490417	625.5809358	4857.462558	988.3183565	1398.825759
17344	SAN DIEGO FWY	Interstate	65	Freeways	0.426417	121163.2009	51666.04863	43709.61588	1417.027242	1216.145775	5323.259732	25885.46204	6167.981924	11656.17192
105481	WILMINGTON AVE	Other	40	Minor Arterial	0.275576	16869.8561	4648.927463	3494.601283	89.03722248	107.798148	957.4908099	2665.314516	403.4106634	425.8761042
127093	0	Ramp-Other	30	Ramps	0.198819	13466.1473	2677.32594	2474.844457	41.26752794	31.18074798	130.0332076	1743.844924	294.3363749	436.6631586
2671106	0	Ramp-Other	30	Ramps	0.179523	17923.43196	3217.668275	2967.506918	54.12694245	37.93860169	158.095813	2047.041734	348.7810104	571.6841741
98330	WILMINGTON AVE	Other	40	Minor Arterial	0.068343	23148.9049	1582.065608	1280.183765	29.16146945	28.14648862	244.5738847	976.681181	145.0710955	153.5563546
127085	0	Ramp-Other	30	Ramps	0.115466	0	0	0	0	0	0	0	0	0
127088	WILMINGTON AVE	Other	40	Minor Arterial	0.110874	38734.1428	4294.609349	3652.591081	80.93156669	67.34733	493.7393708	2633.054069	428.8281389	582.7998614
2671105	0	Ramp-Other	30	Ramps	0.154151	0	0	0	0	0	0	0	0	0
93015	0	Ramp-Other	30	Ramps	0.149714	17923.43196	2683.388692	2474.765521	45.13940309	31.63906471	131.8447026	1707.139509	290.8674665	476.758546
2671104	0	Ramp-Other	30	Ramps	0.144063	13466.1473	1939.973579	1793.256766	29.90219183	22.59337436	94.22124642	1263.579091	213.2742906	316.4033851
2683325	E 223RD ST	Other	45	Principal Arterial	0.278414	33731.70052	9391.377669	8535.506449	70.16631	48.65314802	737.0517618	5723.002622	1164.424528	1648.079299
2731315	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.494224	0	0	0	0	0	0	0	0	0
127095	0	Ramp-Other	30	Ramps	0.129947	6920.412128	899.2867948	600.2820523	12.92423403	8.157882807	277.9226256	483.4681797	56.20834315	60.60552963
127096	0	Ramp-Other	30	Ramps	0.141913	9122.859535	1294.652365	853.6529786	53.422611	37.51117416	350.0656014	661.1621128	85.59725096	106.8936149
2674145	ARNOLD CENTER RD	Other	30	Minor Collector	0.263227	0	0	0	0	0	0	0	0	0
2683327	E CARSON ST	Other	35	Minor Arterial	0.241923	12825.02882	3102.669448	2964.935003	38.44832935	31.73039787	67.55571774	2206.841579	353.1445956	370.4344804
2731311	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.265694	0	0	0	0	0	0	0	0	0
2731312	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.211586	0	0	0	0	0	0	0	0	0
2731313	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.171067	0	0	0	0	0	0	0	0	0
92947	0	Ramp-Other	30	Ramps	0.10232	5713.365773	584.5915859	500.3046629	7.594536446	3.683492169	73.00889434	367.8003301	55.9019541	76.60237878
105699	WILMINGTON AVE	Other	40	Minor Arterial	0.544086	18371.35715	9995.598228	8440.905623	163.6611112	167.7220092	1223.309485	6408.013493	990.6541631	1042.237967
1646492	0	Centroid Connector	25	Tier 1 Centroid Co	0.41088	7167.324211	2944.910172	2138.965753	114.3556216	123.0948074	568.4939896	1844.373967	152.3127032	142.2790843
1646493	0	Centroid Connector	25	Tier 1 Centroid Co	0.39538	2294.618866	907.2464072	594.7039794	75.55491178	86.04749159	150.9400245	520.9291787	42.26109751	31.51370359
2752048	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.561518	0	0	0	0	0	0	0	0	0
105596	WILMINGTON AVE	Other	40	Minor Arterial	0.225088	16076.73829	3618.680868	3153.434572	24.69342715	20.40004079	420.1528278	2354.428163	385.7738919	413.232517
2683329	E 213TH ST	Other	30	Major Collector	0.145298	1552.700842	225.6043269	173.7289367	12.13426185	13.9312135	25.80991491	152.4407082	13.77967147	7.5085569
2683331	WILMINGTON AVE	Other	40	Minor Arterial	0.042967	16076.73829	690.769214	601.9584485	4.713723007	3.894159407	80.2028831	449.4362865	73.64029541	78.88186646
105843	E DEL AMO BLVD	Other	45	Principal Arterial	0.22384	43738.2109	9790.361127	9299.931599	101.5795256	86.29092325	302.5590791	6268.389825	1290.146126	1709.461142
2683333	E DEL AMO BLVD	Other	50	Principal Arterial	0.044815	30584.4626	1370.642691	1236.024061	26.92825991	25.88243014	81.80794029	766.093122	191.3437212	266.2481546
17519	GARDENA FWY	State Route-Limited Access	65	Freeways	0.701007	103671.9664	72674.77414	62840.27588	1491.890651	1234.302989	7108.304618	44172.83021	6983.977297	11683.46837
105034	E UNIVERSITY DR	Other	45	Minor Arterial	0.788575	2603.156671	2052.784272	1754.484903	59.19794437	61.73607237	177.3653522	1356.325388	183.2591049	158.6487264
105042	E VICTORIA ST	Other	40	Minor Arterial	0.318131	2529.855207	804.8253669	693.0794248	27.21927054	25.73174121	58.79493029	433.8527931	121.4214332	137.8051978
105059	W GREENLEAF BLVD	Other	40	Minor Arterial	0.701957	11347.71775	7965.609907	7615.921465	108.2629741	95.2410737	146.1843942	6031.424943	800.9022903	783.594232
140635	W WALNUT ST	Other	35	Minor Collector	0.540848	436.09696	235.8621686	235.861148	0.00046567	0.000242841	0.000312069	132.9124463	8.64300632	8.671427883
1646494	0	Centroid Connector	25	Tier 1 Centroid Co	0.434294	3256.050892	1414.083366	1382.637182	10.35701161	6.363989667	14.72518235	987.4405932	199.2405685	195.9560203
1646495	0	Centroid Connector	25	Tier 1 Centroid Co	0.132511	3813.405895	505.3182286	389.0459634	38.47835442	26.64675333	51.14715736	0	187.4849807	201.5609825
1646496	0	Centroid Connector	25	Tier 1 Centroid Co	0.524784	19483.83695	10224.80589	10224.80589	0	0	0	8451.154947	946.1425685	827.5083719
1646497	0	Centroid Connector	25	Tier 1 Centroid Co	0.421017	9636.459214	4057.113149	3371.407575	15.75734011	11.33349261	658.6147413	2597.608353	414.7196504	359.0795712
1646498	0	Centroid Connector	25	Tier 1 Centroid Co	0.382	9852.019175	3763.471325	2788.82534	25.21814103	21.22266131	928.2051822	2111.437969	342.7114215	334.6759499
2674160	CHARLES WILLARD ST	Other	30	Minor Collector	0.347758	38.666667	13.44664278	13.44664278	0	0	0	0	0	0
2676143	S CENTRAL AVE	Other	40	Principal Arterial	0.194102	17727.53205	3440.949425	3103.858442	70.27782227	61.81593976	204.9972213	2349.725272	384.0555406	370.0776289
2683347	KEMP AVE	Other	30	Minor Collector	0.202303	71.333333	14.43094727	14.43094727	0	0	0	0	0	0
2732902	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.212541	0	0	0	0	0	0	0	0	0
2732903	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.30124	0	0	0	0	0	0	0	0	0
2732944	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.200919	0	0	0	0	0	0	0	0	0
2732946	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.517793	0	0	0	0	0	0	0	0	0
2732947	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.157899	0	0	0	0	0	0	0	0	0
105033	S CENTRAL AVE	Other	40	Principal Arterial	0.293953	13478.18973	3961.954307	3533.043051	90.73018197	80.08660035	258.0944737	2690.831261	433.5803325	408.6314565
140614	E UNIVERSITY DR	Other	45	Minor Arterial	0.385858	4662.466323	1799.04993	1724.626345	22.84496212	19.00089617	32.57772701	1200.338884	233.2643203	248.5787616
140615	CANEY AVE	Other	25	Minor Collector	0.062557	3219.218242	201.3846356	198.4935329	1.180328229	0.532421564	1.178352866	137.6710263	27.98187578	30.4217603
2683345	E TURMONT ST	Other	30	Major Collector	0.247565	394.534836	97.67301667	97.67301667	0	0	0	66.66205308	7.609118972	5.742208036
2732905	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.393061	0	0	0	0	0	0	0	0	0
2732910	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.224207	0	0	0	0	0	0	0	0	0
2744650	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.266101	0	0	0	0	0	0	0	0	0
1646499	0	Centroid Connector	25	Tier 1 Centroid Co	0.366232	3180.551575	1164.819764	1147.894172	6.91008149	3.116994326	6.898516982	805.9775131	163.8163328	178.1003264
2683339	E TURMONT ST	Other	30	Major Collector	0.251894	394.534836	99.38095798	99.38095798	0	0	0	67.82772686	7.742174437	5.842618105

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2683341	BRENNER DR	Other	25	Minor Collector	0.241062	38.666667	9.32106408	9.32106408	0	0	0	0	0	0
2732911	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.254272	0	0	0	0	0	0	0	0	0
2732912	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.119994	0	0	0	0	0	0	0	0	0
2732913	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.187662	0	0	0	0	0	0	0	0	0
2683343	E TURMONT ST	Other	30	Major Collector	0.152595	394.534836	60.2040433	60.2040433	0	0	0	41.08939466	4.690135963	3.539402724
140610	KEMP AVE	Other	30	Minor Collector	0.275699	71.333333	19.66652857	19.66652857	0	0	0	0	0	0
2744648	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.257124	0	0	0	0	0	0	0	0	0
2674162	S CENTRAL AVE	Other	40	Principal Arterial	0.315047	17766.19871	5597.187606	5050.055155	114.0679492	100.3334658	332.7310361	3813.83962	623.3606347	600.6730829
2674161	S CENTRAL AVE	Other	40	Principal Arterial	0.165162	17766.19871	2934.300912	2647.469138	59.79961918	52.59937684	174.4327779	1999.388597	326.7940629	314.900214
17743	GARDENA FWY	State Route-Limited Access	65	Freeways	0.638429	104694.8264	66840.21334	56994.0716	1433.668303	1198.647573	7213.825863	39519.08583	6571.583725	10900.42271
93088	0	Ramp-Other	30	Ramps	0.325278	2808.961887	913.6935047	752.5508202	7.491973992	6.46993165	147.1807788	489.1001789	118.4393413	145.0113007
93107	0	Ramp-Other	30	Ramps	0.269	3465.224713	932.1454478	600.3333312	7.586536791	6.416468836	317.8091109	431.285456	82.01788507	87.02998991
105053	S CENTRAL AVE	Other	40	Principal Arterial	0.084229	30775.39078	2592.18039	2339.400426	38.95624141	34.83298415	178.990739	1759.848358	269.8994077	283.653975
1646500	0	Centroid Connector	25	Tier 1 Centroid Co	0.438092	11250.25871	4928.648338	3573.73701	140.9341136	137.4158283	1076.561386	2785.405	383.1727834	405.1592273
1646501	0	Centroid Connector	25	Tier 1 Centroid Co	0.260195	819.712243	213.2850271	188.7483284	5.934427385	6.053772587	12.54849868	142.486527	25.84866507	20.41313636
2683351	E VICTORIA ST	Other	40	Minor Arterial	0.232566	7033.497518	1635.752384	1369.332387	43.70844567	34.28305361	188.428498	687.4185072	278.9663246	314.5724741
2683353	E RADBARD ST	Other	30	Minor Arterial	0.198418	71.333333	14.15381727	14.15381727	0	0	0	0	0	0
2683355	E WALNUT ST	Other	40	Minor Arterial	0.205779	2026.431254	416.996997	401.3327865	4.531014053	4.088897254	7.044299162	284.1353803	51.97476839	65.22263809
17733	GARDENA FWY	State Route-Limited Access	65	Freeways	0.124904	106480.9283	13299.89386	11485.72556	268.6988933	222.4099925	1323.059418	8058.435281	1289.87056	2137.419719
17866	GARDENA FWY	State Route-Limited Access	65	Freeways	0.103203	108160.0511	11162.44176	9443.497124	234.6652268	196.2248735	1288.054534	6553.783672	1093.772822	1795.459016
104530	E VICTORIA ST	Other	40	Minor Arterial	0.281172	7033.497518	1977.622564	1655.521124	52.84345556	41.44816848	227.8098158	831.0881062	337.2699337	380.3177235
140634	E RADBARD ST	Other	30	Minor Arterial	0.224979	71.333333	16.04850193	16.04850193	0	0	0	0	0	0
2674163	LYSANDER DR	Other	30	Minor Collector	0.244663	0	0	0	0	0	0	0	0	0
2674164	E MEADBROOK ST	Other	30	Minor Collector	0.063331	71.333333	4.517611312	4.517611312	0	0	0	0	0	0
2674165	TAMCLIFF AVE	Other	30	Minor Collector	0.144608	71.333333	10.31537062	10.31537062	0	0	0	0	0	0
2683349	SUDBURY CT	Other	30	Minor Collector	0.079745	71.333333	5.68847664	5.68847664	0	0	0	0	0	0
2732670	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.310456	0	0	0	0	0	0	0	0	0
105041	S CENTRAL AVE	Other	40	Principal Arterial	0.240597	33765.45981	8123.868333	7452.424643	97.23169329	80.91937501	493.2926218	5567.247628	884.8779162	908.8722381
98390	E ARTESIA BLVD	Other	45	Minor Arterial	0.065171	7015.470039	457.2051979	372.0979765	3.514210489	2.903382257	78.68962862	190.6424554	78.59462547	102.8608957
140633	S CENTRAL AVE	Other	40	Principal Arterial	0.125577	33694.12647	4231.20732	3880.754554	50.74902991	42.23499194	257.4687447	2905.764641	461.8524507	474.3760273
2683357	E RADBARD ST	Other	30	Minor Arterial	0.066846	71.333333	4.768347978	4.768347978	0	0	0	0	0	0
2683359	E RADBARD ST	Other	30	Minor Arterial	0.189763	71.333333	13.53642727	13.53642727	0	0	0	0	0	0
105052	S CENTRAL AVE	Other	45	Minor Arterial	0.057057	19496.69077	1112.422685	1011.722065	18.88448097	15.86539232	65.95074749	643.9313728	162.1894837	205.601208
105058	S CENTRAL AVE	Other	40	Principal Arterial	0.338134	18351.89507	6205.399689	5932.494324	69.34356177	60.38682357	143.1749793	4429.079487	706.0274537	746.5545715
98375	W ARTESIA BLVD	Other	35	Minor Arterial	0.040676	15978.31801	649.9340633	580.9610922	11.47804467	9.757192759	47.73773372	368.0496148	91.33726903	121.5742083
105055	S CENTRAL AVE	Other	40	Principal Arterial	0.099368	29754.96995	2956.691854	2565.456033	53.00402896	49.76377402	288.4680182	1911.808835	299.6733166	323.3022922
105054	E ARTESIA BLVD	Other	40	Minor Arterial	0.040314	4266.371889	171.9945163	151.3217188	1.091424066	0.98427018	18.59710331	67.40512427	33.27531593	50.64127854
105808	S WILMINGTON AVE	Other	35	Minor Arterial	0.146839	15373.96082	2257.497033	1812.599847	39.02273869	39.410159	366.4642882	1380.89848	206.8771356	194.869075
1646502	0	Centroid Connector	25	Tier 1 Centroid Co	0.391939	2514.421851	985.4999859	944.3903782	9.306393234	6.6267788	25.17643565	683.2528589	135.3505999	125.7869194
2674154	S WILMINGTON AVE	Other	35	Minor Arterial	0.239633	12732.13748	3051.040302	2415.64061	45.69378382	45.55474324	544.1511643	1841.38717	281.9228955	269.8050427
2674155	GLENN CURTISS ST	Other	30	Minor Collector	0.117765	38.666667	4.553580039	4.553580039	0	0	0	0	0	0
2683364	KEMP AVE	Other	30	Minor Collector	0.132859	71.333333	9.477275289	9.477275289	0	0	0	0	0	0
2674151	E TURMONT ST	Other	30	Minor Collector	0.147616	71.333333	10.52994128	10.52994128	0	0	0	0	0	0
2683361	KEMP AVE	Other	30	Minor Collector	0.159698	0	0	0	0	0	0	0	0	0
2732894	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.246918	0	0	0	0	0	0	0	0	0
2732943	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.260301	0	0	0	0	0	0	0	0	0
2732945	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.092288	0	0	0	0	0	0	0	0	0
2674150	KEMP AVE	Other	30	Minor Collector	0.084277	0	0	0	0	0	0	0	0	0
2674152	KEMP AVE	Other	30	Minor Collector	0.101257	71.333333	7.2229993	7.2229993	0	0	0	0	0	0
2674153	S GUNLOCK AVE	Other	30	Minor Collector	0.095283	71.333333	6.796853968	6.796853968	0	0	0	0	0	0
2674157	HARMON AVE	Other	30	Minor Collector	0.237162	38.666667	9.170264079	9.170264079	0	0	0	0	0	0
2674158	CHARLES WILLARD ST	Other	30	Minor Collector	0.208036	38.666667	8.044058736	8.044058736	0	0	0	0	0	0
2732949	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.205659	0	0	0	0	0	0	0	0	0
2674159	BISHOP AVE	Other	30	Minor Collector	0.097234	38.666667	3.759714699	3.759714699	0	0	0	0	0	0
2732948	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.052915	0	0	0	0	0	0	0	0	0
2674156	HARMON AVE	Other	30	Minor Collector	0.090279	38.666667	3.49078803	3.49078803	0	0	0	0	0	0
2683368	S WILMINGTON AVE	Other	45	Minor Arterial	0.188903	15302.62749	2890.71224	2318.368291	50.20132531	50.69972736	471.4428962	1776.475362	266.1398644	250.6919338
140608	S WILMINGTON AVE	Other	45	Minor Arterial	0.070932	15302.62749	1085.445973	870.5340818	18.85031157	19.0374587	177.0241209	667.0563748	99.93400245	94.13339252
105773	S WILMINGTON AVE	Other	35	Minor Arterial	0.199219	12770.80415	2544.186832	2015.947019	37.98754728	37.87195584	452.3803099	1530.838034	234.3767233	224.302541
2683370	E VICTORIA ST	Other	40	Minor Arterial	0.42674	2529.855207	1079.590411	929.6947287	36.5118505	34.51648297	78.86734884	581.9688774	162.8743581	184.8514924
2683416	MCKINLEY AVE	Other	30	Minor Collector	0.10254	97.372233	9.984548772	9.9845378	3.48636E-06	1.84572E-06	5.6397E-06	0.003013548	0.00049937	0.000464916
2683420	E ALONDRA BLVD	Other	40	Principal Arterial	0.0945	16771.2254	1584.880801	1545.541186	10.73034194	9.369737276	19.23953538	1102.263933	202.7863633	220.6143899
2732950	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.149175	0	0	0	0	0	0	0	0	0
2732953	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.349013	0	0	0	0	0	0	0	0	0
103411	W ALONDRA BLVD	Other	40	Principal Arterial	0.144506	5440.667696	786.2091261	763.5768196	7.484293191	6.015273229	9.132740039	477.3316156	130.1344615	156.1107425
103792	W ALONDRA BLVD	Other	30	Principal Arterial	0.248652	2922.584667	726.7065226	716.6886993	3.233316941	2.047763351	4.736743021	453.9106106	108.8142346	153.9638546

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
103412	E ALONDRA BLVD	Other	40	Principal Arterial	0.609238	7570.278018	4612.101039	4471.382723	44.60218482	42.23470362	53.88142727	2914.530121	701.016918	771.1516022
2732982	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.575077	0	0	0	0	0	0	0	0	0
103397	S MAIN ST	Other	40	Minor Arterial	0.264706	8059.581787	2133.419657	1776.888531	79.07136611	79.37990319	198.0798558	1321.935825	219.47703	235.4756766
104075	AVALON BLVD	Other	40	Minor Arterial	0.115106	33436.125	3848.698604	3580.256863	67.13820318	60.93698184	140.3665558	2620.310809	440.0076805	505.6268614
104077	E ALONDRA BLVD	Other	40	Principal Arterial	0.222997	16771.2254	3739.932951	3647.101036	25.32099537	22.11029951	45.40062086	2601.074606	478.5264619	520.5962656
146124	MCKINLEY AVE	Other	30	Minor Collector	0.258516	97.372233	25.17228019	25.17225253	8.78954E-06	4.65329E-06	1.42184E-05	0.007597527	0.001258973	0.001172112
2732993	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.301976	0	0	0	0	0	0	0	0	0
104076	AVALON BLVD	Other	40	Principal Arterial	0.257575	40023.37967	10309.02202	9719.770193	147.818612	131.7595072	309.6737054	7224.375592	1158.238953	1286.756805
2683418	E ALONDRA BLVD	Other	40	Principal Arterial	0.019269	16771.2254	323.1647423	315.1432076	2.187967819	1.910534048	3.923032881	224.7568648	41.34910512	44.98432464
2676603	MCKINLEY AVE	Other	30	Minor Collector	0.130237	0	0	0	0	0	0	0	0	0
2676605	MCKINLEY AVE	Other	30	Minor Collector	0.130067	0	0	0	0	0	0	0	0	0
2683517	MCKINLEY AVE	Other	30	Minor Collector	0.050402	97.372233	4.907755288	4.907749895	1.71367E-06	9.07236E-07	2.77211E-06	0.001481264	0.000245458	0.000228523
2744551	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.193944	0	0	0	0	0	0	0	0	0
2676604	0	0	30	Minor Collector	0.082042	97.372233	7.98861274	7.988603961	2.78943E-06	1.47676E-06	4.51231E-06	0.002411132	0.000399545	0.000371978
2676602	MCKINLEY AVE	Other	30	Minor Collector	0.033546	97.372233	3.266448928	3.266445339	1.14056E-06	6.03828E-07	1.84503E-06	0.000985883	0.000163369	0.000152098
2685428	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.081485	29845.0778	2431.926164	2273.880268	34.02238234	32.71808715	91.3054265	1593.471141	295.1064912	385.3026364
2685436	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.099648	29845.0778	2974.002313	2780.727999	41.60596865	40.01094617	111.6573988	1948.655731	360.8857046	471.1865633
106458	S ALAMEDA ST	Other	45	Principal Arterial	0.770006	18301.91946	14092.58779	9831.179207	511.6920387	523.6962505	3226.020295	7858.803206	1016.921401	955.4545992
106169	S ALAMEDA ST	Other	45	Principal Arterial	0.267768	26677.04515	7143.259025	3990.304102	132.0667927	139.1918352	2881.696296	3112.799298	432.1087271	441.6473253
106390	S HARBOR VIEW AVE	Other	30	Major Collector	0.255563	2328.190989	594.9994737	417.0619246	18.89909137	20.40341415	138.6350436	355.1293729	33.35271572	28.57983595
106649	S SANTA FE AVE	Other	40	Minor Arterial	0.222696	16379.40895	3647.628854	3235.076333	71.32794944	64.48404973	276.7405227	2417.770325	372.1694292	371.7953618
140587	S PROSPECT AVE	Other	30	Minor Collector	0.257993	0.012967	0.003345395	0.002913257	0.000107067	7.456E-05	0.000250511	0.00236012	0.000293338	0.00025979
1633394	METRO BLUE LINE	0	25	Metro Blue Line	2.096882	0	0	0	0	0	0	0	0	0
2666011	I 405 HOV	HOV-Interstate	65	Freeways	1.655005	16990.02127	28118.57016	28118.57016	0	0	0	25106.35619	79.23015698	2916.433761
2734360	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.189448	0	0	0	0	0	0	0	0	0
2734361	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.104823	0	0	0	0	0	0	0	0	0
106719	S SANTA FE AVE	Other	40	Minor Arterial	0.124101	30545.61246	3790.741052	3472.064873	55.04598726	47.80316015	215.8270316	2514.376858	435.2069572	511.0637661
127111	0	Ramp-Other	30	Ramps	0.148022	12285.45622	1818.5178	1538.587687	46.53297437	32.66131541	200.7358236	1049.378662	188.2693121	300.9397131
140575	S MCHELEN AVE	Other	25	Minor Collector	0.160387	947.460911	151.9604131	138.4825264	1.936473824	1.49859486	10.04281805	97.87376319	13.11763572	12.30782508
1648156	0	Centroid Connector	25	Tier 1 Centroid Co	0.328065	1159.462053	380.3789184	368.1082038	1.497721706	0.453896955	10.31909594	275.8039263	48.57016137	43.73411682
1648157	0	Centroid Connector	25	Tier 1 Centroid Co	0.532067	114.92524	61.14792767	61.14792767	0	0	0	47.69783418	7.746555529	5.703537964
2686378	E CARSON ST	Other	35	Minor Arterial	0.119984	11949.73663	1433.7772	1289.462761	25.94328363	23.90815846	94.46299705	969.8291537	143.7336304	147.4237744
127113	SAN DIEGO FWY	Interstate	65	Freeways	0.27379	143111.4648	39182.48796	33048.4043	1077.489495	906.375983	4150.218177	20065.2493	4569.719926	8405.221379
140570	E CARSON ST	Other	35	Minor Arterial	0.102555	10781.0077	1105.646244	1049.86382	15.05890628	12.38942947	28.33408902	772.6586179	124.6539182	128.2115637
140577	E 218TH ST	Other	25	Minor Collector	0.252922	947.460911	239.6337085	218.3797785	3.053719021	2.363206552	15.83700442	154.3418602	20.68583278	19.4088033
2670462	0	Ramp-Other	30	Ramps	0.085684	12285.45622	1052.66703	890.6267133	26.93607285	18.90632575	116.1979186	607.4432263	108.981555	174.201932
2671605	SAN DIEGO FWY	Interstate	65	Freeways	0.20058	131063.5234	26288.72153	22601.5673	666.3715355	567.3921577	2453.390535	13377.83053	3270.086916	5947.632456
2671606	I 405 HOV	HOV-Interstate	65	Freeways	0.286312	19820.53096	5674.855861	5674.855861	0	0	0	5361.622463	0.020491636	311.6859083
2734363	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13601	0	0	0	0	0	0	0	0	0
92915	0	Ramp-Other	30	Ramps	0.124135	6606.138207	820.0529663	425.7634423	50.64076339	38.20430152	305.4444592	302.2107928	45.32495151	78.22769781
2676301	ALAMEDA-CARSON CONNECTOR	0	30	Minor Collector	0.117482	2597.893216	305.2056908	289.6543543	2.712375896	2.223520136	10.61544044	219.9881288	33.02676423	36.63946144
2686372	E 218TH ST	Other	25	Minor Collector	0.058327	947.460911	55.26255256	50.3611285	0.704226083	0.544985207	3.652212764	35.59317766	4.77041368	4.475914591
2676300	E CARSON ST	Other	35	Minor Arterial	0.034596	11539.13528	399.207924	377.4830042	5.497689315	4.502713579	11.7245169	281.7610742	44.88038669	45.90584734
140572	S MCHELEN AVE	Other	25	Minor Collector	0.097542	947.460911	92.41723218	84.22043301	1.177698503	0.911395187	6.107705479	59.52354374	7.977706571	7.485206868
140576	E 221ST ST	Other	25	Minor Collector	0.136003	0	0	0	0	0	0	0	0	0
2734364	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.066897	0	0	0	0	0	0	0	0	0
2686374	E 221ST ST	Other	25	Minor Collector	0.057859	0	0	0	0	0	0	0	0	0
106391	E CARSON ST	Other	35	Minor Arterial	0.078685	11949.73663	940.265027	845.6242278	17.01349574	15.67886925	61.94843415	636.0098593	94.25990725	96.67988803
98052	S SANTA FE AVE	Other	35	Major Collector	0.099042	16636.08284	1647.670916	1527.129355	18.38946825	14.11273238	88.03936064	1044.390288	196.4838024	277.1434004
106648	S SANTA FE AVE	Other	40	Minor Arterial	0.394915	18365.36661	7252.758754	6273.325791	155.2929985	144.1252051	680.0147601	4832.790692	728.6334527	711.9016458
1648160	0	Centroid Connector	25	Tier 1 Centroid Co	0.214033	1102.850985	236.0465049	225.5942495	1.54477483	0.52705134	8.380429154	162.3694724	32.63927739	30.58549977
2686390	E CARSON ST	Other	35	Minor Arterial	0.141728	92	13.038976	13.038976	0	0	0	0	0	0
1656196	0	Centroid Connector	25	Tier 1 Centroid Co	0.19489	2914.278172	567.9636729	516.1292901	5.026483997	2.085175663	44.72272322	366.5380723	74.85829692	74.73292087
140585	E CARSON ST	Other	35	Minor Arterial	0.073279	11949.7496	875.665701	787.5270116	15.84462537	14.60168426	57.6923798	592.3139001	87.78392704	90.03763514
106394	E MONROE ST	Other	25	Major Collector	0.195329	0	0	0	0	0	0	0	0	0
106399	E DOMINGUEZ ST	Other	35	Major Collector	0.195487	3875.310464	757.5728167	602.8115991	12.32404042	11.56227215	130.874905	477.8137757	58.86964251	66.12818078
130617	S ALAMEDA ST	Other	45	Principal Arterial	0.506255	21610.75894	10940.55477	6989.711819	297.995735	297.4394094	3355.407802	5564.323685	716.7219605	701.5786033
1648161	0	Centroid Connector	25	Tier 1 Centroid Co	0.343767	3960.865464	1361.614838	605.5530643	51.94694454	56.69773332	647.4170958	467.8488633	70.12558826	67.57861237
1648162	0	Centroid Connector	25	Tier 1 Centroid Co	0.554249	3080.24278	1707.221481	1542.185887	48.17195879	42.57465024	74.28898475	1234.997397	160.4044781	146.7840124
1648163	0	Centroid Connector	25	Tier 1 Centroid Co	0.566497	0.032422	0.018366966	0.014351635	0.000442434	0.000291746	0.003281151	0.010104607	0.001897198	0.00234983
2676299	ALAMEDA-DEL AMO CONNECTOR	0	30	Minor Collector	0.172415	11589.49392	1998.202594	1335.327083	70.13275541	67.18429667	525.558458	1091.596706	124.137569	117.1789982
2686400	S SANTA FE AVE	Other	40	Minor Arterial	0.183529	21126.46013	3877.318101	3181.92664	91.42389073	92.71384174	511.2537285	2394.157994	358.4897618	368.8366671
2734357	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.14183	0	0	0	0	0	0	0	0	0
2734358	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.268251	0	0	0	0	0	0	0	0	0
2734367	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.088992	0	0	0	0	0	0	0	0	0
106250	S ALAMEDA ST	Other	45	Principal Arterial	0.219775	20324.72945	4466.867416	2935.742257	70.69986941	70.79859212	1389.626698	2262.091273	331.3261792	339.2479541

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
106251	E MONROE ST	Other	25	Major Collector	0.159434	2322.105824	370.2226199	259.2263367	11.78943992	12.72854955	86.47829381	220.692822	20.7431636	17.7903509
106393	S HARBOR VIEW AVE	Other	30	Major Collector	0.258528	6.085165	1.573185537	1.555724039	0.001351843	0.000327555	0.0157821	1.388129385	0.103877843	0.063716811
130618	E DOMINGUEZ ST	Other	35	Major Collector	0.076895	7842.261093	603.0306667	373.0314678	16.46774877	17.23047481	196.3009754	293.0114497	38.87326331	41.14675472
106346	S ALAMEDA ST	Other	45	Principal Arterial	0.050756	29440.82376	1494.298451	946.3874291	40.74566577	41.19375653	465.9715996	750.7284831	97.47507885	97.47328321
2734366	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.112654	0	0	0	0	0	0	0	0	0
106756	S ADRIATIC AVE	Other	40	Minor Arterial	0.129941	16379.40895	2128.356778	1887.636301	41.61918076	37.62583031	161.4754655	1410.746012	217.1573257	216.9390609
140588	E DOMINGUEZ ST	Other	35	Major Collector	0.238162	3875.297497	922.9486025	734.4032613	15.01429145	14.08625844	159.4447913	582.1188035	71.72067127	80.56378637
140589	S PROSPECT AVE	Other	30	Minor Collector	0.257011	0.012967	0.003332662	0.002902168	0.00010666	7.42762E-05	0.000249558	0.002351137	0.000292222	0.00025881
1648164	0	Centroid Connector	25	Tier 1 Centroid Co	0.089935	18475.90077	1661.630136	1293.090284	49.42305302	50.82554798	268.2912509	992.1461178	148.0201157	152.9240505
2686398	S ADRIATIC AVE	Other	40	Minor Arterial	0.137946	16379.40895	2259.473946	2003.923913	44.18312549	39.94376515	171.4231425	1497.654854	230.5352771	230.3035662
2686394	E MONROE ST	Other	25	Major Collector	0.081789	0	0	0	0	0	0	0	0	0
2686396	S SANTA FE AVE	Other	40	Minor Arterial	0.049307	16379.40895	807.6195169	716.2764878	15.79268241	14.27737831	61.27296831	535.3172102	82.40183049	82.31900844
140586	E MONROE ST	Other	25	Major Collector	0.076038	0	0	0	0	0	0	0	0	0
2734365	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.191816	0	0	0	0	0	0	0	0	0
106812	S SANTA FE AVE	Other	40	Minor Arterial	0.097846	21126.46013	2067.139618	1696.401081	48.74140878	49.42912869	272.5679992	1276.4129	191.1239599	196.6402723
2686402	S SANTA FE AVE	Other	40	Minor Arterial	0.252429	21126.46013	5332.931203	4376.477612	125.74602	127.5202413	703.1873298	3292.966824	493.0730952	507.3044098
2734356	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158109	0	0	0	0	0	0	0	0	0
2734359	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.314311	0	0	0	0	0	0	0	0	0
								3174281.034	69458.14949	59362.84896	309392.9238	2153272.515	395166.4724	617374.5349

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
16991	SAN DIEGO FWY	Interstate	65	Freeways	0.22748	136748.467	31107.54128	26731.09892	803.4701667	686.0334474	2886.938744	16236.33883	3640.930439	6853.829647
17109	SAN DIEGO FWY	Interstate	65	Freeways	0.21305	127956.4971	27261.13171	23274.72966	712.6092861	610.9082946	2662.884466	13700.69742	3367.145253	6206.886993
98209	S ALAMEDA ST	Other	45	Principal Arterial	0.260329	22892.75122	5959.647033	3481.201714	100.5938619	104.5212154	2273.330241	2684.890642	383.8653706	408.8010958
105700	E DOMINGUEZ ST	Other	35	Major Collector	0.714489	0	0	0	0	0	0	0	0	0
127099	S ALAMEDA ST	Other	45	Principal Arterial	1.084317	41751.30282	45271.64742	26624.63444	1298.657182	967.7791055	16380.5767	20273.04273	2899.674305	3436.736962
127105	0	Ramp-Other	30	Ramps	0.161127	2197.14533	354.0194356	225.5183205	16.29468231	10.55641458	101.6500182	155.1141569	29.61315188	40.79101186
140484	S MAIN ST	Other	40	Principal Arterial	0.380748	9252.765567	3522.971984	3370.516102	30.09658547	23.18088821	99.17840832	2487.404338	426.1018603	355.2232717
140494	AVALON BLVD	Other	40	Principal Arterial	0.280822	28869.91852	8107.30826	7721.790406	78.45006099	64.06560723	243.0021851	5799.549705	954.1489094	927.7470306
140497	CATSKILL AVE	Other	30	Minor Collector	0.220085	3143.621039	691.8638364	677.1827757	4.059158385	2.776806943	7.845095329	502.1711318	88.39764094	70.9146064
140506	CAROLDALE AVE	Other	35	Major Collector	0.381099	592.916715	225.9599672	201.7299854	0.820099895	0.38777433	23.02210751	144.138114	34.78795567	22.80391576
1645249	0	Centroid Connector	25	Tier 1 Centroid Co	0.376581	5527.432119	2081.525915	797.8121382	64.81065356	73.16804151	1145.735082	688.3499712	56.28156088	53.18060614
1645250	0	Centroid Connector	25	Tier 1 Centroid Co	0.473257	6028.064833	2852.823879	1669.653668	165.6730311	170.1248523	847.3723276	1428.215975	125.9178738	115.5198189
1645251	0	Centroid Connector	25	Tier 1 Centroid Co	0.585959	3310.392993	1939.754568	1446.49021	88.45960279	91.35138839	313.4533669	1177.914914	133.5664108	135.0088842
1645252	0	Centroid Connector	25	Tier 1 Centroid Co	0.485533	2535.018629	1230.8352	1087.875647	38.25103455	41.11114097	63.59737784	877.4439621	109.0988762	101.3328084
2665865	SR 91 HOV	HOV-Other	65	HOV	3.015281	7455.816643	22481.38226	22481.38226	0	0	0	0	7506.375485	14946.86416
2666003	I 405 HOV	HOV-Interstate	65	Freeways	1.97643	21764.91086	43016.82277	43016.82277	0	0	0	39951.73621	321.2220014	2674.030709
2671107	0	Ramp-Other	30	Ramps	0.12493	2197.14533	274.4893661	174.8558825	12.63410019	8.184927872	78.81445555	120.2679353	22.96059049	31.62735676
2671108	0	Ramp-Other	30	Ramps	0.17896	6399.756306	1145.300389	588.1306639	72.40096511	51.00883673	433.7599227	398.5891836	71.965394	117.5760861
2671604	I 405 HOV	HOV-Interstate	65	Freeways	0.652351	15636.17594	10200.27501	10200.27501	0	0	0	9122.792362	75.8617908	975.5268205
2674144	E CARSON ST	Other	35	Minor Arterial	0.374498	12682.32662	4749.505954	4493.206045	71.46202593	61.97350605	122.8643766	3361.048767	528.2212642	550.5076327
2680637	S FIGUEROA ST	Other	40	Minor Arterial	0.346613	3455.757021	1197.810308	1166.726954	10.82773502	9.25970945	10.99590957	848.849677	141.1053125	140.0309875
2680673	DOLORES ST	Other	35	Major Collector	0.319802	398.391479	127.4063918	119.4817951	2.014344533	3.042429291	2.867822836	102.6695903	9.967314985	6.844890102
2680744	WILMINGTON AVE	Other	45	Minor Arterial	0.576115	45463.10054	26191.97417	23855.70615	495.9796987	366.4962181	1473.7921	17059.45384	2870.372785	3925.879526
2731316	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.883277	0	0	0	0	0	0	0	0	0
2731325	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.36973	0	0	0	0	0	0	0	0	0
2731327	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.311649	0	0	0	0	0	0	0	0	0
2731330	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.671642	0	0	0	0	0	0	0	0	0
2731331	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.38912	0	0	0	0	0	0	0	0	0
2731350	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24311	0	0	0	0	0	0	0	0	0
2731375	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.62745	0	0	0	0	0	0	0	0	0
2751964	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.099233	0	0	0	0	0	0	0	0	0
2762157	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.098016	28997.23947	2842.193424	2669.140389	35.94646743	34.12474441	102.981823	1864.399829	353.9334563	450.8071036
104092	E LOMITA BLVD	Other	40	Principal Arterial	0.312573	36562.27155	11428.37891	10690.13427	143.8287943	107.6994799	486.7163566	7597.308515	1299.866404	1792.959355
2680681	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.297512	37811.13337	11249.26591	10589.39037	140.7107489	122.3352175	396.8295765	7773.049657	1284.656795	1531.683915
2731672	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.19387	0	0	0	0	0	0	0	0	0
2751962	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.30226	0	0	0	0	0	0	0	0	0
103322	S MAIN ST	Other	40	Principal Arterial	0.64411	11884.99952	7655.247043	7425.261086	64.48512096	50.43882868	115.0620075	5208.499691	1094.634865	995.8809678
103324	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.507583	26567.25734	13485.08818	12623.60542	146.5076267	127.1192114	587.855918	8655.292873	1735.84102	2228.918452
106383	FIGUEROA ST	Other	40	Minor Arterial	0.437034	11212.63051	4900.300764	4822.819722	29.17176777	21.03071109	27.27856314	3717.303636	546.5003761	546.9244354
1645446	0	Centroid Connector	25	Tier 1 Centroid Co	0.458134	4101.438519	1879.008434	1815.685698	15.88035199	15.29009855	32.15228622	1449.334558	201.3408554	165.0102849
1645447	0	Centroid Connector	25	Tier 1 Centroid Co	0.315395	1197.066594	377.5488184	373.9035877	1.22643112	1.252909161	1.165890419	288.996213	53.69555751	31.21181721
1645448	0	Centroid Connector	25	Tier 1 Centroid Co	0.444379	3086.349223	1371.508781	1300.604617	12.89051093	12.61140225	45.40225087	1004.986898	162.6563435	132.9613759
1645449	0	Centroid Connector	25	Tier 1 Centroid Co	0.307301	6340.8341	1948.54466	1874.928038	20.7281027	17.27128512	35.61723441	1432.664782	219.6386207	222.6246344
1658417	W 234TH ST	Other	35	Major Collector	0.06829	2169.34122	148.1443119	143.8309787	1.594779511	1.328959389	1.389594285	103.0344636	19.37368561	16.55147612
2744306	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.32345	0	0	0	0	0	0	0	0	0
2759868	W LOMITA BLVD	Other	40	Principal Arterial	0.114922	40223.05008	4622.513362	4435.876782	49.25065939	36.93289203	100.4530284	3260.59328	510.8874162	658.0370684
106384	W LOMITA BLVD	Other	40	Principal Arterial	0.453256	40374.79324	18300.11729	17508.87139	210.4523259	158.8880042	421.9055688	12504.65373	2181.426306	2801.941579
103347	W LOMITA BLVD	Other	40	Principal Arterial	0.327773	38882.88856	12744.76103	12212.44841	140.4695044	105.3375752	286.5055471	8885.398686	1444.599887	1867.372275
2759870	FIGUEROA ST	Other	40	Principal Arterial	0.29637	9153.918779	2712.946909	2654.652838	16.69369167	11.42236149	30.17801721	1874.31305	360.977952	411.1622663
2759871	FRIGATE AVE	Other	35	Major Collector	0.297408	1340.161521	398.5747576	398.5747576	0	0	0	375.8754379	11.35990155	8.563609968
97009	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.094509	41947.01808	3964.370732	3758.666036	39.2817596	33.03475081	133.3881853	2675.277753	493.0905747	590.2977087
106566	S FIGUEROA ST	Other	40	Minor Arterial	0.175393	547.964617	96.10915807	85.18419733	0.406598683	0.183758895	10.33460316	57.79450583	11.94873354	9.360667583
1645240	0	Centroid Connector	25	Tier 1 Centroid Co	0.290351	3429.373469	995.7220161	969.3093187	9.021902412	7.747915683	9.64287929	725.2052945	124.924989	119.1790359
1645459	0	Centroid Connector	25	Tier 1 Centroid Co	0.285446	8402.706214	2398.518878	2296.071189	31.92258937	26.89586276	43.62923678	1701.8941	305.3246133	288.8524749
1657606	0	Ramp-Other	30	Ramps	0.168191	6506.575923	1094.347511	880.3899671	44.10495955	36.88961728	132.9629672	461.294046	155.1343655	263.9615556
1658415	W 234TH PL	Other	35	Minor Collector	0.433618	0	0	0	0	0	0	0	0	0
2670362	0	Ramp-Other	30	Ramps	0.061713	6506.575923	401.5403199	323.0345621	16.18308571	13.53561696	48.78705515	169.258994	56.92223184	96.85333628
2670363	0	Ramp-Other	30	Ramps	0.137381	4397.21924	604.0943764	459.9236388	6.863392376	6.841233095	130.4661121	340.1652869	60.54241874	59.2159332
2674503	W 234TH ST	Other	30	Major Collector	0.212411	71.33565	15.15247675	15.15247505	1.27447E-06	2.12411E-07	2.12411E-07	0.000375118	5.8413E-05	5.69261E-05
2680639	FIGUEROA ST	Other	40	Minor Arterial	0.23064	11212.63051	2586.081102	2545.191314	15.39508715	11.09873192	14.39596874	1961.767072	288.4097044	288.6334971
2731351	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.191534	0	0	0	0	0	0	0	0	0
2731693	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.407365	0	0	0	0	0	0	0	0	0
91693	0	Ramp-Other	30	Ramps	0.161851	4397.21924	711.6943312	541.8442205	8.085884652	8.05977841	153.7044476	400.7547757	71.32610052	69.7633443
1657608	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.107665	50722.56348	5461.044797	5158.767255	67.47432927	55.20373953	179.5994731	3635.984365	666.8910506	855.8918396
2680635	S FIGUEROA ST	Other	40	Minor Arterial	0.215624	547.964617	118.1543226	104.7234346	0.499862791	0.225908834	12.70511635	71.0511966	14.68949001	11.50778302
97003	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.049963	43196.11401	2158.207444	2067.857191	21.65144951	18.10950439	50.589299	1473.19767	270.9782731	323.6812482

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2670360	0	Ramp-Other	30	Ramps	0.143038	11854.32836	1695.619421	1648.109037	9.362213576	7.087947424	31.06022267	1200.838429	178.9848045	268.2858037
91726	0	Ramp-Other	30	Ramps	0.115158	2149.389888	247.5194407	235.1568956	2.281997414	2.076104814	8.004442915	176.726019	23.74592519	34.68495128
2670361	0	Ramp-Other	30	Ramps	0.115966	9704.938475	1125.442895	1099.373822	5.292270994	3.655779676	17.12102287	795.5964666	121.1968172	182.5805379
2674501	S FIGUEROA ST	Other	40	Minor Arterial	0.033498	3455.757021	115.7609487	112.756935	1.046433537	0.894893576	1.062686566	82.03606466	13.63695463	13.53312778
2674502	W 234TH ST	Other	30	Major Collector	0.064152	3429.448989	220.0060115	210.4775987	2.038718805	1.722420769	5.767273268	154.8147901	25.53287046	25.5537622
2674500	CAROLDALE AVE	Other	35	Minor Collector	0.05101	3429.373469	174.9323407	170.2920546	1.585003124	1.36118415	1.694098772	127.4069043	21.94731097	20.93783944
2731694	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.149615	0	0	0	0	0	0	0	0	0
1645241	0	Centroid Connector	25	Tier 1 Centroid Co	0.267139	2098.00557	560.45911	543.5860772	6.23850802	5.198665455	5.435859242	403.0530291	75.78652781	64.74652057
2674504	W 234TH ST	Other	30	Major Collector	0.221099	71.33565	15.77224088	15.77223911	1.32659E-06	2.21099E-07	2.21099E-07	0.000390461	6.08022E-05	5.92545E-05
2731352	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158546	0	0	0	0	0	0	0	0	0
1658416	MEHDEN AVE	Other	35	Minor Collector	0.049629	2098.00557	104.1219184	100.9872517	1.158988072	0.965806445	1.009872232	74.87906589	14.07959747	12.02858837
103346	E LOMITA BLVD	Other	40	Principal Arterial	0.285637	37128.69398	10605.32876	10070.58108	124.5812671	92.23794517	317.9284714	7115.583143	1257.019566	1693.312966
2759874	N WILMINGTON BLVD	Other	35	Minor Arterial	0.266038	5805.969594	1544.608539	1427.289973	18.45529736	16.22162209	82.64164606	1015.204953	185.1939283	164.3721625
104087	AVALON BLVD	Other	40	Principal Arterial	0.088825	19586.67867	1739.786733	1644.416912	19.93515694	17.1318045	58.30285917	1267.076489	189.3284507	175.2507809
140489	DOLORES ST	Other	35	Major Collector	0.196568	469.795316	92.34672568	87.47485935	1.238191464	1.870072273	1.763602592	63.11600045	6.1283453	4.208662802
140490	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.256589	28525.37408	7319.29721	6901.825774	75.28270199	65.72263308	276.4661005	4975.162396	872.4732135	1034.090693
140491	PANAMA AVE	Other	30	Minor Collector	0.04127	8586.617347	354.3696979	326.0588489	1.667385588	1.033202663	25.61026073	244.8107508	46.79529182	34.45280642
140495	E 231ST ST	Other	30	Minor Collector	0.394053	0.014806	0.005834349	0.005508861	0.000128855	9.93014E-05	9.73311E-05	0.00441891	0.000610388	0.000479168
140502	S MAIN ST	Other	40	Principal Arterial	0.372401	7083.428981	2637.876036	2512.283977	20.740095	15.42558305	89.42638082	1871.004681	311.1116471	257.1770535
153311	E 238TH PL	Other	35	Minor Collector	0.285245	0.005999	0.001711185	0.00107081	3.39442E-05	1.88262E-05	0.000587605	0	0.000626683	0.000444126
1645246	0	Centroid Connector	25	Tier 1 Centroid Co	0.303456	9283.260658	2817.061146	2726.285272	16.66801632	10.70134216	63.40651549	1938.233206	384.2440828	403.8079837
1645471	0	Centroid Connector	25	Tier 1 Centroid Co	0.468619	7491.241258	3510.537987	3270.794686	45.77287162	45.31669164	148.6537376	2425.885832	388.1562447	456.7526095
2731697	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.264273	0	0	0	0	0	0	0	0	0
2731698	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.252453	0	0	0	0	0	0	0	0	0
2731699	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.222021	0	0	0	0	0	0	0	0	0
2731703	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.229697	0	0	0	0	0	0	0	0	0
140487	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.079885	29770.72084	2378.234034	2254.507287	23.79753492	20.43152588	79.49768676	1632.117178	284.5245653	331.6078854
1645473	0	Centroid Connector	25	Tier 1 Centroid Co	0.356756	8291.586355	2958.073182	2825.621479	31.18833231	30.25369259	71.00967748	2140.403664	330.5405509	354.6772656
2744305	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.319914	0	0	0	0	0	0	0	0	0
103323	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.186038	35975.20971	6692.756063	6342.472452	69.94111019	61.11103604	219.2314648	4625.195314	784.1631322	931.8117399
2680669	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.129753	29770.72084	3862.840341	3661.877499	38.65308316	33.18585188	129.1239075	2650.96201	462.1382728	538.6132309
2680667	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.012607	29770.72084	375.3194777	355.7936204	3.755592698	3.224388143	12.54587641	257.5715248	44.90206165	52.33248558
1658420	CATSKILL AVE	Other	30	Minor Collector	0.311341	71.333333	22.20899123	22.20899123	0	0	0	0	0	0
1658422	0	Centroid Connector	25	Tier 1 Centroid Co	0.124326	8586.693849	1067.549299	982.261888	5.023059458	3.112551389	77.15180062	737.4991944	140.9724216	103.7902721
2674506	E 236TH ST	Other	30	Minor Collector	0.086907	71.403837	6.205493262	6.205063942	2.82448E-05	1.19932E-05	0.000389083	0.004240366	0.000831961	0.000625557
2680671	DOLORES ST	Other	35	Major Collector	0.166793	398.391479	66.44890996	62.31582996	1.050583072	1.586781536	1.495715394	53.54741053	5.198461449	3.569958145
2751963	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.137632	0	0	0	0	0	0	0	0	0
2674505	DOLORES ST	Other	35	Major Collector	0.063478	398.391479	25.2890943	23.7161287	0.399830402	0.603896556	0.569238648	20.37904783	1.978427967	1.35865296
2731702	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.045301	0	0	0	0	0	0	0	0	0
140493	PANAMA AVE	Other	30	Minor Collector	0.156023	8586.623346	1339.710734	1232.680009	6.30364109	3.906076995	96.82100723	925.5175133	176.9119446	130.2505511
2680675	E 236TH ST	Other	30	Minor Collector	0.098392	0.070503	0.006936931	0.006450875	3.19774E-05	1.35781E-05	0.000440501	0.004800742	0.000941907	0.000708226
2731700	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13903	0	0	0	0	0	0	0	0	0
2731701	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.069781	0	0	0	0	0	0	0	0	0
1658421	E 236TH ST	Other	30	Minor Collector	0.068062	0.070503	0.004798575	0.004462349	2.21202E-05	9.39256E-06	0.000304714	0.003320881	0.000651558	0.00048991
1645242	0	Centroid Connector	25	Tier 1 Centroid Co	0.264567	3072.2729	812.8220243	795.1739516	4.87947982	3.337968554	9.430624321	603.6633885	106.2635274	85.24703577
104088	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.209739	37811.13337	7930.469301	7465.272481	99.1977862	86.2434664	279.755568	5479.818165	905.6529873	1079.801328
2744304	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.277607	0	0	0	0	0	0	0	0	0
2680677	AVALON BLVD	Other	35	Principal Arterial	0.262291	9884.304938	2592.564226	2402.529503	15.66244897	12.21528032	162.156994	1766.621777	315.2113452	299.8879616
2744303	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.12804	0	0	0	0	0	0	0	0	0
2680679	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.006677	37811.13337	252.4649375	237.6554878	3.157942102	2.745543867	8.905963734	174.4489384	28.83128553	34.37526386
2680682	AVALON BLVD	Other	40	Principal Arterial	0.204546	19586.67267	4006.375548	3786.75861	45.90660794	39.45106541	134.2592649	2917.820743	435.9846592	403.5667652
153310	AVALON BLVD	Other	40	Principal Arterial	0.179513	19586.67267	3516.062371	3323.322863	40.28840902	34.62291663	117.8281825	2560.728418	382.6274487	354.1769613
2680684	E 231ST ST	Other	30	Minor Collector	0.046755	0.014806	0.000692255	0.000653635	1.52889E-05	1.17823E-05	1.15485E-05	0.000524311	7.24235E-05	5.68541E-05
104414	WILMINGTON AVE	Other	45	Minor Arterial	0.2044	39069.89004	7985.885523	7588.381985	92.42768546	68.20184549	236.8740075	5351.433537	950.1953116	1286.753135
104510	E LOMITA BLVD	Other	25	Principal Arterial	1.176717	2545.77099	2995.652002	2374.133663	34.21317504	28.470436	558.8347281	1806.861948	281.2326613	286.0390525
105791	ALAMEDA ST	Other	45	Principal Arterial	0.653524	32376.20403	21158.62636	11395.8715	387.1511231	288.6420464	9086.961696	8491.364994	1329.545833	1565.811335
1645480	0	Centroid Connector	25	Tier 1 Centroid Co	0.55505	18597.95928	10322.7973	7810.659333	536.2512752	465.0288755	1510.857813	6189.344938	784.0414141	837.2729804
2680748	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.400794	22173.24947	8886.905348	8596.687281	56.83629815	44.40876877	188.9729999	5833.062438	1182.816401	1580.808442
2731318	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.307885	0	0	0	0	0	0	0	0	0
2731319	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.867158	0	0	0	0	0	0	0	0	0
2680726	EUBANK AVE	Other	35	Major Collector	0.261465	974.717116	254.8544107	242.6208234	1.773021619	1.4875021	8.973063594	179.5180822	32.19390725	30.90883397
104413	E LOMITA BLVD	Other	35	Principal Arterial	0.096065	3520.488106	338.1956899	282.9613328	3.444527294	2.870797622	48.9190322	213.465706	34.78769567	34.70793108
1645484	0	Centroid Connector	25	Tier 1 Centroid Co	0.110303	4078.672359	449.8897972	442.7979986	1.581700347	0.84010835	4.669989883	300.5092484	66.84061478	75.44813542
1645487	0	Centroid Connector	25	Tier 1 Centroid Co	0.640365	20326.89797	13016.63402	11321.59626	459.9770515	382.0670611	852.993644	8976.545436	1236.651241	1108.399584
2680742	WILMINGTON AVE	Other	45	Minor Arterial	0.447335	39069.89004	17477.32926	16607.38187	202.2805219	149.2616074	518.4052551	11711.75891	2079.528472	2816.09449
2680746	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.548416	22173.24947	12160.16478	11763.05247	77.77046384	60.76557866	258.5762679	7981.518611	1618.475924	2163.057937

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
104610	WILMINGTON AVE	Other	45	Minor Arterial	0.363638	45463.10054	16532.11095	15057.48205	313.0574029	231.3287308	930.2427668	10767.75587	1811.750464	2477.975715
2680756	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.407353	22173.24947	9032.339691	8737.372201	57.76642504	45.13551896	192.0655459	5928.520595	1202.17321	1606.678397
2731320	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.651086	0	0	0	0	0	0	0	0	0
2731317	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.33313	0	0	0	0	0	0	0	0	0
98172	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.200457	28997.23947	5812.699633	5458.780964	73.51576295	69.79007396	210.6128316	3812.969277	723.8454828	921.9662052
2676237	SEPULVEDA-ALAMEDA CONNECTOR	0	30	Minor Collector	0.205237	6824.133872	1400.564763	1186.81814	46.16505068	48.71401397	118.8675584	916.9392126	135.4170633	134.4618643
2762158	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.063151	28997.23947	1831.20467	1719.707851	23.16004902	21.98632605	66.35044387	1201.219328	228.0367664	290.4517568
103410	S MAIN ST	Other	40	Minor Arterial	0.251568	9485.146064	2386.159225	2040.318612	72.98933073	72.51147605	200.3398064	1514.78497	239.5870056	250.9786841
103422	E GARDENA BLVD	Other	40	Minor Arterial	0.64174	1513.575235	971.3217713	928.579097	14.06636965	16.30087624	12.37542839	694.9016396	127.7239868	105.95347
103729	S BROADWAY	Other	40	Principal Arterial	0.250879	7605.355967	1908.0241	1806.859864	31.9771841	29.62969701	39.55735435	1368.626501	225.7354879	212.4978755
105047	S CENTRAL AVE	Other	40	Principal Arterial	0.198006	16112.94289	3190.459369	2989.429282	52.06353349	44.38041399	104.5861397	2069.917239	402.5804982	487.1646419
1646199	0	Centroid Connector	25	Tier 1 Centroid Co	0.655544	10144.90159	6650.429367	6158.500866	140.7038356	131.2091828	220.0154826	4530.278929	788.5688129	839.653124
1646201	0	Centroid Connector	25	Tier 1 Centroid Co	0.312645	5238.516956	1637.796134	1568.122587	19.9164038	17.28136358	32.47577959	1144.788098	228.0936842	195.2408041
2676599	AVALON BLVD	Other	40	Principal Arterial	0.222959	35515.80586	7918.568559	7519.243353	100.7167215	90.22941929	208.3790649	5513.044786	910.226995	1030.644584
2732668	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.391113	0	0	0	0	0	0	0	0	0
2744552	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.443655	0	0	0	0	0	0	0	0	0
12798	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.245106	20742.37981	5084.081745	4425.519945	89.91214991	61.76783998	506.8818105	2857.379735	583.3162097	984.824
13455	SAN DIEGO FWY	Interstate	65	Freeways	0.897504	118402.6509	106266.8528	88897.60566	3089.613431	2616.650123	11662.98358	51323.50869	13078.62802	24468.54383
17813	GARDENA FWY	State Route-Limited Access	65	Freeways	0.37221	100922.8826	37564.50613	32395.20721	773.5202197	638.39141	3757.387294	22564.12345	3657.583366	6173.500397
17893	SAN DIEGO FWY	Interstate	65	Freeways	0.246926	118290.8415	29209.08434	24337.33874	885.8915384	756.1752063	3229.678854	14288.31602	3438.849971	6607.868108
18023	GARDENA FWY	State Route-Limited Access	65	Freeways	0.556235	103264.6883	57439.43388	48632.13175	1219.378558	1016.178666	6571.744905	33662.31682	5608.280804	9358.938368
18057	SAN DIEGO FWY	Interstate	65	Freeways	0.927695	123175.2624	114269.0751	96064.04695	3320.149069	2842.8616	12042.01744	57527.34393	13272.99666	25235.87551
93128	0	Ramp-Other	30	Ramps	0.394618	4778.44254	1885.659438	1686.153604	37.37590489	34.11631049	128.0136191	1299.783026	161.1862503	225.1843278
93163	0	Ramp-Other	30	Ramps	0.325105	4592.638868	1493.089859	1281.171522	38.74172056	37.18627195	135.9903448	989.5484259	122.9418638	168.6812322
98384	E ARTESIA BLVD	Other	40	Minor Arterial	0.790496	1122.003298	886.9391191	872.6534493	4.429516669	3.929382497	5.926770637	131.0561777	257.5531373	484.0441351
98457	E ARTESIA BLVD	Other	45	Minor Arterial	0.692127	3536.93423	2448.007678	2386.335736	21.33225114	18.75510241	21.58458818	952.3798574	594.5416617	839.4142176
104013	E UNIVERSITY DR	Other	45	Minor Arterial	0.629985	1574.710951	992.0442785	941.9443648	14.61826329	13.73218372	21.74946669	649.6496932	117.4588612	129.8968812
104057	E WALNUT ST	Other	40	Minor Arterial	0.754678	2669.881259	2014.900649	1903.982159	34.06902289	32.34179361	44.50767314	1153.033556	315.4174218	435.5311814
104058	AVALON BLVD	Other	40	Principal Arterial	0.124587	16666.5969	2076.441308	1969.219075	26.91850593	22.89069132	57.41303588	1436.656377	226.0482764	255.4752803
104081	E DEL AMO BLVD	Other	45	Principal Arterial	0.353863	31811.74376	11256.99908	10726.66537	126.6213125	116.8093989	286.9030038	7008.893085	1514.865555	2080.234218
104143	E 223RD ST	Other	45	Principal Arterial	0.247524	27184.83073	6728.89804	6423.362936	56.61685511	41.02718345	207.8910658	4262.674075	857.1866531	1265.87856
104163	E 213TH ST	Other	30	Major Collector	0.384216	762.874447	293.1085685	261.5777088	7.254088755	7.376051977	16.90071897	176.7660503	32.01758799	25.38666301
104637	S MAIN ST	Other	45	Principal Arterial	0.446708	24538.93743	10961.73966	10136.13624	145.7850369	131.5043544	548.3140302	7520.33523	1241.746034	1367.801065
105022	S CENTRAL AVE	Other	40	Principal Arterial	0.456614	6198.100966	2830.139674	2360.553304	94.04699383	94.2133963	281.3259803	1850.23423	265.3161898	245.002885
140580	E DOMINGUEZ ST	Other	35	Major Collector	0.241284	7646.778699	1845.045352	1718.0988	43.05369898	42.1587122	41.73413995	1371.003084	166.3408202	180.7548967
140624	LYSANDER DR	Other	30	Minor Collector	0.146753	71.333333	10.46838062	10.46838062	0	0	0	0	0	0
146823	SUDBURY CT	Other	30	Minor Collector	0.299862	71.333333	21.3901559	21.3901559	0	0	0	0	0	0
153299	E TURMONT ST	Other	30	Major Collector	0.152875	348.255644	53.23958158	53.23957944	2.14025E-06	0	0	37.77796643	2.588574588	1.967954983
1646442	0	Centroid Connector	25	Tier 1 Centroid Co	0.03286	16906.03434	555.5322883	520.9202789	7.220221104	7.825288976	19.56649932	378.7317957	68.69916699	73.48931611
1646443	0	Centroid Connector	25	Tier 1 Centroid Co	0.552552	4994.840996	2759.909382	2658.051425	15.41342312	8.945957228	77.49857694	1899.884499	378.8551084	379.3118164
1646444	0	Centroid Connector	25	Tier 1 Centroid Co	0.388738	10232.45515	3977.744152	3936.550477	18.21201727	10.91269901	12.06895859	2875.003494	551.7561087	509.7908744
1646445	0	Centroid Connector	25	Tier 1 Centroid Co	0.555034	4465.555022	2478.534866	2421.879932	14.37174624	8.929213821	33.35397398	1763.923725	350.8129912	307.1432174
1646446	0	Centroid Connector	25	Tier 1 Centroid Co	0.643117	7088.764452	4558.904928	4075.067032	108.864627	123.3141637	251.6591056	3114.294566	466.0019666	494.7705001
1646447	0	Centroid Connector	25	Tier 1 Centroid Co	0.591656	7205.461775	4263.154692	4217.340099	20.19617756	11.18422779	14.43418769	2964.793302	599.6597449	652.8870528
1646448	0	Centroid Connector	25	Tier 1 Centroid Co	0.519087	13504.77951	7010.15548	7010.15548	0	0	0	5729.108237	646.391082	634.6561611
2666005	I 405 HOV	HOV-Interstate	65	Freeways	2.026125	15636.17594	31680.84698	31680.84698	0	0	0	28334.31339	235.617744	3029.87085
2666376	SR 91 HOV	HOV-Other	65	HOV	2.060552	6938.534916	14297.212	14297.212	0	0	0	0	5394.398054	8902.813945
2671597	I 405 HOV	HOV-Interstate	65	Freeways	0.639736	21764.91086	13923.79702	13923.79702	0	0	0	12931.68183	103.9739724	865.5372109
2671599	I 405 HOV	HOV-Interstate	65	Freeways	1.100335	13761.5886	15142.35759	15142.35759	0	0	0	13418.73043	119.8109569	1582.543062
2674510	E CARSON ST	Other	40	Minor Arterial	0.149547	24687.70781	3691.97264	3493.022106	46.31016162	45.58088086	107.0594917	2597.954218	382.7063443	480.3584848
2683242	S FIGUEROA ST	Other	40	Minor Arterial	0.504445	2266.456208	1143.302502	1137.972484	2.211208931	1.581160152	1.537649249	996.725332	61.35451287	51.98001444
2683258	E 220TH ST	Other	25	Major Collector	0.143918	0	0	0	0	0	0	0	0	0
2683285	BRENNER DR	Other	25	Minor Collector	0.196496	38.666667	7.597845399	7.597845399	0	0	0	0	0	0
2683293	E VICTORIA ST	Other	40	Minor Arterial	0.270733	6576.137347	1780.377392	1335.198858	90.25895553	83.57887785	271.3407008	881.8238929	177.216964	205.7674209
2683311	GALWAY AVE	Other	30	Major Collector	0.309879	71.333333	22.1047019	22.1047019	0	0	0	0	0	0
2683335	S WILMINGTON AVE	Other	45	Minor Arterial	0.376928	9822.221105	3702.270157	2692.37103	79.80134394	79.71704097	850.3807422	2092.713172	275.777093	273.8749832
2731329	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.488001	0	0	0	0	0	0	0	0	0
2732669	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.507975	0	0	0	0	0	0	0	0	0
2732883	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.286889	0	0	0	0	0	0	0	0	0
2732895	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.317617	0	0	0	0	0	0	0	0	0
2732896	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158072	0	0	0	0	0	0	0	0	0
2732901	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.620313	0	0	0	0	0	0	0	0	0
2732904	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.635912	0	0	0	0	0	0	0	0	0
2732908	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.477931	0	0	0	0	0	0	0	0	0
2744649	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.278984	0	0	0	0	0	0	0	0	0
2744651	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24717	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2759878	E WATSON CENTER RD	Other	30	Major Collector	0.262043	1132.892547	296.8665617	296.0605848	0.730653449	0.009141632	0.066181842	212.0722342	37.84026177	46.14808928
2761703	SAN DIEGO FWY	Interstate	65	Freeways	0.377174	113010.5029	42624.6234	35254.20028	1306.812734	1111.492694	4952.117694	20072.60487	5234.545468	9947.049942
2768556	I 405 HOV	HOV-Interstate	65	Freeways	1.430456	20589.58936	29452.50164	29452.50164	0	0	0	27561.7999	199.6326012	1683.440035
103293	S MAIN ST	Other	35	Principal Arterial	0.258189	8372.257559	2161.624807	2101.690476	19.44795681	15.3515193	25.13485432	1588.33217	259.699376	233.4341258
103575	E 220TH ST	Other	30	Major Collector	0.269547	463.153448	124.8416224	113.4330408	1.678307171	1.800909276	7.929365179	88.36058267	13.27094492	11.80151296
103595	DOLORES ST	Other	30	Major Collector	0.257506	0	0	0	0	0	0	0	0	0
103597	E CARSON ST	Other	35	Minor Arterial	0.203562	26305.24201	5354.747674	5089.857098	64.69417439	59.57923679	140.6171648	3752.926829	578.2803169	691.1352222
103599	E 213TH ST	Other	30	Major Collector	0.198949	1131.324369	225.0758519	222.1385118	1.066558228	0.721047678	1.149734229	176.9911375	15.75493166	15.20074709
103852	GRACE AVE	Other	30	Major Collector	0.257355	0.139808	0.035980288	0.03353207	0.00035901	0.000269451	0.001819757	0.025624065	0.003835104	0.0040729
104105	S MAIN ST	Other	35	Principal Arterial	0.193151	17538.20105	3387.521071	3261.91356	38.12963412	33.07287449	54.40500171	2498.761262	416.3902309	345.4100109
104156	AVALON BLVD	Other	35	Principal Arterial	0.156938	25039.8449	3929.703179	3711.239198	48.19172788	40.65355003	129.6187027	2695.686559	441.1596845	508.5313071
105905	MONETA AVE	Other	30	Major Collector	0.18893	0	0	0	0	0	0	0	0	0
106732	S FIGUEROA ST	Other	40	Minor Arterial	0.187953	5636.893747	1059.47109	1047.892628	3.820046614	2.890384087	4.868031568	833.4814622	107.256398	87.23175002
140483	W 228TH ST	Other	35	Major Collector	0.353112	1055.75756	372.8006635	366.1522835	1.59375265	0.662794402	4.391832972	264.2287819	54.53359184	47.38991044
1643165	0	Ramp-Other	35	Ramps	0.813291	0	0	0	0	0	0	0	0	0
1646449	0	Centroid Connector	25	Tier 1 Centroid Co	0.323456	1416.039029	458.0263202	435.6414655	1.709074872	0.776471977	19.89930779	320.0166471	65.93497598	49.68984216
1646450	0	Centroid Connector	25	Tier 1 Centroid Co	0.328975	3588.622555	1180.567105	1151.086053	4.637977715	2.136552153	22.70652199	838.6621305	154.9415459	157.4823768
1646451	0	Centroid Connector	25	Tier 1 Centroid Co	0.381001	5654.222472	2154.264416	2088.308279	12.78776135	8.030650305	45.13772568	1619.245908	268.6858992	200.3764715
1646452	0	Centroid Connector	25	Tier 1 Centroid Co	0.329884	11742.77927	3873.754995	3816.605714	18.03616095	14.93795244	24.17516792	2863.039555	448.4241445	505.1420143
1646453	0	Centroid Connector	25	Tier 1 Centroid Co	0.474068	9220.428724	4371.110204	4197.061771	36.72530747	26.69500422	110.6281221	2817.762633	667.9612834	711.3378545
1646454	0	Centroid Connector	25	Tier 1 Centroid Co	0.687316	2536.314255	1743.249368	1743.248257	0.000301044	0.00016633	0.000644015	1743.18573	0.028171021	0.034356865
2662654	W DEL AMO BLVD	Other	40	Principal Arterial	0.486215	28354.99976	13786.62621	13127.23628	171.6573918	145.8830953	341.8494372	8822.324789	1740.59023	2564.321264
2674509	CIVIC CENTER DR	Other	30	Minor Collector	0.137706	71.333333	9.823027954	9.823027954	0	0	0	0	0	0
2683232	W 223RD ST	Other	40	Principal Arterial	0.058491	23271.34573	1361.164283	1298.554742	14.19199034	11.06686493	37.35068526	873.152062	170.9009731	250.3293493
2732916	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.31518	0	0	0	0	0	0	0	0	0
2732917	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.329491	0	0	0	0	0	0	0	0	0
2732918	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.236946	0	0	0	0	0	0	0	0	0
2732923	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.156588	0	0	0	0	0	0	0	0	0
97016	S FIGUEROA ST	Other	40	Minor Arterial	0.24703	15187.48493	3751.764403	3570.368588	31.48512219	24.20420468	125.7064881	2340.222256	507.4044324	696.5567199
97018	W 220TH ST	Other	30	Major Collector	0.249754	463.153448	115.6744263	105.1035837	1.555068056	1.668667414	7.347107076	81.87221139	12.29645137	10.93492069
105915	W CARSON ST	Other	35	Minor Arterial	0.250322	22237.33598	5566.494418	5278.947286	59.81441161	51.90930593	175.8234145	3820.377953	616.789904	794.4685712
105916	MONETA AVE	Other	30	Major Collector	0.25253	71.333333	18.01380658	18.01380658	0	0	0	0	0	0
105943	W 223RD ST	Other	40	Principal Arterial	0.247532	23271.34573	5760.402751	5495.441222	60.0600392	46.83461063	158.0668791	3695.150984	723.2473318	1059.385623
140479	W 228TH ST	Other	35	Minor Arterial	0.132714	2891.206449	383.7035727	377.4954887	1.732662756	0.745856794	3.729564395	268.6017199	54.83170735	44.59512975
1646456	0	Centroid Connector	25	Tier 1 Centroid Co	0.391878	4873.81681	1909.941584	1857.640542	7.623558951	3.66250472	41.0149782	1306.728729	277.5453488	273.3664633
2732924	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.264009	0	0	0	0	0	0	0	0	0
2751967	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.15682	0	0	0	0	0	0	0	0	0
2751968	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.199586	0	0	0	0	0	0	0	0	0
140478	W 228TH ST	Other	35	Major Collector	0.250605	6214.130882	1557.29227	1484.122249	16.96484932	13.40627461	42.79889679	1026.922373	232.1813953	225.0184806
140482	S FIGUEROA ST	Other	40	Minor Arterial	0.214418	5360.57513	1149.403798	1084.72644	15.17979779	13.22506509	36.27249526	739.5467712	159.4431093	178.3034019
106779	W 223RD ST	Other	40	Principal Arterial	0.106651	36073.87132	3847.31445	3683.505798	35.34007224	27.03282193	101.4357577	2502.828814	481.4423737	699.2346107
2683216	S FIGUEROA ST	Other	40	Minor Arterial	0.1721	5360.57513	922.5549799	870.642485	12.18388008	10.61493766	29.11367719	593.5882217	127.9750726	143.1130571
127351	S FIGUEROA ST	Other	40	Minor Arterial	0.244286	4938.496594	1206.405579	1117.484448	12.2071412	10.0908564	66.62313338	831.8290546	146.1392631	113.6218143
127355	0	Ramp-Other	30	Ramps	0.243181	12095.05937	2941.288634	2745.744184	31.35417138	24.92501631	139.2652623	1727.122859	401.1698764	617.451448
2670355	0	Ramp-Other	30	Ramps	0.178621	2014.236587	359.7849534	315.708229	3.469203319	3.158568361	37.44895277	243.1053103	37.82667223	34.77624639
106746	W CARSON ST	Other	35	Minor Arterial	0.106256	24359.60169	2588.353837	2474.298953	26.84042722	23.1561309	64.05832595	1818.905474	276.3287504	353.1028454
103295	W 223RD ST	Other	40	Principal Arterial	0.268112	23271.34573	6239.327046	5952.336413	65.05347684	50.72847602	171.2086804	4002.368666	783.3786687	1147.463755
140477	MONETA AVE	Other	30	Major Collector	0.191398	71.333333	13.65305727	13.65305727	0	0	0	0	0	0
1658418	0	Centroid Connector	25	Tier 1 Centroid Co	0.174151	2357.032271	410.479527	394.5396285	1.862388209	0.829052627	13.24845774	288.0187461	60.95338534	45.56749697
2732921	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.239263	0	0	0	0	0	0	0	0	0
2683222	W 228TH ST	Other	35	Minor Arterial	0.044949	3484.123164	156.6078521	151.6474087	0.683564075	0.2983511	3.97852818	107.9733846	22.6740812	17.79358104
140507	W 228TH ST	Other	35	Minor Arterial	0.06797	3484.123164	236.8158515	229.3148762	1.033657038	0.45115407	6.016164106	163.2728415	34.28679835	26.90670989
1646457	0	Centroid Connector	25	Tier 1 Centroid Co	0.229892	0	0	0	0	0	0	0	0	0
2683226	MONETA AVE	Other	30	Major Collector	0.104073	71.333333	7.423873965	7.423873965	0	0	0	0	0	0
2683228	MONETA AVE	Other	30	Major Collector	0.080226	71.333333	5.722787973	5.722787973	0	0	0	0	0	0
103576	S MAIN ST	Other	35	Principal Arterial	0.257449	8372.257559	2155.429336	2095.666785	19.39221669	15.30752004	25.06281488	1583.779823	258.955047	232.7650762
103577	W 220TH ST	Other	30	Major Collector	0.268797	463.153448	124.4942574	113.1174195	1.673637372	1.795898343	7.907302148	88.11472411	13.23401923	11.76867588
104106	W CARSON ST	Other	35	Minor Arterial	0.215003	22308.66932	4796.430829	4549.45495	51.37494083	44.58520028	151.0157381	3281.344512	529.7643824	682.3736077
105914	MONETA AVE	Other	30	Major Collector	0.245776	71.333333	17.53202125	17.53202125	0	0	0	0	0	0
2751966	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.138492	0	0	0	0	0	0	0	0	0
2732925	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.164253	0	0	0	0	0	0	0	0	0
2751965	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.132511	0	0	0	0	0	0	0	0	0
91740	0	Ramp-Other	30	Ramps	0.123884	4972.428823	616.0043723	460.5815449	7.066839887	6.822664028	141.5333235	332.2716591	62.57645704	65.73342894
104605	W TORRANCE BLVD	Other	40	Principal Arterial	0.153397	8141.976311	1248.95474	1198.789047	11.69408837	10.57276827	27.89883655	753.944893	187.1336119	245.6944437
104638	W DEL AMO BLVD	Other	40	Principal Arterial	0.243042	37262.66593	9056.392853	8424.11543	129.7682621	114.3882586	388.1209028	5949.609062	1048.705289	1425.801079
105906	W 214TH ST	Other	30	Major Collector	0.24894	717.553405	178.6277446	178.6266224	0.000146626	7.045E-05	0.000905146	178.5313162	0.049774308	0.045532122

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
1646459	0	Centroid Connector	25	Tier 1 Centroid Co	0.130385	16326.75803	2128.764346	2051.118024	22.04712496	19.51234981	36.08684733	1537.175146	267.1165037	246.8263738
1646460	0	Centroid Connector	25	Tier 1 Centroid Co	0.258815	4416.027499	1142.934157	1095.123904	18.50019248	17.276136	12.03392436	857.6271276	114.9121945	122.5845825
2683238	S FIGUEROA ST	Other	40	Minor Arterial	0.104925	4919.340342	516.1617854	509.6985672	2.132484053	1.613530774	2.717203378	390.0434329	59.85504071	48.6780437
2683244	S MAIN ST	Other	45	Principal Arterial	0.192289	13732.85635	2640.677214	2546.078074	32.53652618	29.56921732	32.4933971	1979.355016	294.1937018	257.4667176
2732906	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.087308	0	0	0	0	0	0	0	0	0
106652	S FIGUEROA ST	Other	40	Minor Arterial	0.431406	4919.340342	2122.23294	2095.658995	8.767847658	6.634137309	11.1719594	1603.689085	246.0979146	200.1429604
127349	S FIGUEROA ST	Other	40	Minor Arterial	0.152393	18252.97936	2781.626284	2567.214917	23.53123065	20.46620754	170.413929	1840.16287	322.6114659	400.2243743
1656340	0	Ramp-Other	30	Ramps	0.09541	13031.78029	1243.362158	1195.922815	9.615420754	8.279849153	29.54407287	839.8595275	146.4529092	209.6103782
97055	S FIGUEROA ST	Other	40	Minor Arterial	0.148651	28422.1381	4224.979251	4072.233409	33.32088051	28.31025711	91.11470465	2902.026812	500.4246693	665.6692507
106653	W TORRANCE BLVD	Other	40	Principal Arterial	0.071978	38341.30557	2759.730492	2663.867619	23.65351833	20.70548925	51.50386539	1878.400527	350.5409585	434.926134
2670352	0	Ramp-Other	30	Ramps	0.125609	4972.428823	624.581812	466.994828	7.165240801	6.917664959	143.5040782	336.8983147	63.44779142	66.64872199
2670349	0	Ramp-Other	30	Ramps	0.179076	13031.78029	2333.679088	2244.639702	18.04728107	15.54053314	55.45157105	1576.340894	274.8789558	393.4198521
97091	S FIGUEROA ST	Other	40	Minor Arterial	0.048036	2266.456208	108.8714904	108.363937	0.210563356	0.15056668	0.146423335	94.91361407	5.842510839	4.949820047
106443	W DEL AMO BLVD	Other	40	Principal Arterial	0.093106	27841.42057	2592.203303	2341.870667	46.06486917	41.87161775	162.3961495	1701.807029	267.3275127	370.1601927
104425	W 214TH ST	Other	30	Major Collector	0.171691	717.553405	123.1974617	123.1966877	0.000101126	4.85886E-05	0.000624268	123.1309561	0.034328757	0.031402971
104528	S MAIN ST	Other	45	Principal Arterial	0.278411	13732.85635	3823.378269	3686.410261	47.1089183	42.81261728	47.04647266	2865.86445	425.9565691	372.780379
2732915	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.28865	0	0	0	0	0	0	0	0	0
2732922	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.043919	0	0	0	0	0	0	0	0	0
104424	S MAIN ST	Other	35	Principal Arterial	0.071756	18255.75445	1309.959917	1263.296141	14.16528099	12.28666227	20.21183262	979.7559958	154.7041879	128.3336651
104604	S MAIN ST	Other	45	Principal Arterial	0.282499	11711.25394	3308.417526	3141.112052	46.97114009	43.64076107	76.69357262	2028.284352	516.5309842	592.3417302
1646462	0	Centroid Connector	25	Tier 1 Centroid Co	0.20229	5430.381319	1098.511837	1080.342868	6.322864034	5.892019509	5.954085925	842.9631726	144.6108369	92.76885848
1646463	0	Centroid Connector	25	Tier 1 Centroid Co	0.311723	10971.25738	3419.993265	3263.665266	46.11912202	41.28052551	68.92835154	2463.257733	372.3313702	428.0761628
2683246	W TORRANCE BLVD	Other	40	Principal Arterial	0.171515	8141.976311	1396.471067	1340.380212	13.07529852	11.82153725	31.19401912	842.9947021	209.2363048	274.7138634
2732907	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.161046	0	0	0	0	0	0	0	0	0
2732909	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.333543	0	0	0	0	0	0	0	0	0
103585	DOLORES ST	Other	30	Major Collector	0.249084	6386.876975	1590.868864	1546.329563	14.83734529	13.670185	16.03177107	1192.90818	205.0386342	148.3827493
103845	E 223RD ST	Other	40	Principal Arterial	0.250284	26249.23167	6569.7627	6298.448839	70.30440593	56.97469781	144.0347573	4255.26375	800.8552012	1141.465435
103851	E 220TH ST	Other	30	Major Collector	0.251544	941.114849	236.7317936	223.5025971	3.453810554	3.178496149	6.596889811	154.6534072	36.44191505	32.40727481
103853	E CARSON ST	Other	35	Minor Arterial	0.24918	37106.42745	9246.179593	8713.250532	119.2652783	113.9467627	299.7170201	6423.25038	1013.960365	1193.395088
104142	AVALON BLVD	Other	35	Principal Arterial	0.251226	25696.88787	6455.726353	6204.65914	63.21452946	50.69857877	137.1541041	4649.042366	744.1690836	730.2179499
140501	E 228TH ST	Other	30	Major Collector	0.250975	160.351139	40.24412711	39.90272205	0.162842368	0.118240095	0.060322594	10.59830331	5.203399923	6.198135571
1646464	0	Centroid Connector	25	Tier 1 Centroid Co	0.390657	2618.732184	1023.026059	942.9075398	1.130155465	0.424294912	78.56406864	628.8032187	181.6764141	132.4279066
1646465	0	Centroid Connector	25	Tier 1 Centroid Co	0.399277	4828.475369	1927.89916	1818.856997	4.183288215	1.640591262	103.2182835	1262.069129	258.4196351	298.3682333
2683252	GRACE AVE	Other	30	Major Collector	0.153982	2559.209292	394.0721652	376.244861	4.330815198	4.757102816	8.739386224	295.6970578	42.75098258	37.79682084
2732920	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13419	0	0	0	0	0	0	0	0	0
2732926	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.279601	0	0	0	0	0	0	0	0	0
103586	E 223RD ST	Other	40	Principal Arterial	0.054943	23618.71029	1297.682799	1244.484285	13.88811958	10.8098391	28.5005553	828.6186026	160.5517908	237.0911301
130630	S MAIN ST	Other	35	Principal Arterial	0.375203	7648.742429	2869.831106	2782.108727	31.22308645	24.74470801	31.75458364	2070.148195	329.3111482	282.3451156
140486	DOLORES ST	Other	35	Major Collector	0.368043	2046.424625	753.1722583	740.7985024	3.467407816	4.414313999	4.492034007	568.0818028	85.59454229	60.86842351
140488	E 228TH ST	Other	35	Major Collector	0.058188	3232.638845	188.1007891	184.1401276	1.110950491	0.761570305	2.088140678	135.2255955	24.57773931	20.18604877
140498	CATSKILL AVE	Other	30	Minor Collector	0.361407	0	0	0	0	0	0	0	0	0
140500	GRACE AVE	Other	30	Major Collector	0.35394	71.333333	25.24771988	25.24771988	0	0	0	0	0	0
1646466	0	Centroid Connector	25	Tier 1 Centroid Co	0.378438	2641.149697	999.511409	933.301195	2.001761803	0.707707443	63.50074481	648.0480231	156.5170912	128.736081
1646467	0	Centroid Connector	25	Tier 1 Centroid Co	0.232173	4012.058629	931.4916881	887.3448375	1.891222286	0.73419557	41.52143275	602.8012355	142.5142177	142.0293845
2731349	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.182384	0	0	0	0	0	0	0	0	0
2732928	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.206455	0	0	0	0	0	0	0	0	0
2732929	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.199047	0	0	0	0	0	0	0	0	0
140485	E 228TH ST	Other	35	Major Collector	0.182229	3557.760168	648.3270777	637.5287675	2.914654816	1.933518208	5.950137117	477.5222066	85.65818507	74.34837598
103294	E 223RD ST	Other	40	Principal Arterial	0.210607	30653.93202	6455.932661	6183.25622	65.27850503	51.04505026	156.3528854	4228.515965	810.5697283	1089.342504
140496	E 228TH ST	Other	35	Major Collector	0.192749	89.017806	17.15809309	16.89589373	0.125063068	0.090808487	0.0463278	8.139505387	3.996215288	4.760173058
2731348	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.188376	0	0	0	0	0	0	0	0	0
140499	E 223RD ST	Other	40	Principal Arterial	0.197883	23618.71029	4673.741247	4482.141197	50.01952507	38.93277381	102.647751	2984.357151	578.2441807	853.9086708
103591	DOLORES ST	Other	30	Major Collector	0.263214	0.006694	0.001761955	0.001729053	1.36871E-05	1.05286E-05	8.68606E-06	0.001475578	0.000142136	0.00011134
103592	E 220TH ST	Other	30	Major Collector	0.250221	0.007988	0.001998765	0.0018684	1.02591E-05	7.25641E-06	0.00011285	0.001334178	0.000251222	0.00028325
103596	E CARSON ST	Other	35	Minor Arterial	0.25147	16637.65713	4183.871638	3958.950513	48.03231151	43.54306731	133.3457461	2845.630777	428.6772076	601.2383126
103850	GRACE AVE	Other	30	Major Collector	0.26205	0.010619	0.002782709	0.002727416	2.25363E-05	1.65092E-05	1.62471E-05	0.00220253	0.000296903	0.000227984
1646468	0	Centroid Connector	25	Tier 1 Centroid Co	0.159714	6850.015741	1094.043414	1058.72478	10.50821397	9.832473301	14.97794714	817.2534635	139.3350274	102.1362888
1646469	0	Centroid Connector	25	Tier 1 Centroid Co	0.205278	3500.305534	718.5357194	683.9737827	8.592070807	8.935698173	17.03416776	520.4080594	86.73139667	76.83432661
1646470	0	Centroid Connector	25	Tier 1 Centroid Co	0.159703	9667.591576	1543.943377	1478.967896	20.2510728	19.08920505	25.63520408	1137.133976	181.4421036	160.3918153
2732919	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.245874	0	0	0	0	0	0	0	0	0
2683250	E CARSON ST	Other	35	Minor Arterial	0.117513	26305.24201	3091.207904	2938.290925	37.34688456	34.39411508	81.17598021	2166.503033	333.8317313	398.981015
2683254	GRACE AVE	Other	30	Major Collector	0.094843	2559.209292	242.7230869	231.742615	2.667503382	2.930069114	5.382899349	182.1303533	26.33185334	23.28040861
1646471	0	Centroid Connector	25	Tier 1 Centroid Co	0.208887	20468.89951	4275.687013	4015.765721	60.08137446	59.3518598	140.4880571	3020.852341	493.9168383	500.9965416
2683256	AVALON BLVD	Other	40	Principal Arterial	0.284027	25135.97827	7139.296499	6808.116121	77.91606323	64.61220305	188.6521115	5190.698504	797.824583	799.0484144
104141	AVALON BLVD	Other	40	Principal Arterial	0.062049	26268.87081	1629.957165	1557.416115	17.19468077	14.11745152	41.22891808	1184.184884	183.2542272	185.4887926
104150	AVALON BLVD	Other	35	Principal Arterial	0.262662	24755.789	6502.40505	6253.722706	62.48565919	49.68744983	136.509235	4699.1842	739.9921454	729.61898

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2732927	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.167062	0	0	0	0	0	0	0	0	0
104151	E 220TH ST	Other	25	Major Collector	0.105609	0	0	0	0	0	0	0	0	0
1646472	0	Centroid Connector	25	Tier 1 Centroid Co	0.218624	13085.08774	2860.714223	2778.536409	22.50761976	18.59311376	41.07708081	2163.984702	349.990628	264.5610788
104157	E CARSON ST	Other	40	Minor Arterial	0.101002	24616.37448	2486.303055	2351.934583	31.27725025	30.784704	72.30651752	1754.622774	258.4746346	324.4275558
2674511	CIVIC CENTER DR	Other	30	Minor Collector	0.040861	71.333333	2.91475132	2.91475132	0	0	0	0	0	0
18064	SAN DIEGO FWY	Interstate	65	Freeways	0.257876	105925.3933	27315.61671	22428.10865	862.5296022	733.7873548	3291.191108	12534.75812	3374.523153	6511.091101
93201	0	Ramp-Other	30	Ramps	0.143599	12477.25763	1791.721718	1734.296984	14.03038783	10.04761743	33.34672865	1231.651124	213.44356	289.2023007
103855	E 213TH ST	Other	30	Major Collector	0.248246	1131.464176	280.8814558	277.2139191	1.331183924	0.899973919	1.436378911	220.8719794	19.66250019	18.97122494
127074	0	Ramp-Other	30	Ramps	0.182113	12181.92234	2218.486422	2141.82725	19.81476071	14.02740206	42.8170092	1566.001018	246.2364797	329.589753
140583	AVALON BLVD	Other	35	Principal Arterial	0.086815	36084.52451	3132.677995	2984.497414	35.28457257	28.28303927	84.61296913	2194.295874	333.912129	401.2776398
1646473	0	Centroid Connector	25	Tier 1 Centroid Co	0.57982	6801.865356	3943.857571	3773.48277	24.65123458	17.04804564	128.6755208	2850.463382	459.4256418	463.5937468
2666772	W DEL AMO BLVD	Other	40	Principal Arterial	0.307588	28354.99976	8721.657666	8304.51622	108.5934285	92.2881637	216.2598535	5581.154915	1101.127418	1622.233886
2671598	SAN DIEGO FWY	Interstate	65	Freeways	0.174794	110993.3401	19400.96988	16044.40176	606.5558665	522.1813091	2227.830953	9336.095538	2264.52484	4438.537557
2732888	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.545898	0	0	0	0	0	0	0	0	0
103598	E 213TH ST	Other	30	Major Collector	0.253587	1131.324369	286.8891528	283.1451215	1.359470524	0.919071307	1.465489416	225.5987796	20.08175892	19.37537686
2732889	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.320973	0	0	0	0	0	0	0	0	0
2732890	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.21757	0	0	0	0	0	0	0	0	0
2683260	E 213TH ST	Other	30	Major Collector	0.179566	1131.324369	203.1473916	200.4962277	0.962646682	0.650798181	1.037719097	159.7474257	14.21997627	13.71978422
127072	AVALON BLVD	Other	35	Principal Arterial	0.228863	37342.95391	8546.42046	8185.875864	83.60084964	68.54949342	208.3942533	5901.239162	979.7343966	1159.879451
1657156	0	Ramp-Other	35	Ramps	0.236756	1480.937716	350.6208899	287.9761543	13.60231595	10.98985105	38.05256856	150.1152138	37.59384197	100.2670983
2667622	0	Ramp-Other	30	Ramps	0.039251	12477.25763	489.7448392	474.0485027	3.835031947	2.746391214	9.114913379	336.6565106	58.34214148	79.04985066
2732914	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.163604	0	0	0	0	0	0	0	0	0
2761702	SAN DIEGO FWY	Interstate	65	Freeways	0.26308	106231.0095	27947.25397	22891.50485	895.0503638	760.8071318	3399.891629	12705.57923	3478.353273	6707.572344
2761705	0	0	35	Ramps	0.120853	6779.493373	819.3221126	780.2092606	7.559261731	6.643684358	24.9099059	594.9502359	79.36109036	105.8979343
2667623	0	Ramp-Other	30	Ramps	0.141096	12477.25763	1760.491143	1704.06735	13.78583138	9.872482605	32.76547905	1210.182849	209.7231356	284.1613648
2674507	AVALON BLVD	Other	35	Principal Arterial	0.09601	25111.17823	2410.924222	2277.274458	29.48226557	24.8706326	79.29686656	1649.140849	269.8883719	311.1043265
2674508	E DESFORD ST	Other	30	Minor Collector	0.054704	71.333333	3.902218648	3.902218648	0	0	0	0	0	0
17968	SAN DIEGO FWY	Interstate	65	Freeways	0.239599	109118.7527	26144.74403	21543.72588	831.4368861	715.7804014	3053.800866	12368.73254	3102.32506	6070.432023
1657154	AVALON BLVD	Other	35	Principal Arterial	0.028057	36105.09657	1013.000695	972.3688146	9.329744661	7.753597094	23.54853823	711.3504305	112.9509391	130.2886592
2761706	0	Ramp - Other	30	Ramps	0.082248	9172.088814	754.3859608	711.0755374	9.669232961	6.164137717	27.47705275	513.4027794	80.49229496	117.180463
2761707	0	Ramp - Other	30	Ramps	0.126693	9172.088814	1162.039448	1095.32503	14.89427258	9.495101398	42.3250443	790.8342857	123.9885508	180.5021934
2761704	0	Ramp-Other	35	Ramps	0.124735	6779.493373	845.6401059	805.2708838	7.80207783	6.857090584	25.71005364	614.0610302	81.91030099	109.2995527
98479	AVALON BLVD	Other	35	Principal Arterial	0.028841	34921.77281	1007.17885	973.0421484	7.933544325	6.631603096	19.57155394	714.0306066	111.5826929	129.1532685
127076	AVALON BLVD	Other	35	Principal Arterial	0.052176	29893.73547	1559.735542	1472.361828	20.87300056	16.81068212	49.69003154	1045.332388	180.8945358	213.0727122
2761708	0	Ramp - Other	30	Ramps	0.071409	6190.789035	442.0780542	439.7744917	0.455890338	0.256594959	1.591077211	374.2404619	27.08133939	38.45269043
98480	AVALON BLVD	Other	35	Principal Arterial	0.029961	36105.09657	1081.744798	1038.355564	9.962878419	8.279770557	25.14658567	759.6239886	120.6159991	139.130289
2761709	0	Ramp - Other	30	Ramps	0.0259	2981.299779	77.21566428	64.41265745	2.879502637	1.848027989	8.075476203	25.93440605	15.52474125	22.95351012
2674513	AVALON BLVD	Other	35	Principal Arterial	0.162076	35214.11014	5707.362116	5378.816722	84.10694164	73.65992722	170.7785246	3937.766863	610.8072354	715.9790432
2674514	CARSON PLAZA DR	Other	30	Minor Collector	0.136941	0	0	0	0	0	0	0	0	0
2683261	AVALON BLVD	Other	35	Principal Arterial	0.158117	35142.77681	5556.670441	5236.150364	82.05247718	71.86065002	166.6069497	3841.579772	595.8871618	698.4899576
2662655	E DEL AMO BLVD	Other	45	Principal Arterial	0.104212	28354.99976	2954.931235	2813.602105	36.79187215	31.26758559	73.26967194	1890.916798	373.0662136	549.6190936
2674512	CARSON PLAZA DR	Other	30	Minor Collector	0.129234	0	0	0	0	0	0	0	0	0
104080	AVALON BLVD	Other	35	Principal Arterial	0.095591	35142.77681	3359.333178	3165.559993	49.6055348	43.44397753	100.7236725	2322.460279	360.2487379	422.2781456
12810	HARBOR FWY	Interstate	65	Freeways	0.383607	117989.6337	45261.64942	38999.62757	779.69358	635.471441	4846.856832	25634.98204	5134.825136	8225.344976
13481	GARDENA FWY	State Route-Limited Access	65	Freeways	0.586987	97606.76075	57293.89967	48411.88911	1220.178802	1009.315245	6652.516511	33146.29658	5688.272583	9574.580675
18243	GARDENA FWY	State Route-Limited Access	65	Freeways	0.743401	49739.55088	36976.43186	34340.5139	523.0474541	406.8933873	1705.977124	20687.42932	4996.807138	8656.277438
18244	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.286834	51350.28678	14729.00816	12066.90516	346.9148233	289.1484483	2026.039729	7984.732339	1454.310766	2625.184936
91942	0	Ramp-Other	30	Ramps	0.28402	3444.025941	978.1722478	891.9449462	10.16709177	8.893562567	67.16664721	547.9865285	151.0127663	192.9456518
103302	S MAIN ST	Other	45	Minor Arterial	0.146611	21235.3869	3113.341309	2787.878887	53.36848983	47.57353407	224.520398	2048.770347	344.0952677	392.9607184
103303	E 192ND ST	Other	35	Major Collector	0.62433	2862.884629	1787.38476	1770.291991	7.178664963	3.793179348	6.120925077	1208.937965	238.238134	323.1158924
103419	GRIFFITH ST	Other	30	Major Collector	0.176887	2854.415379	504.9089731	500.0819965	2.024706975	1.068129142	1.734140537	341.1897421	67.41513028	91.47712426
103421	W GARDENA BLVD	Other	40	Minor Arterial	0.144495	1567.346672	226.4737574	222.4858688	1.760858985	1.335194921	0.8918347	149.0968698	27.91736455	25.38682939
103424	W 168TH ST	Other	25	Minor Arterial	0.141643	0	0	0	0	0	0	0	0	0
103428	S MAIN ST	Other	40	Minor Arterial	0.394887	20529.35873	8106.776879	7243.862237	191.9002117	175.967133	495.0472969	5391.132615	819.0241366	1028.177068
103429	E VICTORIA ST	Other	40	Minor Arterial	0.236975	22014.33372	5216.846734	4881.271551	63.76814684	60.34382824	211.4632073	3687.70405	499.3570222	614.6658702
103430	W VICTORIA ST	Other	40	Minor Arterial	0.196394	24162.72092	4745.413413	4468.756811	79.04598121	74.98448278	122.626138	3371.806362	435.0934216	595.9341076
103431	W ALBERTONI ST	Other	40	Minor Arterial	0.177356	5445.467483	965.7863309	944.4486385	6.431727017	5.233245443	9.672719919	653.4411168	127.4690362	145.2708174
103442	W WALNUT ST	Other	30	Minor Arterial	0.139681	1261.537894	176.2128746	169.1386183	3.170790408	2.27892834	1.624537522	138.4583652	15.46923369	15.21101953
104024	S BROADWAY	Other	40	Principal Arterial	0.459954	2246.896315	1033.468948	953.0092924	27.03164147	25.26453085	28.16348293	635.8019666	147.1634855	170.0438402
140618	AVALON BLVD	Other	40	Principal Arterial	0.273143	29171.60932	7968.020884	7541.32014	103.3204418	91.0074449	232.3728578	5494.716661	915.8518567	988.8083091
1646474	0	Centroid Connector	25	Tier 1 Centroid Co	0.325497	13834.85805	4503.204789	4098.799259	81.21438345	84.30394108	238.8872053	3113.872012	467.4609587	517.4662888
1646475	0	Centroid Connector	25	Tier 1 Centroid Co	0.376135	1569.227977	590.2415651	501.3732496	21.81181325	21.42331094	45.63319131	381.7479746	64.61531727	55.00995702
1646478	0	Centroid Connector	25	Tier 1 Centroid Co	0.265601	0	0	0	0	0	0	0	0	0
1646479	0	Centroid Connector	25	Tier 1 Centroid Co	0.446395	7346.38358	3279.388898	3083.412885	59.70720879	53.05550725	83.2132968	2458.860189	313.5184042	311.0342924
2668406	0	Ramp-Other	30	Ramps	0.187094	2401.560396	449.3175407	354.8835144	11.21780768	13.57749315	69.63872548	261.5705636	41.15415903	52.15879199
2732672	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.437906	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2732931	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.455753	0	0	0	0	0	0	0	0	0
2769030	I 110 H	I-110 EXPRESS LANES	65	Freeways	0.384207	1327.322358	509.9665412	509.9665412	0	0	0	0	19.43023935	490.5363018
12525	SAN DIEGO FWY	Interstate	65	Freeways	0.444542	85589.42439	38048.09389	31385.91577	1146.109225	968.9261704	4547.142727	18129.22145	4602.346232	8641.011828
12669	0	Low Speed Freeway-Freeway Ramp	25	Ramps	0.608131	1604.28861	975.6176367	331.5139518	126.1914656	113.738255	404.1739643	71.1041932	93.25006623	167.1596924
12763	0	High Speed Freeway-Freeway Ramp	30	Ramps	0.518257	26104.41161	13528.79405	11717.81178	373.0892807	313.4557167	1124.437268	6340.062549	1839.31037	3538.438866
12849	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.496765	20691.83482	10278.97933	8962.436326	182.0720073	124.1535922	1010.3174	5786.114417	1181.242359	1995.07955
12850	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.382428	50.544986	19.32981791	5.328413686	0.120192149	0.795606653	13.08560542	3.878562595	0.758471365	0.691379726
12947	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.425122	33713.44343	14332.3265	12801.3818	322.1147587	276.2928254	932.5371144	8261.261608	1610.178137	2929.942054
13161	SAN DIEGO FWY	Interstate	65	Freeways	0.477301	83289.05838	39753.95085	32393.45103	1299.424353	1111.397478	4949.677991	18271.62772	4800.036774	9307.467508
97111	S FIGUEROA ST	Other	40	Minor Arterial	0.321544	6275.195514	2017.751466	1977.525857	10.64599483	8.218419623	21.36119461	1543.307679	191.4993147	224.9267624
103304	S MAIN ST	Other	45	Minor Arterial	0.196436	16803.2743	3300.76799	2916.488166	57.85564979	51.35939478	275.0647796	2165.293062	352.3309964	396.1140033
104159	S BROADWAY	Other	40	Principal Arterial	0.294167	8974.603371	2640.03215	2447.803245	43.66218676	43.11353824	105.45318	1805.363805	290.661276	351.7781638
1643030	0	Ramp-Other	30	Ramps	0.405533	3108.092551	1260.434096	1226.966283	8.461353178	5.108034866	19.89842519	978.5866148	82.15752904	166.2221391
2665996	I 405 HOV	HOV-Interstate	65	Freeways	0.615659	13106.75375	8069.290905	8069.290905	0	0	0	7358.676575	74.2052703	633.1255444
2768555	I 405 HOV	HOV-Interstate	65	Freeways	0.761954	13647.51082	10398.77546	10398.77546	0	0	0	9292.02238	82.96604019	1009.055927
2769010	0	Low Speed Freeway-Freeway Ramp	30	Ramps	0.640458	0	0	0	0	0	0	0	0	0
2769032	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.495602	7482.835613	3708.508295	3708.508295	0	0	0	3625.48806	9.430756933	73.58947833
2769035	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.838303	105.002398	88.02382525	88.02382525	0	0	0	0	0	88.02382525
2769036	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.401177	114.07778	45.76538155	45.76538155	0	0	0	0.056405486	0	45.70897646
1643029	HARBOR FWY	Interstate	65	Freeways	0.07011	85384.43247	5986.30256	5094.302414	89.37851541	70.57656361	732.0450673	3322.746594	676.466498	1094.271372
2769034	I 110 H	I-110 EXPRESS LANES	40	Ramps	0.110141	219.080178	24.12970989	24.12970989	0	0	0	0.015485825	0	24.11422406
12923	SAN DIEGO FWY	Interstate	65	Freeways	0.304703	111693.836	34033.44691	28402.23617	1004.932511	848.424859	3777.853374	16153.89968	4235.992668	8003.202731
13505	SAN DIEGO FWY	Interstate	65	Freeways	0.254101	120110.5944	30520.22214	25665.67255	889.6092478	760.019764	3204.920572	15278.30911	3569.301565	6810.438846
91804	0	Ramp-Other	30	Ramps	0.141563	1394.789471	197.4505819	191.2910748	1.489137012	1.208902578	3.461467474	135.9624663	24.75080782	30.57780067
95396	0	Ramp-Other	30	Ramps	0.103949	663.675037	68.98835642	58.93905878	1.424220737	1.412519302	7.212557601	42.79907904	6.372891051	9.767088684
127068	S MAIN ST	Other	45	Principal Arterial	0.066345	23378.31398	1551.034241	1399.640898	24.97012906	23.18152451	103.2416895	1050.238337	167.6340297	180.8397016
130600	0	Ramp-Other	30	Ramps	0.148404	2614.139936	387.9488231	377.406721	2.702193012	2.060847466	5.779061603	276.5485845	44.39003594	56.46810043
2666001	I 405 HOV	HOV-Interstate	65	Freeways	0.297486	13761.5886	4093.879946	4093.879946	0	0	0	3627.881	32.39202817	427.8555215
2668415	0	Ramp-Other	30	Ramps	0.10622	3064.668043	325.5290395	270.3866562	8.276303695	7.798795721	39.0672839	200.1331996	27.6934291	42.56002736
2668417	0	Shared HOV Ramp to MF	30	Ramps	0.103975	5994.594877	623.2880023	546.4956099	13.55451195	11.99594646	51.24193406	389.6576885	63.10174397	93.73617729
97090	S FIGUEROA ST	Other	40	Minor Arterial	0.10662	3661.055578	390.3417457	384.5773456	1.588704744	1.24452195	2.931173477	313.0569342	31.6070303	34.01374106
13026	0	High Speed Freeway-Freeway Ramp	50	Ramps	0.057161	33713.44343	1927.09414	1721.246572	43.31086541	37.1497457	125.3869572	1110.791666	216.5011279	393.9537774
13162	0	High Speed Freeway-Freeway Ramp	50	Ramps	0.064527	36821.53598	2375.983252	2138.284043	50.23842155	42.74978651	144.711001	1409.642116	257.4729679	471.1689593
13160	SAN DIEGO FWY	Interstate	65	Freeways	0.140192	111744.381	15665.66826	13069.6497	462.4074062	390.6467823	1742.96437	7433.732967	1949.232547	3682.478426
91949	0	Ramp-Other	30	Ramps	0.141764	3064.668043	434.4596004	360.8651283	11.04577214	10.40847747	52.1402225	267.1030212	36.96037736	56.8017296
2668416	0	Ramp-Other	30	Ramps	0.095061	6658.269914	632.9417963	553.5429328	13.69489946	12.25925221	53.44471184	395.3911076	63.51988273	94.63194237
104247	S MAIN ST	Other	45	Principal Arterial	0.171089	22624.3066	3870.769992	3433.62915	68.36094685	64.29470231	304.4851934	2590.953397	404.5908328	435.689674
104029	S BROADWAY	Other	40	Principal Arterial	0.293741	1183.271669	347.5754033	334.5554968	4.40016557	3.7021644	4.917576535	238.4173695	47.80195015	48.33617662
104030	W VICTORIA ST	Other	40	Minor Arterial	0.203963	25226.34557	5145.241121	4831.283552	91.02405918	86.50708622	136.4264245	3618.148462	483.928438	660.7430703
104160	GRIFFITH ST	Other	30	Major Collector	0.175168	10645.74708	1864.794225	1753.311589	25.38063682	24.52289307	61.57910542	1270.739742	211.3344577	271.2373891
105732	S FIGUEROA ST	Other	40	Minor Arterial	0.198648	16920.9426	3361.311405	3210.034185	35.35976056	32.88730055	83.03015882	2394.519634	357.9694643	446.5532305
12827	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.561655	31423.87287	17649.37531	13221.96378	350.2134674	278.9448414	3798.253226	8244.365762	1836.583337	3141.014681
13198	0	High Speed Freeway-Freeway Ramp	30	Ramps	0.572632	37254.59858	21333.17529	16813.26196	476.5568029	389.7002897	3653.656234	11103.5649	2010.608672	3699.088396
13199	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.500522	16497.2486	8257.235866	7309.995881	218.8274136	200.2573997	528.1551714	4927.707191	890.4346408	1487.182511
103668	S BROADWAY	Other	40	Principal Arterial	0.313583	3164.845218	992.441658	932.5217075	21.1341436	18.71287518	20.07293169	694.9900248	116.8211976	120.7104857
103669	W WALNUT ST	Other	30	Minor Arterial	0.284715	0	0	0	0	0	0	0	0	0
105878	S FIGUEROA ST	Other	40	Principal Arterial	0.407088	4240.277854	1726.166231	1684.185975	14.72132387	12.32467102	14.93426143	1198.361129	224.0073363	209.7102454
2744655	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.261665	0	0	0	0	0	0	0	0	0
89437	GARDENA FWY	State Route-Limited Access	65	Freeways	0.245379	76565.44874	18787.55325	16934.37033	365.8536824	307.7420672	1179.587163	10727.78077	2348.35423	3857.090234
104025	W ALBERTONI ST	Other	40	Minor Arterial	0.185304	7491.482776	1388.201724	1350.16858	12.66350099	10.24114132	15.12850226	975.9267854	172.9724578	182.1830242
2683275	S FIGUEROA ST	Other	40	Principal Arterial	0.183317	4240.277854	777.3150154	758.4107621	6.629202846	5.549959022	6.725091385	539.6375407	100.8734054	94.43524018
13235	GARDENA FWY	State Route-Limited Access	65	Freeways	0.131839	101050.7867	13322.43467	11287.48329	278.7751876	230.8234565	1525.352728	7699.124722	1347.701175	2240.042148
13536	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.088444	53751.84718	4754.028372	3888.539322	112.2725947	95.57606959	657.6403855	2585.707962	467.8849138	834.1209693
103667	S BROADWAY	Other	40	Principal Arterial	0.284597	1903.307324	541.6755545	501.7079391	12.72019582	12.33988629	14.90753323	348.6428122	74.5046196	78.56050736
103707	W 168TH ST	Other	25	Minor Arterial	0.24928	812.444424	202.526146	196.5616426	2.974988037	1.856955272	1.132560056	163.9794569	20.54047632	12.04170971
103730	W GARDENA BLVD	Other	40	Minor Arterial	0.249273	7625.729379	1900.888439	1828.154438	23.85408252	20.42815866	28.45175998	1380.616979	211.4098778	201.4786346
103706	S BROADWAY	Other	40	Principal Arterial	0.167624	8437.24648	1414.285004	1321.165147	27.91196903	25.94201943	39.26586853	1018.397782	147.7982251	154.9691401
104012	AVALON BLVD	Other	40	Principal Arterial	0.101718	28803.3707	2929.821261	2778.305609	36.35487567	31.77269012	83.38808602	2029.319589	336.1853009	367.1971486
140617	E 189TH ST	Other	25	Major Collector	0.339766	0	0	0	0	0	0	0	0	0
1646484	0	Centroid Connector	25	Tier 1 Centroid Co	0.523023	8270.691393	4325.761824	4022.892345	62.36484096	61.21329547	179.291343	3044.833804	497.6654626	480.3930794
2683279	E 184TH ST	Other	25	Minor Collector	0.101597	77.333333	7.856834633	7.856834633	0	0	0	0	0	0
2732900	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.39231	0	0	0	0	0	0	0	0	0
2744653	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.300051	0	0	0	0	0	0	0	0	0
103418	S MAIN ST	Other	45	Minor Arterial	0.388496	18380.97152	7140.933913	6289.11135	136.9712173	123.7164269	591.1349192	4679.564658	763.7346261	840.3731213
2744652	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.183193	0	0	0	0	0	0	0	0	0
2759518	E 184TH ST	Other	25	Minor Collector	0.515397	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2732933	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.150671	0	0	0	0	0	0	0	0	0
104059	E TURMONT ST	Other	30	Major Collector	0.203069	276.92231	56.23433657	56.23433373	2.84297E-06	0	0	50.18174237	3.438490617	2.614100739
2683281	AVALON BLVD	Other	40	Principal Arterial	0.258495	16389.67459	4236.648933	4014.182619	55.8509211	47.49395404	119.1214389	2916.91804	464.6313996	526.7363942
2683283	BRENNER DR	Other	25	Minor Collector	0.146979	38.666667	5.683188049	5.683188049	0	0	0	0	0	0
2732898	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.18553	0	0	0	0	0	0	0	0	0
2732899	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.17501	0	0	0	0	0	0	0	0	0
104018	AVALON BLVD	Other	40	Principal Arterial	0.258563	16389.67459	4237.763431	4015.238595	55.86561331	47.50644786	119.1527751	2917.685368	464.7536261	526.8749581
140613	BRENNER DR	Other	25	Minor Collector	0.041391	38.666667	1.600452014	1.600452014	0	0	0	0	0	0
2732897	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.146459	0	0	0	0	0	0	0	0	0
140619	AVALON BLVD	Other	40	Principal Arterial	0.27569	29171.60932	8042.320973	7611.641336	104.2838828	91.85606984	234.5396849	5545.953718	924.3919792	998.0287349
104011	AVALON BLVD	Other	40	Principal Arterial	0.054173	29171.60932	1580.313592	1495.685176	20.49175082	18.0496894	46.08697577	1089.778196	181.6427389	196.1123387
18040	GARDENA FWY	State Route-Limited Access	65	Freeways	0.168929	103771.266	17529.97619	15169.42145	354.7089049	292.5290564	1713.316774	10540.24314	1735.730381	2893.447931
98490	AVALON BLVD	Other	40	Principal Arterial	0.171526	38211.98834	6554.349511	6253.617897	74.11103745	66.26060701	160.3599696	4544.543738	769.2617034	889.555338
98525	E ALBERTONI ST	Other	40	Minor Arterial	0.355514	10837.71935	3852.960957	3694.572659	52.08384301	42.50960711	63.79484782	2137.94608	687.1480603	837.8377736
98544	S MAIN ST	Other	40	Minor Arterial	0.121643	24573.98576	2989.253349	2490.394731	94.68942422	91.57800016	312.5911936	1921.339957	267.7165762	301.3381985
127556	0	Ramp-Other	30	Ramps	0.364044	5657.927525	2059.734568	1804.084467	41.31358394	39.09922843	175.2372883	1474.240045	142.6858026	187.1586201
127561	0	Ramp-Other	30	Ramps	0.246801	2540.587048	627.019424	605.911692	5.323285815	4.079854991	11.70459123	437.4527912	77.4154794	91.04342142
2672011	SR 91 HOV	HOV-Other	65	HOV	0.314901	7148.020329	2250.91875	2250.91875	0	0	0	0	741.5527635	1506.426911
2676600	E 169TH ST	Other	30	Minor Collector	0.269545	71.333333	19.22754324	19.22754324	0	0	0	0	0	0
2683287	E VICTORIA ST	Other	40	Minor Arterial	0.313279	22091.66706	6920.855363	6477.227734	84.3009654	79.77404438	279.55262	4875.114409	660.1458743	812.5832225
2683289	BILLINGS DR	Other	35	Minor Collector	0.383677	71.333333	27.36895921	27.36895921	0	0	0	0	0	0
2732673	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.576636	0	0	0	0	0	0	0	0	0
2732936	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.31104	0	0	0	0	0	0	0	0	0
18173	GARDENA FWY	State Route-Limited Access	65	Freeways	0.170602	93941.81733	16026.66192	13838.39382	326.3700256	265.3559423	1596.54213	9496.65541	1609.952621	2731.785792
93237	0	Ramp-Other	30	Ramps	0.181295	9829.448629	1782.029889	1574.101462	33.84816973	31.95493686	142.1253204	1219.926506	151.9286211	202.2463351
124028	SR 91 HOV	HOV-Other	65	HOV	0.298494	7148.020329	2133.64118	2133.64118	0	0	0	0	702.9163153	1427.938921
2732930	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.395585	0	0	0	0	0	0	0	0	0
98531	E ALBERTONI ST	Other	40	Minor Arterial	0.181591	14204.60341	2579.428139	2353.995265	45.71801496	40.98060304	138.7342554	1589.355275	339.9974904	408.4809006
127550	S MAIN ST	Other	40	Minor Arterial	0.164118	23576.17429	3869.274573	3375.388468	101.6349232	94.76417363	297.4870074	2675.914031	325.6514706	373.8229674
2668405	0	Ramp-Other	30	Ramps	0.127301	9829.448629	1251.29864	1105.296286	23.76737282	22.43799011	99.79699059	856.6031283	106.6806332	142.0125249
93263	0	Ramp-Other	30	Ramps	0.120551	2401.560396	289.5105073	228.6634662	7.228013373	8.74843863	44.87058909	168.538772	26.51701832	33.607676
2732932	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.235556	0	0	0	0	0	0	0	0	0
18118	GARDENA FWY	State Route-Limited Access	65	Freeways	0.055286	103771.266	5737.09821	4964.550991	116.0868561	95.73703398	560.7233287	3449.543194	568.0587102	946.9490869
103423	S MAIN ST	Other	40	Minor Arterial	0.285087	10215.13978	2912.203555	2506.672056	86.64877004	87.46397831	231.418751	1900.232358	299.9434284	306.4962697
140641	BILLINGS DR	Other	30	Minor Collector	0.103076	0	0	0	0	0	0	0	0	0
1646485	0	Centroid Connector	25	Tier 1 Centroid Co	0.383023	0	0	0	0	0	0	0	0	0
2676630	AMBLER AVE	Other	30	Minor Collector	0.097595	71.333333	6.961776634	6.961776634	0	0	0	0	0	0
1646486	0	Centroid Connector	25	Tier 1 Centroid Co	0.138917	26014.32676	3613.83223	3131.794896	102.3979995	99.41081334	280.2285212	2461.422496	332.9855983	337.386802
103420	S MAIN ST	Other	40	Minor Arterial	0.166874	10215.13978	1704.641236	1467.265756	50.71934831	51.19652568	135.4596059	1112.289843	175.570123	179.4057902
2732671	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.145198	0	0	0	0	0	0	0	0	0
140640	BILLINGS DR	Other	35	Minor Collector	0.117797	71.333333	8.402852627	8.402852627	0	0	0	0	0	0
140644	E SHERMAN DR	Other	30	Minor Collector	0.139	71.333333	9.915333287	9.915333287	0	0	0	0	0	0
2732938	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.181446	0	0	0	0	0	0	0	0	0
2732937	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.11582	0	0	0	0	0	0	0	0	0
2676631	E 169TH ST	Other	30	Minor Collector	0.131548	0	0	0	0	0	0	0	0	0
93197	0	Ramp-Other	30	Ramps	0.351904	0	0	0	0	0	0	0	0	0
98477	E ALBERTONI ST	Other	40	Minor Arterial	0.263832	8129.573098	2144.84153	1949.355005	39.5716575	37.32698302	118.5878844	1166.08466	326.4042661	456.866079
104017	E VICTORIA ST	Other	40	Minor Arterial	0.22569	6576.137347	1484.168438	1113.056149	75.24218944	69.67350468	226.1965951	735.1111035	147.7326244	171.5330205
127560	AVALON BLVD	Other	40	Principal Arterial	0.169345	42568.92274	7208.834221	6917.431275	75.08076482	66.61949643	149.7026846	5151.574516	800.0458426	909.9270654
140628	UNKNOWN	Other	35	Minor Collector	0.159557	0	0	0	0	0	0	0	0	0
140630	UNKNOWN	Other	30	Minor Collector	0.193909	0	0	0	0	0	0	0	0	0
140632	UNKNOWN	Other	30	Minor Collector	0.129803	0	0	0	0	0	0	0	0	0
2668404	0	Ramp-Other	30	Ramps	0.183053	0	0	0	0	0	0	0	0	0
2672010	GARDENA FWY	State Route-Limited Access	65	Freeways	0.217432	101230.6789	22010.78898	18991.06623	451.8633256	372.9258243	2194.933597	13181.16786	2165.891235	3644.007136
104016	AVALON BLVD	Other	40	Principal Arterial	0.167688	42568.92274	7138.297516	6849.745877	74.34611764	65.96764071	148.2378799	5101.167601	792.2175869	901.0236484
18101	GARDENA FWY	State Route-Limited Access	65	Freeways	0.044824	103264.6883	4628.736387	3919.003072	98.26318822	81.88839705	529.58173	2712.66585	451.9413175	754.1867257
98470	E ARTESIA BLVD	Other	40	Minor Arterial	0.147316	5900.445839	869.2300792	792.0897102	14.77838845	13.46833525	48.89364535	509.6492948	108.1702413	174.2701741
104056	AVALON BLVD	Other	40	Principal Arterial	0.229735	35444.47253	8142.835896	7731.374703	103.7776273	92.97160303	214.7119626	5680.593042	937.8899201	1061.967149
104034	AVALON BLVD	Other	40	Principal Arterial	0.10199	34785.26231	3547.748903	3374.327516	43.33574753	38.61821416	91.4674251	2510.496928	396.6621267	437.2853916
17567	SAN DIEGO FWY	Interstate	65	Freeways	0.588746	120385.3401	70876.38742	59917.53255	1908.935495	1631.39046	7418.528909	34782.93869	8780.009402	16354.58446
17827	SAN DIEGO FWY	Interstate	65	Freeways	0.266459	112741.5738	30041.00702	25019.50186	906.1530276	767.0111283	3348.341001	14569.42241	3546.568446	6903.511004
88750	SAN DIEGO FWY	Interstate	65	Freeways	0.060858	121011.7937	7364.535741	6227.102779	204.3415496	175.483189	757.6082233	3697.958738	868.0821035	1661.061938
93065	0	Ramp-Other	30	Ramps	0.247585	2726.41669	675.0198762	471.5287793	43.61511185	31.35378733	128.5221977	360.0891618	49.0344863	62.40513126
105014	VERA ST	Other	35	Principal Arterial	0.257157	7508.963075	1930.982417	1710.816344	47.40708659	45.09544523	127.6635421	1334.141803	189.1041424	187.5703986
105023	E DEL AMO BLVD	Other	50	Principal Arterial	0.796681	27618.70622	22003.29849	20271.48007	387.0944857	365.3837525	979.3401868	12577.06941	3051.876994	4423.180828
105556	WILMINGTON AVE	Other	40	Minor Arterial	0.270879	21373.92367	5789.74707	4885.082048	84.62490749	83.24922953	736.7908849	3763.620129	532.0508081	589.4111109

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
127078	0	Ramp-Other	30	Ramps	0.267374	5549.267719	1483.729907	1247.302537	49.9877361	49.14926621	137.2903673	852.0821169	164.8748504	227.8500796
1646487	0	Centroid Connector	25	Tier 1 Centroid Co	0.352764	12092.81312	4265.909127	3751.175189	118.0533513	120.9956179	275.6849693	2825.914598	493.0631635	432.197427
1646488	0	Centroid Connector	25	Tier 1 Centroid Co	1.124468	2281.092903	2565.015974	2565.002233	0.004329202	0.002336645	0.007075153	2564.359187	0.312107338	0.330938804
2674146	E CARSON ST	Other	40	Minor Arterial	0.266139	16204.81578	4312.733466	3932.786798	78.12497145	86.86563144	214.9560649	3001.158242	427.2893728	466.3700191
2674147	MARTIN ST	Other	30	Major Collector	0.095254	71.333333	6.794785302	6.794785302	0	0	0	0	0	0
2674148	E 213TH ST	Other	30	Major Collector	0.1997	572.741507	114.3764789	76.22704926	8.930347955	10.11322777	19.10585397	66.52735526	6.248833469	3.450860733
2683299	WILMINGTON AVE	Other	45	Minor Arterial	0.374057	46595.99308	17429.55738	15911.52674	323.0701432	237.9698389	956.990667	11379.00044	1917.676577	2614.84972
2683303	E 223RD ST	Other	45	Principal Arterial	0.094683	27588.88165	2612.198081	2494.704124	21.84960847	15.87075793	79.77359076	1662.00351	335.4889445	490.4576156
2683305	E 220TH ST	Other	30	Major Collector	0.193675	3919.880682	759.1828911	708.6877669	21.14846771	10.41586823	18.93078825	548.2944628	72.94446019	73.63336003
2731326	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.331084	0	0	0	0	0	0	0	0	0
2762701	0	Ramp-Other	30	Ramps	0.19868	2953.586623	586.8185903	406.5636934	36.63627987	27.12785005	116.4907669	273.241596	56.77555953	76.54653793
17748	SAN DIEGO FWY	Interstate	65	Freeways	0.492361	123111.7567	60615.42766	51045.99938	1683.154535	1426.663517	6459.610231	29804.63444	7440.125946	13801.239
98413	E CARSON ST	Other	40	Minor Arterial	0.221502	24637.21317	5457.191991	4949.656297	122.5009927	121.3396094	263.6950918	3750.116446	585.7608832	582.1780164
104391	BONITA ST	Other	25	Major Collector	0.059342	565.38426	33.55103276	33.16212469	0.120649288	0.1109461	0.157312675	19.70693955	4.76168237	3.906581478
104634	S EDGAR ST	Other	25	Major Collector	0.248464	0	0	0	0	0	0	0	0	0
104635	E 223RD ST	Other	45	Principal Arterial	0.248903	27588.88165	6866.95541	6558.086886	57.4383268	41.72110369	209.7090931	4369.080614	881.9345051	1289.316687
2663554	SAN DIEGO FWY	Interstate	65	Freeways	0.78342	123965.3803	97116.95825	81764.1103	2774.933283	2365.949071	10211.9656	48680.94261	11398.62222	21684.54546
2731328	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.585407	0	0	0	0	0	0	0	0	0
2732885	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.822204	0	0	0	0	0	0	0	0	0
2732893	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.181	0	0	0	0	0	0	0	0	0
2759879	E WATSON CENTER RD	Other	30	Major Collector	0.489183	1132.892547	554.1917748	552.6871736	1.363987002	0.017065638	0.123548548	395.8973595	70.64036349	86.14945166
2759883	LUCERNE ST	Other	25	Major Collector	0.300202	0	0	0	0	0	0	0	0	0
104392	E 223RD ST	Other	45	Principal Arterial	0.252532	27588.88165	6967.075461	6653.703642	58.27577628	42.32939642	212.7666468	4432.781708	894.7930898	1308.114895
2759882	BONITA ST	Other	25	Major Collector	0.28716	0	0	0	0	0	0	0	0	0
17806	SAN DIEGO FWY	Interstate	65	Freeways	0.2805	110687.0408	31047.71493	25769.4087	926.256878	782.5200829	3569.529272	14593.02916	3848.526268	7327.853274
93127	0	Ramp-Other	30	Ramps	0.097966	2323.462091	227.6202872	156.7238673	15.92771423	15.39667562	39.57203003	116.9089019	15.48787188	24.32709356
98412	E CARSON ST	Other	40	Minor Arterial	0.096288	31062.75519	2990.970572	2769.926388	52.49518896	51.21367973	117.3353153	2067.583464	326.0280947	361.6790539
104394	BONITA ST	Other	25	Major Collector	0.098283	565.38426	55.56766123	54.92354658	0.199820936	0.183750388	0.260543319	32.63889219	7.886360897	6.470131566
104395	E 220TH ST	Other	25	Major Collector	0.251598	0	0	0	0	0	0	0	0	0
1656507	0	Ramp-Other	30	Ramps	0.129176	11223.80651	1449.846429	1352.720024	18.25953991	18.27749938	60.58936609	963.7943776	160.1557661	228.76988
1656508	0	Ramp-Other	30	Ramps	0.213602	2998.126799	640.4058805	610.7495149	5.988907087	5.434069056	18.23338947	434.8883371	73.02108665	102.8400912
2671100	0	Ramp-Other	30	Ramps	0.145291	2323.462091	337.5781307	232.4333688	23.62200691	22.83443641	58.68831855	173.3847586	22.96968737	36.07892279
2671102	0	Ramp-Other	30	Ramps	0.213627	9426.589184	2013.773968	1911.347025	18.87100509	17.60787179	65.94806612	1382.823502	224.1005999	304.4229229
2671103	0	Ramp-Other	30	Ramps	0.124485	11223.80651	1397.195553	1303.596273	17.59644846	17.61375573	58.38907566	928.7943821	154.3397422	220.4621486
2732891	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.188727	0	0	0	0	0	0	0	0	0
2683295	BONITA ST	Other	25	Major Collector	0.191948	565.38426	108.5243779	107.2664135	0.390252934	0.358866941	0.508844551	63.74418849	15.40216723	12.63625259
2732892	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.130243	0	0	0	0	0	0	0	0	0
98434	E CARSON ST	Other	40	Minor Arterial	0.15519	40956.07026	6355.972544	6001.182754	81.84150246	79.5217228	193.4265643	4433.108722	709.1446135	835.3405387
2683297	BONITA ST	Other	25	Major Collector	0.165069	565.38426	93.32741441	92.24560617	0.335604755	0.308613828	0.437589666	54.81791657	13.2453599	10.86676381
2732884	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.150338	0	0	0	0	0	0	0	0	0
104878	E 220TH ST	Other	25	Major Collector	0.13366	0	0	0	0	0	0	0	0	0
2671101	0	Ramp-Other	30	Ramps	0.094181	12424.71598	1170.172176	1111.939532	10.96021291	10.15870152	37.11372933	801.3908001	130.9947828	179.5539493
104909	E 223RD ST	Other	45	Principal Arterial	0.325927	27588.88165	8991.96143	8587.512342	75.2128401	54.63186125	274.6043864	5721.109578	1154.852563	1688.300743
2759880	E WATSON CENTER RD	Other	30	Major Collector	0.265456	1132.892547	300.733124	299.9166495	0.740169903	0.009260698	0.067043833	214.834386	38.33311528	46.74914876
2759881	LUCERNE ST	Other	25	Major Collector	0.275004	0	0	0	0	0	0	0	0	0
2683301	E 223RD ST	Other	45	Principal Arterial	0.05436	27588.88165	1499.731607	1432.275236	12.54443476	9.111819449	45.80011611	954.1999179	192.6130247	281.5846138
104890	ACARUS AVE	Other	30	Major Collector	0.341355	0.026942	0.009196786	0.009196786	0	0	0	0	0	0.009196786
105011	VERA ST	Other	35	Major Collector	0.265627	3919.853739	1041.218989	971.9644733	29.00531319	14.28545672	25.96374591	751.9907746	100.0439815	100.9816573
105012	E 220TH ST	Other	30	Major Collector	0.24067	3919.880682	943.3976837	880.6499799	26.28011733	12.94326581	23.52432068	681.3374383	90.64434353	91.50040407
105015	E CARSON ST	Other	40	Minor Arterial	0.253252	16276.14911	4121.967314	3760.418448	74.34199899	82.65941817	204.5474483	2855.835962	406.599139	443.7874196
2732940	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.065467	0	0	0	0	0	0	0	0	0
2732941	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24956	0	0	0	0	0	0	0	0	0
2732942	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.299619	0	0	0	0	0	0	0	0	0
104889	E CARSON ST	Other	40	Minor Arterial	0.149668	12544.37311	1877.491234	1752.938793	32.68665336	30.65358884	61.21219912	1334.981084	186.6031936	210.0018796
2732939	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.19374	0	0	0	0	0	0	0	0	0
140584	E DEL AMO BLVD	Other	50	Principal Arterial	0.582668	26942.93366	15698.78527	14863.47479	193.3203153	182.5164428	459.4737217	9414.273829	2180.988346	3107.784691
1646489	0	Centroid Connector	25	Tier 1 Centroid Co	0.626587	8171.429143	5120.111272	4790.178206	111.9613779	109.5488181	108.4228701	3833.210225	465.6195749	491.3484069
1646490	0	Centroid Connector	25	Tier 1 Centroid Co	0.7055	9649.468145	6807.699776	5791.440943	246.1772455	229.4994569	540.5821309	4099.076247	839.0544835	853.3102137
2683307	E 213TH ST	Other	30	Major Collector	0.492522	762.874447	375.7324484	335.3134078	9.298931595	9.455274824	21.66483413	226.594334	41.04297185	32.54286661
2683309	LEAPWOOD AVE	Other	35	Major Collector	0.447292	524.718958	234.7025922	234.5114862	0.111357369	0.048205106	0.031543479	194.8122234	24.02660959	15.67265321
2732886	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.4814	0	0	0	0	0	0	0	0	0
2732887	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.509615	0	0	0	0	0	0	0	0	0
140582	LEAPWOOD AVE	Other	35	Major Collector	0.094257	524.718958	49.45843482	49.41816343	0.023466128	0.010158171	0.006647098	41.05241261	5.063082149	3.302668667
153301	GALWAY AVE	Other	30	Major Collector	0.053074	71.333333	3.785945316	3.785945316	0	0	0	0	0	0
105505	E 213TH ST	Other	30	Major Collector	0.248756	644.07484	160.2174809	112.6967021	11.12407429	12.59752673	23.79917781	82.86969847	7.783849867	4.298559401
1646491	0	Centroid Connector	25	Tier 1 Centroid Co	0.093131	8554.923406	796.7285717	692.7279318	22.79695244	22.59832721	58.60536029	539.781312	78.00884056	74.93777906

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2674149	MARTIN ST	Other	30	Major Collector	0.162662	71.333333	11.60322261	11.60322261	0	0	0	0	0	0
17111	SAN DIEGO FWY	Interstate	65	Freeways	0.423552	138945.6123	58850.692	50364.27068	1538.839359	1305.09623	5642.485729	30638.68417	6857.003854	12868.58265
17336	SAN DIEGO FWY	Interstate	65	Freeways	0.404539	133758.2066	54110.41116	46209.74735	1383.624201	1175.268199	5341.771408	27474.97212	6625.801081	12108.97415
105365	WILMINGTON AVE	Other	40	Minor Arterial	0.085219	49451.40921	4214.199641	3676.696064	76.99089608	58.02755651	402.4851251	2631.818168	432.7672669	606.0316732
127102	S ALAMEDA ST	Other	45	Principal Arterial	0.344244	27555.97939	9485.980569	5272.736526	255.4313286	204.6473487	3753.165366	3942.23799	614.0225658	711.6565551
2674143	E 220TH ST	Other	30	Minor Collector	0.584362	0	0	0	0	0	0	0	0	0
2683317	E CARSON ST	Other	35	Minor Arterial	0.269188	12682.32662	3413.930138	3229.702559	51.36668243	44.54636379	88.31453253	2415.911421	379.6838052	395.7031777
2683319	E 223RD ST	Other	45	Principal Arterial	0.317588	32050.50248	10178.85498	9232.55727	76.19245768	54.32224248	815.7830113	6215.055086	1266.371993	1751.130191
2731314	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.760779	0	0	0	0	0	0	0	0	0
2683313	E 223RD ST	Other	45	Principal Arterial	0.236307	32050.50248	7573.758089	6869.648446	56.69235329	40.41943069	606.997859	4624.422278	942.2666047	1302.959564
17344	SAN DIEGO FWY	Interstate	65	Freeways	0.426417	121011.7937	51601.48603	43631.77373	1431.770853	1229.567436	5308.374014	25910.68506	6082.437253	11638.65142
105481	WILMINGTON AVE	Other	40	Minor Arterial	0.275576	15966.614	4400.015619	3533.842514	49.29916025	62.37199792	754.5019475	2677.139427	410.5226094	446.180478
127093	0	Ramp-Other	30	Ramps	0.198819	13372.86659	2658.779962	2476.631999	35.36471351	26.69058827	120.0926607	1756.971904	291.3846647	428.2754307
2671106	0	Ramp-Other	30	Ramps	0.179523	17933.81865	3219.532925	2977.829385	49.45844952	35.51447947	156.7306115	2077.755266	345.6222661	554.4518527
98330	WILMINGTON AVE	Other	40	Minor Arterial	0.068343	19886.49468	1359.102706	1126.472848	19.68897731	19.14378586	193.7970946	857.4112773	127.5500852	136.6363516
127085	0	Ramp-Other	30	Ramps	0.115466	0	0	0	0	0	0	0	0	0
127088	WILMINGTON AVE	Other	40	Minor Arterial	0.110874	37528.91652	4160.98109	3590.901261	72.68630382	59.10258447	438.290941	2589.668519	420.8393729	572.484357
2671105	0	Ramp-Other	30	Ramps	0.154151	0	0	0	0	0	0	0	0	0
93015	0	Ramp-Other	30	Ramps	0.149714	17933.81865	2684.943725	2483.373988	41.24609277	29.61745726	130.7061867	1732.753195	288.2332177	462.3875753
2671104	0	Ramp-Other	30	Ramps	0.144063	13372.86659	1926.535279	1794.552008	25.62504953	19.3398328	87.01838844	1273.090818	211.1354999	310.3256901
2683325	E 223RD ST	Other	45	Principal Arterial	0.278414	32050.50248	8923.308597	8093.735279	66.79423314	47.62167594	715.1574093	5448.437431	1110.16692	1535.130927
2731315	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.494224	0	0	0	0	0	0	0	0	0
127095	0	Ramp-Other	30	Ramps	0.129947	6618.348985	860.0345956	568.3442364	12.62733879	8.761397869	270.3016225	466.6497518	49.63059404	52.06389073
127096	0	Ramp-Other	30	Ramps	0.141913	9176.808975	1302.308492	868.6063709	55.5143537	37.93162946	340.256138	662.0579773	90.77624484	115.7721487
2674145	ARNOLD CENTER RD	Other	30	Minor Collector	0.263227	0	0	0	0	0	0	0	0	0
2683327	E CARSON ST	Other	35	Minor Arterial	0.241923	12682.32662	3068.146502	2902.578615	46.16395201	40.03443678	79.36949884	2171.213199	341.2271171	355.62395
2731311	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.265694	0	0	0	0	0	0	0	0	0
2731312	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.211586	0	0	0	0	0	0	0	0	0
2731313	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.171067	0	0	0	0	0	0	0	0	0
92947	0	Ramp-Other	30	Ramps	0.10232	5801.709538	593.6309199	509.8377897	7.720134553	3.863884375	72.20911129	369.305376	58.74828797	81.78412583
105699	WILMINGTON AVE	Other	40	Minor Arterial	0.544086	18862.36114	10262.74662	8800.287226	154.9371057	157.0818171	1150.440476	6682.442701	1009.802138	1108.042387
1646492	0	Centroid Connector	25	Tier 1 Centroid Co	0.41088	4477.582816	1839.749227	1278.031288	87.71708536	96.3695702	377.6312843	1114.426947	80.76101721	82.84332295
1646493	0	Centroid Connector	25	Tier 1 Centroid Co	0.39538	1393.278784	550.8745656	343.593897	55.79776369	65.34839256	86.13451236	303.2628312	22.56098931	17.77007615
2752048	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.561518	0	0	0	0	0	0	0	0	0
105596	WILMINGTON AVE	Other	40	Minor Arterial	0.225088	17469.08236	3932.08081	3445.066296	32.33196512	27.78210179	426.9004472	2591.875777	404.9105759	448.2799433
2683329	E 213TH ST	Other	30	Major Collector	0.145298	572.741507	83.21819548	55.46138109	6.497554818	7.358196136	13.90106344	48.40406442	4.546534829	2.510781987
2683331	WILMINGTON AVE	Other	40	Minor Arterial	0.042967	17469.08236	750.5940618	657.6279657	6.171841881	5.303319447	81.49093472	494.7626107	77.2932929	85.57206215
105843	E DEL AMO BLVD	Other	45	Principal Arterial	0.22384	42688.2889	9555.346587	9097.600886	102.2088017	86.48291686	269.0539826	6143.642269	1235.99195	1686.032161
2683333	E DEL AMO BLVD	Other	50	Principal Arterial	0.044815	27618.70622	1237.732319	1140.313851	21.77488779	20.55361289	55.0899676	707.4868931	171.6745692	248.8133253
17519	GARDENA FWY	State Route-Limited Access	65	Freeways	0.701007	103052.1299	72240.26445	62435.17989	1502.394824	1244.379232	7058.310508	43801.83173	6925.05342	11708.29473
105034	E UNIVERSITY DR	Other	45	Minor Arterial	0.788575	1555.117871	1226.327075	1062.164248	35.97967672	36.05473329	92.12841685	804.7104092	101.2358067	99.96634845
105042	E VICTORIA ST	Other	40	Minor Arterial	0.318131	3241.657969	1031.271891	787.7978629	56.14797157	58.38569898	128.9403579	640.9288676	66.66473313	80.20426219
105059	W GREENLEAF BLVD	Other	40	Minor Arterial	0.701957	10368.25724	7278.070749	6942.959988	105.950647	94.60538565	134.5547286	5401.630617	763.08906	778.2403126
140635	W WALNUT ST	Other	35	Minor Collector	0.540848	158.333334	85.63426703	85.63426703	0	0	0	0	0	0
1646494	0	Centroid Connector	25	Tier 1 Centroid Co	0.434294	4055.776803	1761.399531	1734.03875	9.691352257	5.351126595	12.31830155	1231.633824	248.8911692	253.5137577
1646495	0	Centroid Connector	25	Tier 1 Centroid Co	0.132511	2253.636129	298.6315771	177.604279	34.66750953	31.21472513	55.14506339	0	85.21674983	92.38752906
1646496	0	Centroid Connector	25	Tier 1 Centroid Co	0.524784	8632.35409	4530.121309	4530.121309	0	0	0	3765.393149	403.229212	361.4989477
1646497	0	Centroid Connector	25	Tier 1 Centroid Co	0.421017	6950.690976	2926.359063	2433.36177	39.59726774	39.78803265	413.6119918	1942.444372	245.5484044	245.3689943
1646498	0	Centroid Connector	25	Tier 1 Centroid Co	0.382	7837.472578	2993.914525	2345.789522	44.97918286	46.05042355	557.0953968	1823.787825	254.8090592	267.1926378
2674160	CHARLES WILLARD ST	Other	30	Minor Collector	0.347758	38.666667	13.44664278	13.44664278	0	0	0	0	0	0
2676143	S CENTRAL AVE	Other	40	Principal Arterial	0.194102	15261.19039	2962.227576	2712.129471	53.63442924	49.81874107	146.6449354	2020.391884	344.7494518	346.9881354
2683347	KEMP AVE	Other	30	Minor Collector	0.202303	71.333333	14.43094727	14.43094727	0	0	0	0	0	0
2732902	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.212541	0	0	0	0	0	0	0	0	0
2732903	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.30124	0	0	0	0	0	0	0	0	0
2732944	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.200919	0	0	0	0	0	0	0	0	0
2732946	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.517793	0	0	0	0	0	0	0	0	0
2732947	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.157899	0	0	0	0	0	0	0	0	0
105033	S CENTRAL AVE	Other	40	Principal Arterial	0.293953	10530.80008	3095.560276	2774.736874	67.10396681	64.27339401	189.4460408	2097.394826	344.2418093	333.100239
140614	E UNIVERSITY DR	Other	45	Minor Arterial	0.385858	6570.2892	2535.19865	2477.958502	18.93242258	13.87062544	24.43710059	1716.528538	344.9874109	373.9981724
140615	CANEY AVE	Other	25	Minor Collector	0.062557	4995.578249	312.5083885	308.2032441	1.61782605	0.885172229	1.802146122	213.7814858	44.26731019	47.73557749
2683345	E TURMONT ST	Other	30	Major Collector	0.247565	348.255644	86.21590851	86.21590504	3.46591E-06	0	0	61.17744732	4.191924565	3.186896323
2732905	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.393061	0	0	0	0	0	0	0	0	0
2732910	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.224207	0	0	0	0	0	0	0	0	0
2744650	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.266101	0	0	0	0	0	0	0	0	0
1646499	0	Centroid Connector	25	Tier 1 Centroid Co	0.366232	4956.911582	1815.379642	1790.175722	9.471356844	5.182128231	10.55043526	1251.556518	259.1573372	279.461867
2683339	E TURMONT ST	Other	30	Major Collector	0.251894	348.255644	87.72350719	87.72350366	3.52652E-06	0	0	62.24721554	4.265225886	3.242623401

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2683341	BRENNER DR	Other	25	Minor Collector	0.241062	38.666667	9.32106408	9.32106408	0	0	0	0	0	0
2732911	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.254272	0	0	0	0	0	0	0	0	0
2732912	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.119994	0	0	0	0	0	0	0	0	0
2732913	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.187662	0	0	0	0	0	0	0	0	0
2683343	E TURMONT ST	Other	30	Major Collector	0.152595	348.255644	53.14207	53.14206786	2.13633E-06	0	0	37.70877375	2.583833454	1.964350552
140610	KEMP AVE	Other	30	Minor Collector	0.275699	71.333333	19.66652857	19.66652857	0	0	0	0	0	0
2744648	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.257124	0	0	0	0	0	0	0	0	0
2674162	S CENTRAL AVE	Other	40	Principal Arterial	0.315047	15299.85705	4820.174065	4414.239773	87.0540542	80.86080987	238.0194278	3279.298522	559.562913	563.1965209
2674161	S CENTRAL AVE	Other	40	Principal Arterial	0.165162	15299.85705	2526.954991	2314.145729	45.6377039	42.39092288	124.7806351	1719.157785	293.3483888	295.2532917
17743	GARDENA FWY	State Route-Limited Access	65	Freeways	0.638429	104799.0986	66906.78374	56919.22333	1454.285281	1220.356163	7312.918971	39552.2357	6493.633081	10870.37522
93088	0	Ramp-Other	30	Ramps	0.325278	2649.195203	861.7249172	729.4832735	9.661154415	8.607105694	113.9733836	465.6815203	115.9308045	147.8709488
93107	0	Ramp-Other	30	Ramps	0.269	3058.2285	822.6634665	596.2567229	8.999347925	8.008405456	209.3989903	432.9542666	77.86634459	85.43611192
105053	S CENTRAL AVE	Other	40	Principal Arterial	0.084229	26520.278	2233.776495	2017.072578	37.10467919	33.54836833	146.0508699	1468.733831	246.9548024	275.3852593
1646500	0	Centroid Connector	25	Tier 1 Centroid Co	0.438092	9927.532408	4349.172528	3313.129051	111.2002536	106.7567509	818.0864719	2476.499939	396.4869596	440.1421527
1646501	0	Centroid Connector	25	Tier 1 Centroid Co	0.260195	802.616877	208.8368983	195.3241456	4.828656658	4.552461227	4.131634844	146.289495	27.24320775	21.79144287
2683351	E VICTORIA ST	Other	40	Minor Arterial	0.232566	6656.290171	1548.02678	1199.129195	67.71509311	64.64490981	216.5375815	757.5074168	159.2893133	193.9573848
2683353	E RADBARD ST	Other	30	Minor Arterial	0.198418	71.333333	14.15381727	14.15381727	0	0	0	0	0	0
2683355	E WALNUT ST	Other	40	Minor Arterial	0.205779	2669.881259	549.4054956	519.1612114	9.289643345	8.818677565	12.13596325	314.3991108	86.00526535	118.7568353
17733	GARDENA FWY	State Route-Limited Access	65	Freeways	0.124904	105701.3251	13202.51832	11404.68864	271.4034523	225.0260138	1301.40021	7983.338961	1278.408367	2142.941311
17866	GARDENA FWY	State Route-Limited Access	65	Freeways	0.103203	107857.3271	11131.19973	9429.833781	238.5400227	200.3448527	1262.481076	6559.782643	1079.579228	1789.990296
104530	E VICTORIA ST	Other	40	Minor Arterial	0.281172	6656.290171	1871.56242	1449.745681	81.86746197	78.15561424	261.7936623	915.8255093	192.5805785	234.4942331
140634	E RADBARD ST	Other	30	Minor Arterial	0.224979	71.333333	16.04850193	16.04850193	0	0	0	0	0	0
2674163	LYSANDER DR	Other	30	Minor Collector	0.244663	0	0	0	0	0	0	0	0	0
2674164	E MEADBROOK ST	Other	30	Minor Collector	0.063331	71.333333	4.517611312	4.517611312	0	0	0	0	0	0
2674165	TAMCLIFF AVE	Other	30	Minor Collector	0.144608	71.333333	10.31537062	10.31537062	0	0	0	0	0	0
2683349	SUDBURY CT	Other	30	Minor Collector	0.079745	71.333333	5.68847664	5.68847664	0	0	0	0	0	0
2732670	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.310456	0	0	0	0	0	0	0	0	0
105041	S CENTRAL AVE	Other	40	Principal Arterial	0.240597	23956.56569	5763.877834	5266.674319	80.59459697	72.41372057	344.1951976	3855.445137	645.6513587	674.1509628
98390	E ARTESIA BLVD	Other	45	Minor Arterial	0.065171	6595.16273	429.8133503	369.1544185	4.188939017	3.706196565	52.76379618	194.5689557	74.84710566	99.73835715
140633	S CENTRAL AVE	Other	40	Principal Arterial	0.125577	23885.23235	2999.435823	2739.92583	42.06547755	37.79555767	179.6489579	2012.307859	336.9907383	351.8657982
2683357	E RADBARD ST	Other	30	Minor Arterial	0.066846	71.333333	4.768347978	4.768347978	0	0	0	0	0	0
2683359	E RADBARD ST	Other	30	Minor Arterial	0.189763	71.333333	13.53642727	13.53642727	0	0	0	0	0	0
105052	S CENTRAL AVE	Other	45	Minor Arterial	0.057057	16686.08864	952.0581594	866.1734814	16.66020683	14.43947039	54.78500076	528.9403687	145.6259717	191.607141
105058	S CENTRAL AVE	Other	40	Principal Arterial	0.338134	17402.76691	5884.467187	5588.151643	76.05978622	66.25588405	153.9998741	4073.41763	690.4230798	773.478122
98375	W ARTESIA BLVD	Other	35	Minor Arterial	0.040676	13583.95923	552.5411257	492.927556	10.35277262	9.156308705	40.10448837	297.1491923	82.26051323	113.5178505
105055	S CENTRAL AVE	Other	40	Principal Arterial	0.099368	28219.17621	2804.083101	2473.001444	50.23985823	46.27318366	234.5686157	1769.870224	312.0308155	360.428814
105054	E ARTESIA BLVD	Other	40	Minor Arterial	0.040314	3771.198502	152.0320964	134.9139097	1.423273192	1.267131507	14.42778202	64.39885019	27.50291109	43.01214841
105808	S WILMINGTON AVE	Other	35	Minor Arterial	0.146839	15326.67907	2250.554228	1803.392053	45.25658492	44.93660644	356.9689832	1381.686806	197.4334773	194.3166133
1646502	0	Centroid Connector	25	Tier 1 Centroid Co	0.391939	3396.465613	1331.207336	1299.708779	7.907637019	4.778395259	18.81252446	956.9743915	177.5556061	165.1787824
2674154	S WILMINGTON AVE	Other	35	Minor Arterial	0.239633	13732.89453	3290.854715	2610.997136	62.92266276	62.37766711	554.5572494	2010.299013	291.4367016	286.7359188
2674155	GLENN CURTISS ST	Other	30	Minor Collector	0.117765	38.666667	4.553580039	4.553580039	0	0	0	0	0	0
2683364	KEMP AVE	Other	30	Minor Collector	0.132859	71.333333	9.477275289	9.477275289	0	0	0	0	0	0
2674151	E TURMONT ST	Other	30	Minor Collector	0.147616	71.333333	10.52994128	10.52994128	0	0	0	0	0	0
2683361	KEMP AVE	Other	30	Minor Collector	0.159698	0	0	0	0	0	0	0	0	0
2732894	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.246918	0	0	0	0	0	0	0	0	0
2732943	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.260301	0	0	0	0	0	0	0	0	0
2732945	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.092288	0	0	0	0	0	0	0	0	0
2674150	KEMP AVE	Other	30	Minor Collector	0.084277	0	0	0	0	0	0	0	0	0
2674152	KEMP AVE	Other	30	Minor Collector	0.101257	71.333333	7.2229993	7.2229993	0	0	0	0	0	0
2674153	S GUNLOCK AVE	Other	30	Minor Collector	0.095283	71.333333	6.796853968	6.796853968	0	0	0	0	0	0
2674157	HARMON AVE	Other	30	Minor Collector	0.237162	38.666667	9.170264079	9.170264079	0	0	0	0	0	0
2674158	CHARLES WILLARD ST	Other	30	Minor Collector	0.208036	38.666667	8.044058736	8.044058736	0	0	0	0	0	0
2732949	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.205659	0	0	0	0	0	0	0	0	0
2674159	BISHOP AVE	Other	30	Minor Collector	0.097234	38.666667	3.759714699	3.759714699	0	0	0	0	0	0
2732948	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.052915	0	0	0	0	0	0	0	0	0
2674156	HARMON AVE	Other	30	Minor Collector	0.090279	38.666667	3.49078803	3.49078803	0	0	0	0	0	0
2683368	S WILMINGTON AVE	Other	45	Minor Arterial	0.188903	15255.34574	2881.780576	2306.522802	58.22094036	57.80929975	459.2275338	1777.489514	253.9909435	249.9812121
140608	S WILMINGTON AVE	Other	45	Minor Arterial	0.070932	15255.34574	1082.092184	866.0861679	21.86163132	21.70706262	172.4373219	667.4371833	95.37215188	93.86652059
105773	S WILMINGTON AVE	Other	35	Minor Arterial	0.199219	13771.5612	2743.55665	2178.356753	52.31078338	51.857701	461.0314133	1671.262969	242.2860301	238.3780323
2683370	E VICTORIA ST	Other	40	Minor Arterial	0.42674	3241.657969	1383.345122	1056.749767	75.31672609	78.31840714	172.9602218	859.7401226	89.42387951	107.5857645
2683416	MCKINLEY AVE	Other	30	Minor Collector	0.10254	97.345187	9.981775475	9.981727999	8.10066E-06	3.0762E-06	3.62992E-05	0.000862874	0.000149298	0.000155861
2683420	E ALONDRA BLVD	Other	40	Principal Arterial	0.0945	17647.74014	1667.711443	1617.809777	11.69836734	9.989921876	28.21337738	1146.857945	215.6469798	235.4283515
2732950	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.149175	0	0	0	0	0	0	0	0	0
2732953	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.349013	0	0	0	0	0	0	0	0	0
103411	W ALONDRA BLVD	Other	40	Principal Arterial	0.144506	5284.103161	763.5846114	740.1412494	8.258024268	6.303403887	8.881933836	485.9519186	117.5118143	136.6775168
103792	W ALONDRA BLVD	Other	30	Principal Arterial	0.248652	2931.727684	728.9799521	719.0796529	3.200893715	2.006531877	4.692873597	459.4668467	109.3446377	150.2681683

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
103412	E ALONDRA BLVD	Other	40	Principal Arterial	0.609238	7165.748537	4365.646307	4256.937021	36.03286305	32.17891119	40.49751203	2849.64297	637.9052737	684.7046949
2732982	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.575077	0	0	0	0	0	0	0	0	0
103397	S MAIN ST	Other	40	Minor Arterial	0.264706	7603.565117	2012.709308	1653.095781	76.27268702	73.8637838	209.4770556	1245.939292	190.1975433	216.9589464
104075	AVALON BLVD	Other	40	Minor Arterial	0.115106	31033.04311	3572.08946	3323.529383	63.46765286	57.31153098	127.7808935	2400.723547	412.6811988	495.8131243
104077	E ALONDRA BLVD	Other	40	Principal Arterial	0.222997	17647.74014	3935.393108	3817.63732	27.6052997	23.57378422	66.57670387	2706.305621	508.8743868	555.5536095
146124	MCKINLEY AVE	Other	30	Minor Collector	0.258516	97.345187	25.16528836	25.16516867	2.04228E-05	7.75548E-06	9.15147E-05	0.002175412	0.000376399	0.000392944
2732993	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.301976	0	0	0	0	0	0	0	0	0
104076	AVALON BLVD	Other	40	Principal Arterial	0.257575	38584.14379	9938.310836	9367.460088	142.571469	126.1276425	302.1516368	6835.266171	1150.68193	1331.113145
2683418	E ALONDRA BLVD	Other	40	Principal Arterial	0.019269	17647.74014	340.0543047	329.8791173	2.385352807	2.036992641	5.752841997	233.8497963	43.97144607	48.00496196
2676603	MCKINLEY AVE	Other	30	Minor Collector	0.130237	0	0	0	0	0	0	0	0	0
2676605	MCKINLEY AVE	Other	30	Minor Collector	0.130067	0	0	0	0	0	0	0	0	0
2683517	MCKINLEY AVE	Other	30	Minor Collector	0.050402	97.345187	4.906392115	4.906368779	3.98176E-06	1.51206E-06	1.78423E-05	0.000424133	7.33853E-05	7.6611E-05
2744551	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.193944	0	0	0	0	0	0	0	0	0
2676604	0	0	30	Minor Collector	0.082042	97.345187	7.986393832	7.986355846	6.48132E-06	2.46126E-06	2.90429E-05	0.000690383	0.000119453	0.000124704
2676602	MCKINLEY AVE	Other	30	Minor Collector	0.033546	97.345187	3.265541643	3.265526111	2.65013E-06	1.00638E-06	1.18753E-05	0.00028229	4.8843E-05	5.09899E-05
2685428	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.081485	28997.23947	2362.840058	2218.97348	29.88387507	28.36939681	85.6133065	1549.957355	294.2404065	374.7757186
2685436	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.099648	28997.23947	2889.516919	2713.582492	36.54498843	34.6929331	104.6965057	1895.442726	359.8265696	458.3131964
106458	S ALAMEDA ST	Other	45	Principal Arterial	0.770006	17349.15249	13358.95151	9818.808521	404.3744336	403.4799161	2732.288642	7768.702212	1039.901103	1010.205208
106169	S ALAMEDA ST	Other	45	Principal Arterial	0.267768	24897.46891	6666.745454	4095.696457	109.7509573	113.4365225	2347.861517	3163.614131	455.7292608	472.6043131
106390	S HARBOR VIEW AVE	Other	30	Major Collector	0.255563	1592.163735	406.8981406	285.6304991	15.64288652	16.56986667	89.05488832	245.309392	21.67518304	18.64592453
106649	S SANTA FE AVE	Other	40	Minor Arterial	0.222696	19817.68755	4413.319746	3937.297793	84.46418988	77.57689362	313.9808693	2913.027586	472.5570124	478.3719782
140587	S PROSPECT AVE	Other	30	Minor Collector	0.257993	0	0	0	0	0	0	0	0	0
1633394	METRO BLUE LINE	0	25	Metro Blue Line	2.096882	0	0	0	0	0	0	0	0	0
2666011	I 405 HOV	HOV-Interstate	65	Freeways	1.655005	16595.18295	27465.11075	27465.11075	0	0	0	24511.06585	88.65791613	2848.836935
2734360	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.189448	0	0	0	0	0	0	0	0	0
2734361	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.104823	0	0	0	0	0	0	0	0	0
106719	S SANTA FE AVE	Other	40	Minor Arterial	0.124101	31657.99452	3928.788778	3610.686057	55.33362521	49.5110293	213.2580658	2621.784232	453.6243536	523.8601795
127111	0	Ramp-Other	30	Ramps	0.148022	12312.36045	1822.500218	1514.726004	52.76692771	36.55622511	218.4510617	1036.775684	187.4804418	290.4698777
140575	S MCHELEN AVE	Other	25	Minor Collector	0.160387	732.102891	117.4197864	109.7553431	0.907848801	0.882160898	5.874433542	74.43579339	10.38631857	9.749928296
1648156	0	Centroid Connector	25	Tier 1 Centroid Co	0.328065	2520.131054	826.7667942	760.7682401	15.38394155	14.68457389	35.93003869	581.6932775	91.4742278	87.60073449
1648157	0	Centroid Connector	25	Tier 1 Centroid Co	0.532067	293.24197	156.0243753	156.0243753	0	0	0	125.1927005	17.09102159	13.74065369
2686378	E CARSON ST	Other	35	Minor Arterial	0.119984	9861.438701	1183.214861	1072.601387	22.39603454	20.22491806	67.99252136	801.3558349	118.53329	124.2360597
127113	SAN DIEGO FWY	Interstate	65	Freeways	0.27379	142189.2163	38929.98554	32810.18318	1077.805157	903.7331571	4138.264046	19925.41425	4509.416674	8367.138552
140570	E CARSON ST	Other	35	Minor Arterial	0.102555	10789.40602	1106.507534	1039.993912	17.67453032	15.22817782	33.6109142	768.3503861	121.2123449	126.091461
140577	E 218TH ST	Other	25	Minor Collector	0.252922	732.102891	185.1649274	173.078497	1.431630584	1.39112209	9.263677731	117.3813946	16.37868696	15.37513243
2670462	0	Ramp-Other	30	Ramps	0.085684	12312.36045	1054.972293	876.8141418	30.54465845	21.16093278	126.4525595	600.147868	108.5249097	168.1413641
2671605	SAN DIEGO FWY	Interstate	65	Freeways	0.20058	130465.6491	26168.79989	22415.72539	670.8996508	575.151306	2507.023544	13307.25885	3202.65755	5899.791585
2671606	I 405 HOV	HOV-Interstate	65	Freeways	0.286312	19255.75889	5513.15484	5513.15484	0	0	0	5204.471205	0.007609887	307.1490272
2734363	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13601	0	0	0	0	0	0	0	0	0
92915	0	Ramp-Other	30	Ramps	0.124135	6399.756306	794.433749	407.9548501	50.22068509	35.38210744	300.8761064	276.480042	49.91855266	81.55625531
2676301	ALAMEDA-CARSON CONNECTOR	0	30	Minor Collector	0.117482	2541.859852	298.6227791	277.9793352	4.340932174	4.268124584	12.03438721	213.4398459	31.79263932	32.74684997
2686372	E 218TH ST	Other	25	Minor Collector	0.058327	732.102891	42.70136532	39.91408218	0.330152051	0.320810282	2.136320806	27.06962859	3.777131584	3.545699263
2676300	E CARSON ST	Other	35	Minor Arterial	0.034596	11332.17558	392.0479463	367.9569331	6.158168609	5.327372792	12.60547187	275.2520846	43.13024918	44.63890328
140572	S MCHELEN AVE	Other	25	Minor Collector	0.097542	732.102891	71.41078019	66.74952259	0.552123225	0.536500703	3.57263367	45.26935574	6.316610985	5.929579741
140576	E 221ST ST	Other	25	Minor Collector	0.136003	0	0	0	0	0	0	0	0	0
2734364	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.066897	0	0	0	0	0	0	0	0	0
2686374	E 221ST ST	Other	25	Minor Collector	0.057859	0	0	0	0	0	0	0	0	0
106391	E CARSON ST	Other	35	Minor Arterial	0.078685	9861.438701	775.9473042	703.4074555	14.68722478	13.26341577	44.58920809	525.525769	77.73363052	81.47348278
98052	S SANTA FE AVE	Other	35	Major Collector	0.099042	17401.88311	1723.517307	1576.023343	22.1499575	18.34895116	106.9950555	1087.814594	199.9313302	279.1655551
106648	S SANTA FE AVE	Other	40	Minor Arterial	0.394915	17264.16727	6817.878616	5944.195843	138.4085399	129.0488226	606.2254101	4549.224523	700.0759738	694.8953473
1648160	0	Centroid Connector	25	Tier 1 Centroid Co	0.214033	3266.761381	699.1947387	645.6403543	11.74773115	10.78642355	31.02022969	485.5460516	83.59269167	76.50161079
2686390	E CARSON ST	Other	35	Minor Arterial	0.141728	92	13.038976	13.038976	0	0	0	0	0	0
1656196	0	Centroid Connector	25	Tier 1 Centroid Co	0.19489	7482.046249	1458.175993	1308.759107	22.80430673	20.93835854	105.6742217	972.8098757	167.2314285	168.7178021
140585	E CARSON ST	Other	35	Minor Arterial	0.073279	9861.438701	722.6363666	655.0803194	13.67814888	12.35216171	41.52573654	489.4198745	72.39299372	75.87590195
106394	E MONROE ST	Other	25	Major Collector	0.195329	0	0	0	0	0	0	0	0	0
106399	E DOMINGUEZ ST	Other	35	Major Collector	0.195487	1882.024119	367.911249	283.9813589	7.088913608	6.057968342	70.78300814	215.8261773	31.7162648	36.43891696
130617	S ALAMEDA ST	Other	45	Principal Arterial	0.506255	20680.19296	10469.45109	7192.800744	244.8028129	244.4314713	2787.416057	5683.147214	749.6074728	752.9584875
1648161	0	Centroid Connector	25	Tier 1 Centroid Co	0.343767	4428.048277	1522.216872	743.3046343	44.42525967	48.07346496	686.4135131	561.950648	89.53336539	91.82062154
1648162	0	Centroid Connector	25	Tier 1 Centroid Co	0.554249	3674.171526	2036.405894	1891.958518	42.15074453	37.98766002	64.30897163	1463.072329	216.814538	212.0716514
1648163	0	Centroid Connector	25	Tier 1 Centroid Co	0.566497	0	0	0	0	0	0	0	0	0
2676299	ALAMEDA-DEL AMO CONNECTOR	0	30	Minor Collector	0.172415	11764.17473	2028.320186	1510.878378	58.64988365	56.37250616	402.419418	1213.763494	147.3132726	147.3878012
2686400	S SANTA FE AVE	Other	40	Minor Arterial	0.183529	22332.9865	4098.750678	3421.89254	96.08808279	95.81701266	484.9530428	2533.058966	405.6717526	422.7196045
2734357	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.14183	0	0	0	0	0	0	0	0	0
2734358	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.268251	0	0	0	0	0	0	0	0	0
2734367	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.088992	0	0	0	0	0	0	0	0	0
106250	S ALAMEDA ST	Other	45	Principal Arterial	0.219775	20910.98665	4595.712091	3130.428472	65.67339165	64.64881972	1334.961407	2397.25746	358.4741405	371.6200217

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
106251	E MONROE ST	Other	25	Major Collector	0.159434	1540.949862	245.6798003	170.062585	9.733531794	10.33409831	55.54958517	146.8253193	12.53063392	10.70663163
106393	S HARBOR VIEW AVE	Other	30	Major Collector	0.258528	51.213873	13.24022016	13.18170209	0.041098713	0.00499321	0.012426148	10.07286307	1.607778652	1.50106062
130618	E DOMINGUEZ ST	Other	35	Major Collector	0.076895	6361.286269	489.1511077	281.8899969	12.73785191	13.13763286	181.385626	213.5905247	32.98096624	35.31850588
106346	S ALAMEDA ST	Other	45	Principal Arterial	0.050756	26939.05148	1367.318497	902.0251822	32.93510804	33.17593816	399.1822686	706.8090162	96.29238807	98.21319387
2734366	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.112654	0	0	0	0	0	0	0	0	0
106756	S ADRIATIC AVE	Other	40	Minor Arterial	0.129941	19817.68755	2575.130137	2297.375851	49.28405224	45.26538031	183.2048539	1699.723918	275.7325266	279.1255039
140588	E DOMINGUEZ ST	Other	35	Major Collector	0.238162	1882.024119	448.2266282	345.9747625	8.636430262	7.380428654	86.23500685	262.9412392	38.63995589	44.39356756
140589	S PROSPECT AVE	Other	30	Minor Collector	0.257011	0	0	0	0	0	0	0	0	0
1648164	0	Centroid Connector	25	Tier 1 Centroid Co	0.089935	22918.80208	2061.202465	1659.953033	55.07845335	55.10148003	291.0694989	1235.087826	205.6009503	219.264256
2686398	S ADRIATIC AVE	Other	40	Minor Arterial	0.137946	19817.68755	2733.770726	2438.90542	52.32019047	48.05394874	194.4911673	1804.43521	292.7189964	296.3209977
2686394	E MONROE ST	Other	25	Major Collector	0.081789	0	0	0	0	0	0	0	0	0
2686396	S SANTA FE AVE	Other	40	Minor Arterial	0.049307	19817.68755	977.1507198	871.7549586	18.70117025	17.17625774	69.51833316	644.9718504	104.6285906	105.916079
140586	E MONROE ST	Other	25	Major Collector	0.076038	0	0	0	0	0	0	0	0	0
2734365	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.191816	0	0	0	0	0	0	0	0	0
106812	S SANTA FE AVE	Other	40	Minor Arterial	0.097846	22332.9865	2185.193397	1824.33565	51.22805959	51.08354222	258.5461449	1350.466071	216.2783991	225.3672304
2686402	S SANTA FE AVE	Other	40	Minor Arterial	0.252429	22332.9865	5637.493448	4706.530914	132.1612315	131.7883969	667.0129061	3484.013653	557.9680314	581.4159454
2734356	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158109	0	0	0	0	0	0	0	0	0
2734359	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.314311	0	0	0	0	0	0	0	0	0
								3040274.099	67879.27239	57991.84372	294669.6024	2051254.397	377797.1119	602755.0783

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
16991	SAN DIEGO FWY	Interstate	65	Freeways	0.22748	146040.5418	33221.30245	30028.10603	580.1950949	503.6935031	2109.307821	22789.64429	2889.066713	4349.395035
17109	SAN DIEGO FWY	Interstate	65	Freeways	0.21305	140791.4286	29995.61387	27083.08333	528.4216449	459.5702061	1924.538682	20645.35462	2595.433855	3842.29486
98209	S ALAMEDA ST	Other	45	Principal Arterial	0.260329	20998.90305	5466.623433	4212.972417	102.2972594	106.8249956	1044.528761	3296.115218	465.0777887	448.1348037
105700	E DOMINGUEZ ST	Other	35	Major Collector	0.714489	0	0	0	0	0	0	0	0	0
127099	S ALAMEDA ST	Other	45	Principal Arterial	1.084317	36978.74743	40096.68447	30688.75251	1020.310099	858.1576257	7529.464238	23746.36174	3396.167091	3531.043243
127105	0	Ramp-Other	30	Ramps	0.161127	1956.320573	315.216065	252.2373813	13.01715337	8.616826564	41.34470369	199.0740046	24.6010563	28.56232041
140484	S MAIN ST	Other	40	Principal Arterial	0.380748	9967.788858	3795.215672	3670.472363	33.31407855	26.86571976	64.5635107	2766.199701	441.8701683	360.6158608
140494	AVALON BLVD	Other	40	Principal Arterial	0.280822	29201.0287	8200.291282	7868.14475	85.1458805	69.13861398	177.8620369	6102.047589	915.6156558	810.1367444
140497	CATSKILL AVE	Other	30	Minor Collector	0.220085	3191.035312	702.2990066	691.3766903	3.893428658	2.663095406	4.365792252	505.3400173	93.67301589	76.66426056
140506	CAROLDALE AVE	Other	35	Major Collector	0.381099	545.957435	208.0638325	190.7992502	0.702244268	0.370190041	16.19214803	137.1159903	32.58954188	21.09371761
1645249	0	Centroid Connector	25	Tier 1 Centroid Co	0.376581	4451.077342	1676.191157	898.2951184	61.52017728	71.9922596	644.3836013	788.2220726	60.10008129	49.97296525
1645250	0	Centroid Connector	25	Tier 1 Centroid Co	0.473257	5470.303484	2588.859416	1814.694048	150.503283	160.2844276	463.3776574	1588.357344	125.1316255	101.2050795
1645251	0	Centroid Connector	25	Tier 1 Centroid Co	0.585959	3252.393194	1905.769064	1547.232546	81.02421552	85.9465764	191.5657254	1275.392898	140.1984061	131.6412425
1645252	0	Centroid Connector	25	Tier 1 Centroid Co	0.485533	3128.511175	1518.995416	1364.977455	42.69001223	44.25844308	67.06950638	1115.19021	129.5575229	120.2297226
2665865	SR 91 HOV	HOV-Other	65	HOV	3.015281	12867.14985	38798.07246	38798.07246	0	0	0	0	13750.95868	25018.97116
2666003	I 405 HOV	HOV-Interstate	65	HOV	1.97643	20533.68432	40583.3897	40583.3897	0	0	0	0	15397.01913	25175.82962
2671107	0	Ramp-Other	30	Ramps	0.12493	1956.320573	244.4031292	195.5725363	10.09286445	6.681066132	32.05666234	154.3522526	19.07445657	22.14582714
2671108	0	Ramp-Other	30	Ramps	0.17896	7315.045499	1309.100543	979.1789313	52.00990121	42.75757991	235.1541301	663.4457754	144.9646818	170.7684743
2671604	I 405 HOV	HOV-Interstate	65	HOV	0.652351	19100.9431	12460.51933	12460.51933	0	0	0	0	4657.059741	7796.936079
2674144	E CARSON ST	Other	35	Minor Arterial	0.374498	13078.56521	4897.896513	4673.576601	66.765924	59.90581571	97.64817242	3482.506829	577.4511853	560.1902051
2680637	S FIGUEROA ST	Other	40	Minor Arterial	0.346613	3692.336821	1279.811943	1254.112712	9.844981792	8.214592921	7.639656233	927.1272058	150.7169627	139.5275651
2680673	DOLORES ST	Other	35	Major Collector	0.319802	437.19888	139.8170762	131.963403	2.176977281	3.246962818	2.429733112	113.9495521	10.62972886	7.384122006
2680744	WILMINGTON AVE	Other	45	Minor Arterial	0.576115	45084.78995	25974.02376	24356.08248	366.1001062	295.4382833	956.4028944	18170.7613	2835.699178	3349.622003
2681322	HIGH SPEED RAIL	0	25	Metro Blue Line	13.982459	0	0	0	0	0	0	0	0	0
2731316	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.883277	0	0	0	0	0	0	0	0	0
2731325	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.36973	0	0	0	0	0	0	0	0	0
2731327	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.311649	0	0	0	0	0	0	0	0	0
2731330	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.671642	0	0	0	0	0	0	0	0	0
2731331	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.38912	0	0	0	0	0	0	0	0	0
2731350	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24311	0	0	0	0	0	0	0	0	0
2731375	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.62745	0	0	0	0	0	0	0	0	0
2751964	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.099233	0	0	0	0	0	0	0	0	0
2762157	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.098016	30526.07708	2992.043971	2865.500018	31.24001698	29.25755909	66.04637749	2063.118469	366.1886414	436.1929069
104092	E LOMITA BLVD	Other	40	Principal Arterial	0.312573	37023.79587	11572.63895	11121.62429	115.6166389	93.30734963	242.0906689	8258.1203	1298.25454	1565.24945
2680681	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.297512	40842.7984	12151.22264	11573.05377	144.9616263	124.1500079	309.0572298	8632.737798	1385.346203	1554.969771
2731672	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.19387	0	0	0	0	0	0	0	0	0
2751962	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.30226	0	0	0	0	0	0	0	0	0
103322	S MAIN ST	Other	40	Principal Arterial	0.64411	12531.51283	8071.67273	7868.587744	64.85266623	51.34190118	86.89041774	5696.948967	1097.86432	947.5288958
103324	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.507583	28968.8144	14704.07772	14038.10748	147.2089968	126.8060027	391.9552434	9790.922368	1919.514831	2324.117196
106383	FIGUEROA ST	Other	40	Minor Arterial	0.437034	12716.32854	5557.467926	5476.266814	31.75469946	23.90883696	25.5375757	4301.117157	588.5178737	574.5405094
1645446	0	Centroid Connector	25	Tier 1 Centroid Co	0.458134	4944.680217	2265.326127	2207.863811	19.022229	18.4852987	19.95478779	1794.433512	227.9420602	185.4882393
1645447	0	Centroid Connector	25	Tier 1 Centroid Co	0.315395	1478.719473	466.3807282	460.5227669	2.033142774	2.2248121	1.600006404	363.1130634	61.51750616	35.89219764
1645448	0	Centroid Connector	25	Tier 1 Centroid Co	0.444379	3720.270638	1653.210146	1595.837213	13.57314906	13.10008851	30.6996948	1255.506885	188.9533832	151.3769447
1645449	0	Centroid Connector	25	Tier 1 Centroid Co	0.307301	6758.297753	2076.831658	2011.00285	19.99008954	16.96223404	28.87648434	1582.57114	224.2860776	204.145633
1658417	W 234TH ST	Other	35	Major Collector	0.06829	2581.4148	176.2848167	170.4694044	1.967282955	1.655060802	2.193068543	122.6596015	23.10289844	19.83555123
2744306	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.32345	0	0	0	0	0	0	0	0	0
2759868	W LOMITA BLVD	Other	40	Principal Arterial	0.114922	40528.01461	4657.560495	4506.7645	40.23650776	32.64055338	77.91893464	3416.819439	505.8592565	577.7267867
106384	W LOMITA BLVD	Other	40	Principal Arterial	0.453256	42663.92507	19337.68002	18693.98957	175.3818509	142.5525941	325.7560041	13858.58463	2238.851812	2575.70335
103347	W LOMITA BLVD	Other	40	Principal Arterial	0.327773	40048.75077	13126.89919	12696.80873	114.7599316	93.0952481	222.235281	9602.512007	1436.060915	1643.158246
2759870	FIGUEROA ST	Other	40	Principal Arterial	0.29637	11533.40843	3418.156257	3362.475017	18.96239394	13.78204136	22.93680485	2438.563094	431.8668799	483.8454733
2759871	FRIGATE AVE	Other	35	Major Collector	0.297408	479.263843	142.536901	142.536901	0	0	0	129.4952551	6.095386477	4.170450968
97009	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.094509	46299.21877	4375.692867	4209.655208	39.50203693	33.43978585	93.09583594	3052.682208	540.7960554	616.1769449
106566	S FIGUEROA ST	Other	40	Minor Arterial	0.175393	580.536475	101.822034	93.84941763	0.450224535	0.261107559	7.261284231	67.2162784	11.65146486	8.901383824
1645240	0	Centroid Connector	25	Tier 1 Centroid Co	0.290351	3586.42258	1041.321383	1019.838243	8.03665901	6.730999632	6.715480661	769.829862	131.7936815	118.2147004
1645459	0	Centroid Connector	25	Tier 1 Centroid Co	0.285446	9219.570967	2631.689654	2534.859017	30.5910423	26.61612739	39.62346774	1915.474156	322.4569963	296.9278644
1657606	0	Ramp-Other	30	Ramps	0.168191	8401.128155	1412.994146	1232.748581	34.42885176	30.3271839	115.489529	650.4444865	233.7437998	348.5602944
1658415	W 234TH PL	Other	35	Minor Collector	0.433618	0	0	0	0	0	0	0	0	0
2670362	0	Ramp-Other	30	Ramps	0.061713	8401.128155	518.4588218	452.3227353	12.63270763	11.12771492	42.375664	238.6624766	85.76577295	127.8944857
2670363	0	Ramp-Other	30	Ramps	0.137381	3678.344471	505.3346418	425.8025428	6.819590642	6.191034925	66.52147341	322.5165018	54.03785468	49.24818619
2674503	W 234TH ST	Other	30	Major Collector	0.212411	71.335201	15.15238138	15.15238011	6.37233E-07	2.12411E-07	4.24822E-07	0.000306934	4.75801E-05	4.07829E-05
2680639	FIGUEROA ST	Other	40	Minor Arterial	0.23064	12716.32854	2932.894014	2890.040999	16.75820161	12.61763194	13.47718132	2269.868388	310.5839875	303.2075836
2731351	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.191534	0	0	0	0	0	0	0	0	0
2731693	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.407365	0	0	0	0	0	0	0	0	0
91693	0	Ramp-Other	30	Ramps	0.161851	3678.344471	595.343731	501.6455504	8.03428105	7.293768378	78.37013119	379.9624281	63.66295789	58.02016424
1657608	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.107665	55070.59024	5929.175099	5675.978261	62.40097144	53.14128887	137.6545771	4053.226763	733.9736151	888.7778828
2680635	S FIGUEROA ST	Other	40	Minor Arterial	0.215624	580.536475	125.1775969	115.3762512	0.55349538	0.320999449	8.92685085	82.63410065	14.32403493	10.94315044

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
97003	W SEPULVEDA BLVD	Other	40	Principal Arterial	0.049963	47462.27743	2371.357767	2291.624919	21.60988989	18.30419686	39.81876125	1662.576942	294.4188228	334.6291548
2670360	0	Ramp-Other	30	Ramps	0.143038	12209.07851	1746.362172	1692.305112	14.85864927	12.23196537	26.96644607	1273.649916	179.2589281	239.3962676
91726	0	Ramp-Other	30	Ramps	0.115158	3104.226212	357.4764821	344.8338563	2.432832169	1.898300171	8.311493527	252.2683403	39.49265222	53.07286354
2670361	0	Ramp-Other	30	Ramps	0.115966	9104.852303	1055.853302	1024.75865	9.59653405	8.005270284	13.49284739	778.5549724	105.5618457	140.6418323
2674501	S FIGUEROA ST	Other	40	Minor Arterial	0.033498	3692.336821	123.6858988	121.2022273	0.951456524	0.793889536	0.738325465	89.60110308	14.56586111	13.48447512
2674502	W 234TH ST	Other	30	Major Collector	0.064152	3557.48827	228.2199875	220.9242142	1.80709416	1.495050235	3.993628924	164.2224366	26.96439129	25.16121033
2674500	CAROLDALE AVE	Other	35	Minor Collector	0.05101	3586.42258	182.9434158	179.1691738	1.411911707	1.182528358	1.179801924	135.246723	23.15402975	20.7684212
2731694	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.149615	0	0	0	0	0	0	0	0	0
1645241	0	Centroid Connector	25	Tier 1 Centroid Co	0.267139	2510.0796	670.5401543	647.7912408	7.695679137	6.474319362	8.578914936	479.8233551	90.3745951	77.59329038
2674504	W 234TH ST	Other	30	Major Collector	0.221099	71.335201	15.77214161	15.77214028	6.63297E-07	2.21099E-07	4.42198E-07	0.000319488	4.95262E-05	4.2451E-05
2731352	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158546	0	0	0	0	0	0	0	0	0
1658416	MEHDEN AVE	Other	35	Minor Collector	0.049629	2510.0796	124.5727405	120.3464544	1.429700867	1.202797029	1.593788138	89.14143307	16.78976406	14.41525726
103346	E LOMITA BLVD	Other	40	Principal Arterial	0.285637	38555.58824	11012.90256	10617.55024	100.1787172	80.69584958	214.4777498	7853.491745	1264.421492	1494.971602
2759874	N WILMINGTON BLVD	Other	35	Minor Arterial	0.266038	6630.854592	1764.059294	1701.979812	17.74411447	15.87357628	28.4617913	1300.204017	186.4527382	152.8041258
104087	AVALON BLVD	Other	40	Principal Arterial	0.088825	20150.09774	1789.832431	1700.414694	22.76152545	19.09917744	47.55703397	1347.362369	183.1058297	157.1853043
140489	DOLORES ST	Other	35	Major Collector	0.196568	508.580392	99.97063049	95.14287304	1.338151599	1.995792252	1.493813602	70.04645818	6.534941491	4.539622771
140490	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.256589	29016.66513	7445.35709	7133.138336	70.9584884	60.63530096	180.6249639	5198.058237	902.4936626	1012.486964
140491	PANAMA AVE	Other	30	Minor Collector	0.04127	8343.154409	344.3219825	329.0171062	1.565349062	0.985586988	12.75394019	248.8999167	46.37557018	33.74161933
140495	E 231ST ST	Other	30	Minor Collector	0.394053	0.018107	0.007135118	0.006756827	0.000152104	0.000117034	0.000109153	0.005736624	0.000564284	0.000456313
140502	S MAIN ST	Other	40	Principal Arterial	0.372401	7386.377792	2750.694476	2660.398638	21.8557045	17.25132848	51.18880474	2036.667506	306.1979831	244.5425533
153311	E 238TH PL	Other	35	Minor Collector	0.285245	0.008362	0.002385219	0.002260281	9.69833E-06	5.13441E-06	0.000110105	0.001675529	0.000344291	0.000240462
1645246	0	Centroid Connector	25	Tier 1 Centroid Co	0.303456	9050.957433	2746.567339	2693.13066	14.24768191	9.462021783	29.7269749	1990.831443	363.8633081	338.4359093
1645471	0	Centroid Connector	25	Tier 1 Centroid Co	0.468619	9363.6035	4387.962509	4186.75348	47.53041593	46.11271131	107.5659013	3165.122071	485.7141016	535.9173076
2731697	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.264273	0	0	0	0	0	0	0	0	0
2731698	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.252453	0	0	0	0	0	0	0	0	0
2731699	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.222021	0	0	0	0	0	0	0	0	0
2731703	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.229697	0	0	0	0	0	0	0	0	0
140487	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.079885	30546.97693	2440.245252	2346.227613	22.46825179	18.92292026	52.62646703	1715.01079	297.1065463	327.8526184
1645473	0	Centroid Connector	25	Tier 1 Centroid Co	0.356756	9743.194728	3475.943178	3345.545337	35.22104862	34.53927185	60.63752121	2568.013097	379.6002947	397.9319452
2744305	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.319914	0	0	0	0	0	0	0	0	0
103323	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.186038	37992.86339	7068.116319	6787.930073	68.73332898	59.58144202	151.8714754	5007.089885	835.9807287	943.5571927
2680669	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.129753	30546.97693	3963.561898	3810.853996	36.49399856	30.7355032	85.47839991	2785.601741	482.5745221	532.5137484
2680667	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.012607	30546.97693	385.1057382	370.2684048	3.545812735	2.986308515	8.305212115	270.6533271	46.8876789	51.73985053
1658420	CATSKILL AVE	Other	30	Minor Collector	0.311341	71.333333	22.20899123	22.20899123	0	0	0	0	0	0
1658422	0	Centroid Connector	25	Tier 1 Centroid Co	0.124326	8343.210949	1037.278044	991.1717161	4.715661434	2.969104423	38.42156245	749.8167588	139.7075319	101.6474254
2674506	E 236TH ST	Other	30	Minor Collector	0.086907	71.381512	6.203553063	6.203351874	2.68543E-05	1.28622E-05	0.000161473	0.002988732	0.000584536	0.000412461
2680671	DOLORES ST	Other	35	Major Collector	0.166793	437.19888	72.92171279	68.82562297	1.135404318	1.693456168	1.267229332	59.43048402	5.54394396	3.851194995
2751963	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.137632	0	0	0	0	0	0	0	0	0
2674505	DOLORES ST	Other	35	Major Collector	0.063478	437.19888	27.7525105	26.1936226	0.432111631	0.644494737	0.482281532	22.61802512	2.109911535	1.465685945
2731702	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.045301	0	0	0	0	0	0	0	0	0
140493	PANAMA AVE	Other	30	Minor Collector	0.156023	8343.16277	1301.725285	1243.864477	5.917874379	3.726056566	48.21687657	940.9776962	175.3250147	127.5617666
2680675	E 236TH ST	Other	30	Minor Collector	0.098392	0.048178	0.00474033	0.004512552	3.04031E-05	1.4562E-05	0.000182812	0.003383701	0.000661785	0.000466968
2731700	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13903	0	0	0	0	0	0	0	0	0
2731701	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.069781	0	0	0	0	0	0	0	0	0
1658421	E 236TH ST	Other	30	Minor Collector	0.068062	0.048178	0.003279091	0.003121528	2.10312E-05	1.00732E-05	0.000126459	0.002340652	0.000457785	0.000323022
1645242	0	Centroid Connector	25	Tier 1 Centroid Co	0.264567	3119.683872	825.365403	812.2358	4.680238381	3.201262817	5.248101815	607.4718617	112.6051544	92.15878409
104088	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.209739	40842.7984	8566.327693	8158.732169	102.1945553	87.52285122	217.878117	6085.878193	976.6366642	1096.217312
2744304	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.277607	0	0	0	0	0	0	0	0	0
2680677	AVALON BLVD	Other	35	Principal Arterial	0.262291	9353.232983	2453.268832	2332.825368	17.16851288	13.16014273	90.11480898	1777.90571	288.2926654	245.8185726
2744303	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.12804	0	0	0	0	0	0	0	0	0
2680679	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.006677	40842.7984	272.7073649	259.7316412	3.253343659	2.786272833	6.936107195	193.7427407	31.09103699	34.89786348
2680682	AVALON BLVD	Other	40	Principal Arterial	0.204546	20150.08937	4121.620181	3915.709317	52.41518025	43.98153697	109.5141467	3102.701676	421.6554248	361.9657745
153310	AVALON BLVD	Other	40	Principal Arterial	0.179513	20150.08937	3617.202994	3436.492166	46.00044123	38.59893445	96.11145174	2722.983025	370.0518723	317.6672341
2680684	E 231ST ST	Other	30	Minor Collector	0.046755	0.018107	0.000846593	0.000801708	1.80474E-05	1.38862E-05	1.29511E-05	0.000680659	6.69532E-05	5.41423E-05
104414	WILMINGTON AVE	Other	45	Minor Arterial	0.2044	39893.28641	8154.187743	7867.850909	72.25268802	57.48429399	156.599852	5817.265025	940.2579602	1110.327923
104510	E LOMITA BLVD	Other	25	Principal Arterial	1.176717	2407.794419	2833.292625	2685.541234	42.29073476	34.5874946	70.87316245	1971.965859	357.7465402	355.8288339
105791	ALAMEDA ST	Other	45	Principal Arterial	0.653524	28162.25342	18404.7085	13737.24834	338.6224431	275.7219677	4053.11575	10396.96479	1633.0041	1698.130117
1645480	0	Centroid Connector	25	Tier 1 Centroid Co	0.55505	16762.64133	9304.104072	7340.670256	404.9516828	389.2341643	1169.247969	6014.765122	679.6732262	646.2319083
2680748	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.400794	24897.81969	9978.896745	9750.238503	55.55382348	42.92317331	130.1812454	6845.653933	1297.916946	1606.667625
2731318	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.307885	0	0	0	0	0	0	0	0	0
2731319	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.867158	0	0	0	0	0	0	0	0	0
2680726	EUBANK AVE	Other	35	Major Collector	0.261465	944.622974	246.9858459	237.9654969	1.683403706	1.450995834	5.885949476	181.5903523	30.47405088	25.90109418
104413	E LOMITA BLVD	Other	35	Principal Arterial	0.096065	3352.417393	322.0499769	306.6736553	4.071037479	3.356770283	7.948513781	227.705858	40.40225379	38.56554335
1645484	0	Centroid Connector	25	Tier 1 Centroid Co	0.110303	4332.661986	477.905615	472.4987358	1.445094825	0.724057681	3.237726717	333.3021638	69.94459922	69.25197271
1645487	0	Centroid Connector	25	Tier 1 Centroid Co	0.640365	18656.58615	11947.02479	10523.50374	394.8073463	344.8366082	683.8770941	8501.602452	1098.991069	922.9102219
2680742	WILMINGTON AVE	Other	45	Minor Arterial	0.447335	39893.28641	17845.66328	17219.00727	158.1269873	125.8059523	342.7230665	12731.24389	2057.780306	2429.98308

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2680746	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.548416	24897.81969	13654.36268	13341.48415	76.01562313	58.73280292	178.1301065	9367.07173	1775.970748	2198.441674
104610	WILMINGTON AVE	Other	45	Minor Arterial	0.363638	45084.78995	16394.54285	15373.31456	231.0787089	186.4776762	603.6718983	11469.20198	1789.864832	2114.247756
2680756	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.407353	24897.81969	10142.20154	9909.801307	56.46296266	43.6256117	132.3116635	6957.683165	1319.157377	1632.960765
2731320	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.651086	0	0	0	0	0	0	0	0	0
2731317	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.33313	0	0	0	0	0	0	0	0	0
98172	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.200457	30526.07708	6119.165834	5860.365013	63.89038611	59.83597089	135.0744643	4219.377847	748.9091218	892.0780438
2676237	SEPULVEDA-ALAMEDA CONNECTOR	0	30	Minor Collector	0.205237	5638.885018	1157.307844	1007.354005	37.52788181	39.99261748	72.43334006	814.5265527	102.177263	90.65018931
2762158	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.063151	30526.07708	1927.752294	1846.22094	20.12771703	18.85043375	42.55320341	1329.252311	235.9326936	281.0359356
103410	S MAIN ST	Other	40	Minor Arterial	0.251568	10064.65522	2531.945185	2246.968159	70.58434341	74.26214028	140.1305427	1679.967729	279.157975	252.8745033
103422	E GARDENA BLVD	Other	40	Minor Arterial	0.64174	1416.666174	909.1313505	869.7991508	13.71303402	15.95555595	9.663609703	667.8070078	113.3861945	88.60594858
103729	S BROADWAY	Other	40	Principal Arterial	0.250879	9260.890823	2323.363029	2228.148623	34.16679079	26.72542637	34.32218825	1708.095868	269.666878	250.3858775
105047	S CENTRAL AVE	Other	40	Principal Arterial	0.198006	17624.68267	3489.792916	3305.962088	50.57216458	44.32733829	88.93132462	2364.829311	444.6766181	466.689257
1646199	0	Centroid Connector	25	Tier 1 Centroid Co	0.655544	9836.972832	6448.568518	6064.303959	119.9174669	118.7310666	145.6160254	4574.102125	749.1472522	741.0545839
1646201	0	Centroid Connector	25	Tier 1 Centroid Co	0.312645	5364.471091	1677.175064	1608.648206	20.41248231	18.1477973	29.96657898	1193.71253	226.5489243	188.3867512
2676599	AVALON BLVD	Other	40	Principal Arterial	0.222959	39030.50997	8702.203473	8342.810353	98.78171472	91.38314115	169.2282635	6319.183148	972.1220149	986.1782033
2732668	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.391113	0	0	0	0	0	0	0	0	0
2744552	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.443655	0	0	0	0	0	0	0	0	0
2768555	I 405 HOV	HOV-Interstate	65	HOV	1.452795	15487.14532	22499.64728	22499.64728	0	0	0	0	8581.578255	13889.98166
12798	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.245106	21992.85398	5390.580467	4930.654362	74.12871424	54.7720657	331.0253256	3242.365439	684.4452754	1003.843648
13455	SAN DIEGO FWY	Interstate	65	Freeways	0.897504	131337.0165	117875.4977	105309.7605	2304.234981	1980.980618	8280.5216	78925.65843	10218.34701	16165.75502
17813	GARDENA FWY	State Route-Limited Access	65	Freeways	0.37221	107893.4321	40159.01438	36357.13643	649.9153402	563.6862765	2588.276329	27596.71533	3668.739763	5091.681337
17893	SAN DIEGO FWY	Interstate	65	Freeways	0.246926	126996.08	31358.63404	27861.54779	639.2333718	555.2987126	2302.554163	21066.03354	2665.577147	4127.632461
18023	GARDENA FWY	State Route-Limited Access	65	Freeways	0.556235	108008.1602	60077.91899	53895.25165	1015.673719	881.221696	4285.771929	41245.15974	5382.295935	7265.200207
18057	SAN DIEGO FWY	Interstate	65	Freeways	0.927695	133776.0246	124103.3491	110903.1335	2424.002701	2100.142441	8676.070467	81681.88816	11354.82743	17866.41793
93128	0	Ramp-Other	30	Ramps	0.394618	5335.175213	2105.356172	1920.63932	38.8105777	35.89774203	110.0085328	1591.46371	151.5720722	177.6035371
93163	0	Ramp-Other	30	Ramps	0.325105	5181.98961	1684.690732	1525.153511	29.15805495	29.76297653	100.6161899	1264.931534	121.6322024	138.5897748
98384	E ARTESIA BLVD	Other	40	Minor Arterial	0.790496	516.831234	408.5530232	392.0492042	5.965075702	4.760008817	5.778734451	178.3230465	101.2791941	112.4469635
98457	E ARTESIA BLVD	Other	45	Minor Arterial	0.692127	2933.891198	2030.625313	1968.411269	22.20277941	20.04512609	19.96613917	1170.608674	376.7627647	421.0398281
104013	E UNIVERSITY DR	Other	45	Minor Arterial	0.629985	2121.185965	1336.31534	1269.7274	20.4514582	18.11578314	28.02069899	883.3369812	166.1837469	175.2677407
104057	E WALNUT ST	Other	40	Minor Arterial	0.754678	3001.795339	2265.388903	2111.421241	44.86850582	43.55324621	65.54590947	1550.790359	270.6572093	289.9736742
104058	AVALON BLVD	Other	40	Principal Arterial	0.124587	18623.46696	2320.241878	2214.045215	28.18477805	25.7866668	52.22521825	1635.341396	259.0346447	268.6300328
104081	E DEL AMO BLVD	Other	45	Principal Arterial	0.353863	32518.55438	11507.11321	11081.97856	117.2834206	112.8611141	194.9901176	7778.377005	1492.065537	1688.863506
104143	E 223RD ST	Other	45	Principal Arterial	0.247524	28952.38094	7166.40914	6975.894878	42.71204936	31.08759138	116.7146212	4760.654581	975.5379779	1202.078671
104163	E 213TH ST	Other	30	Major Collector	0.384216	896.385344	344.4055913	320.0077113	5.936713524	7.443330888	11.01783565	228.1925996	35.71775828	28.68994509
104637	S MAIN ST	Other	45	Principal Arterial	0.446708	25847.13565	11546.12227	10918.00116	141.6135123	132.1310772	354.3765262	8418.653478	1251.511364	1241.582401
105022	S CENTRAL AVE	Other	40	Principal Arterial	0.456614	5573.880875	2545.112042	2170.059241	86.12935821	91.70403707	197.2194057	1759.941487	224.6514255	185.4663293
140580	E DOMINGUEZ ST	Other	35	Major Collector	0.241284	7073.570546	1706.739396	1586.039915	38.00926946	41.25787525	41.43233565	1319.015414	137.3985438	129.6259576
140624	LYSANDER DR	Other	30	Minor Collector	0.146753	71.333333	10.46838062	10.46838062	0	0	0	0	0	0
146823	SUDBURY CT	Other	30	Minor Collector	0.299862	71.333333	21.3901559	21.3901559	0	0	0	0	0	0
153299	E TURMONT ST	Other	30	Major Collector	0.152875	266.241765	40.70170982	40.70083064	0.00025362	0.000127039	0.000498525	28.48807127	0.763577757	0.544098636
1646442	0	Centroid Connector	25	Tier 1 Centroid Co	0.03286	17599.52235	578.3203045	550.0732451	6.479178222	6.818024529	14.94985666	396.5288949	76.63798779	76.90636241
1646443	0	Centroid Connector	25	Tier 1 Centroid Co	0.552552	5210.808884	2879.24287	2819.668579	14.86317913	8.645354021	36.06575807	2069.994715	397.0032832	352.6705803
1646444	0	Centroid Connector	25	Tier 1 Centroid Co	0.388738	10212.51257	3969.991712	3934.605683	16.18938508	9.103913144	10.09273122	2895.734506	559.2156193	479.6555575
1646445	0	Centroid Connector	25	Tier 1 Centroid Co	0.555034	4528.670945	2513.566349	2468.780781	13.89867411	8.643336344	22.24355812	1836.491622	347.636127	284.6530305
1646446	0	Centroid Connector	25	Tier 1 Centroid Co	0.643117	7423.246922	4774.016291	4356.930613	107.7855828	126.9209375	182.379157	3421.630043	484.799225	450.5013465
1646447	0	Centroid Connector	25	Tier 1 Centroid Co	0.591656	7196.618828	4257.922709	4220.508162	16.84728331	8.817859386	11.74940423	3027.016063	597.9504844	595.5416144
1646448	0	Centroid Connector	25	Tier 1 Centroid Co	0.519087	10469.52908	5434.596444	5434.595775	0.00022736	0.000157283	0.00028446	4735.970649	377.7387949	320.8863306
2666005	I 405 HOV	HOV-Interstate	65	HOV	2.026125	19100.9431	38700.89833	38700.89833	0	0	0	0	14464.27639	24216.36069
2666376	SR 91 HOV	HOV-Other	65	HOV	2.060552	12304.91502	25354.91724	25354.91724	0	0	0	0	8707.091739	16647.8255
2671597	I 405 HOV	HOV-Interstate	65	HOV	0.639736	20533.68432	13136.13707	13136.13707	0	0	0	0	4983.747175	8148.977973
2671599	I 405 HOV	HOV-Interstate	65	HOV	1.100335	15487.14532	17041.04804	17041.04804	0	0	0	0	6499.616883	10520.15802
2674510	E CARSON ST	Other	40	Minor Arterial	0.149547	23982.34387	3586.487578	3408.852744	45.39081336	42.9170513	89.32696974	2666.407441	337.2350245	373.2072207
2683242	S FIGUEROA ST	Other	40	Minor Arterial	0.504445	3186.15553	1607.240226	1587.605464	4.27447171	3.035365623	12.3249251	1381.597527	91.85757966	86.23773396
2683258	E 220TH ST	Other	25	Major Collector	0.143918	0.001776	0.000255598	0.000255598	0	0	0	0.00019357	3.36768E-05	2.83518E-05
2683285	BRENNER DR	Other	25	Minor Collector	0.196496	38.666667	7.597845399	7.597845399	0	0	0	0	0	0
2683293	E VICTORIA ST	Other	40	Minor Arterial	0.270733	9163.881804	2480.965212	2128.461122	85.72780967	81.48658175	185.289699	1435.574818	307.8068984	314.6888252
2683311	GALWAY AVE	Other	30	Major Collector	0.309879	71.38442	22.12053269	22.12043538	5.26794E-05	2.572E-05	1.89026E-05	0.01142152	0.002185886	0.00212577
2683335	S WILMINGTON AVE	Other	45	Minor Arterial	0.376928	9349.437583	3524.064809	2920.586196	78.07890322	81.29501725	444.1046932	2327.215996	287.9588644	255.405553
2731329	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.488001	0	0	0	0	0	0	0	0	0
2732669	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.507975	0	0	0	0	0	0	0	0	0
2732883	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.286889	0	0	0	0	0	0	0	0	0
2732895	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.317617	0	0	0	0	0	0	0	0	0
2732896	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158072	0	0	0	0	0	0	0	0	0
2732901	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.620313	0	0	0	0	0	0	0	0	0
2732904	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.635912	0	0	0	0	0	0	0	0	0
2732908	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.477931	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2744649	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.278984	0	0	0	0	0	0	0	0	0
2744651	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24717	0	0	0	0	0	0	0	0	0
2759878	E WATSON CENTER RD	Other	30	Major Collector	0.262043	1429.731384	374.6511011	367.7633786	1.835187229	1.018270797	4.034264401	285.0056358	40.80941728	41.94832534
2761703	SAN DIEGO FWY	Interstate	65	Freeways	0.377174	124393.0816	46917.83614	41633.08128	965.7618417	838.5741153	3480.418905	31837.58165	3854.870486	5940.629142
2768556	I 405 HOV	HOV-Interstate	65	HOV	1.430456	16290.06663	23302.22355	23302.22355	0	0	0	0	9073.087585	14221.50687
103293	S MAIN ST	Other	35	Principal Arterial	0.258189	9190.366154	2372.851447	2312.379708	19.89723382	16.88587585	23.68862929	1759.993447	284.683584	247.4778718
103575	E 220TH ST	Other	30	Major Collector	0.269547	461.798741	124.4764652	117.647085	1.442061625	1.42872983	3.958588806	91.00835094	14.22277252	12.41596206
103595	DOLORES ST	Other	30	Major Collector	0.257506	0	0	0	0	0	0	0	0	0
103597	E CARSON ST	Other	35	Minor Arterial	0.203562	26685.49149	5432.152019	5207.730612	60.97350357	56.88589881	106.5620041	3928.491734	579.1177919	632.606356
103599	E 213TH ST	Other	30	Major Collector	0.198949	852.906292	169.6848539	167.5727472	0.710339248	0.612412372	0.789355026	137.2018902	8.981323416	7.197838341
103852	GRACE AVE	Other	30	Major Collector	0.257355	0.077918	0.020052587	0.019400192	0.000175259	0.000123788	0.000353348	0.013839008	0.002643293	0.002917634
104105	S MAIN ST	Other	35	Principal Arterial	0.193151	18569.02364	3586.625486	3467.509771	38.61040627	35.23897276	45.26633604	2687.985989	421.6697417	356.5019823
104156	AVALON BLVD	Other	35	Principal Arterial	0.156938	26994.85782	4236.518997	4019.051705	52.30863472	45.71553469	119.4431224	3056.904567	442.0290741	454.2564161
105905	MONETA AVE	Other	30	Major Collector	0.18893	116.640762	22.03693916	22.03693916	0	0	0	9.20822035	6.745989181	6.082729633
106732	S FIGUEROA ST	Other	40	Minor Arterial	0.187953	5781.756579	1086.698494	1074.954815	5.091556365	3.122934763	3.529188406	814.4298095	132.6812581	107.9207293
140483	W 228TH ST	Other	35	Major Collector	0.353112	1066.610329	376.6329065	372.4425331	1.412343479	0.567491945	2.210537971	271.7515668	54.32301491	46.367951
1643165	0	Ramp-Other	35	Ramps	0.813291	0.040206	0.032699178	0.030158457	0.000339956	0.00025944	0.001941326	0.023961993	0.002456139	0.003740325
1646449	0	Centroid Connector	25	Tier 1 Centroid Co	0.323456	1265.046303	409.186817	395.8980995	1.464091885	0.643160234	11.1814654	295.0248635	57.94687652	42.92635908
1646450	0	Centroid Connector	25	Tier 1 Centroid Co	0.328975	3343.193535	1099.827093	1079.358009	3.754227829	1.711422366	15.0034342	809.4317349	143.0630692	126.8632043
1646451	0	Centroid Connector	25	Tier 1 Centroid Co	0.381001	4381.340452	1669.295094	1635.515322	8.389420277	5.167369116	20.22298177	1301.074733	190.416394	144.0241955
1646452	0	Centroid Connector	25	Tier 1 Centroid Co	0.329884	11142.08023	3675.593994	3625.162099	17.42604181	14.22974097	18.77611187	2884.126491	374.9764071	366.0592002
1646453	0	Centroid Connector	25	Tier 1 Centroid Co	0.474068	8907.941335	4222.969933	4129.497218	23.61446627	16.41162593	53.44662211	3145.009371	482.1796562	502.3081905
1646454	0	Centroid Connector	25	Tier 1 Centroid Co	0.687316	561.40016	385.8593124	385.8579267	0.000570472	0.000182139	0.000633018	377.7730685	3.866798577	4.218059667
2662654	W DEL AMO BLVD	Other	40	Principal Arterial	0.486215	29665.51467	14423.81821	13872.61685	155.001532	144.4034648	251.7963629	9855.244359	1814.505793	2202.866702
2674509	CIVIC CENTER DR	Other	30	Minor Collector	0.137706	71.333333	9.823027954	9.823027954	0	0	0	0	0	0
2683232	W 223RD ST	Other	40	Principal Arterial	0.058491	24437.05674	1429.347886	1385.706284	10.8951584	8.831226961	23.91521622	953.7244996	189.4151646	238.3942619
2732916	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.31518	0	0	0	0	0	0	0	0	0
2732917	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.329491	0	0	0	0	0	0	0	0	0
2732918	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.236946	0	0	0	0	0	0	0	0	0
2732923	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.156588	0	0	0	0	0	0	0	0	0
97016	S FIGUEROA ST	Other	40	Minor Arterial	0.24703	16190.92515	3999.644239	3873.2298	25.3625407	19.7639469	81.28795093	2728.824621	506.3273912	611.8926077
97018	W 220TH ST	Other	30	Major Collector	0.249754	461.795343	115.3352341	109.0074737	1.336120712	1.323780367	3.667859272	84.32528045	13.1781257	11.50406785
105915	W CARSON ST	Other	35	Minor Arterial	0.250322	21550.19767	5394.488581	5181.24357	51.35737095	44.98933898	116.8983016	3898.258228	570.0665617	665.6079217
105916	MONETA AVE	Other	30	Major Collector	0.25253	71.344655	18.01666573	18.016643	7.5759E-06	3.53542E-06	1.16164E-05	0.002128828	0.000381825	0.000326016
105943	W 223RD ST	Other	40	Principal Arterial	0.247532	24437.05674	6048.953529	5864.263697	46.10795421	37.37346382	101.2084133	4036.130906	801.5987847	1008.876723
140479	W 228TH ST	Other	35	Minor Arterial	0.132714	2762.127143	366.5729417	362.2455775	1.516924869	0.625848302	2.184590954	260.3723083	51.33318701	41.07315022
1646456	0	Centroid Connector	25	Tier 1 Centroid Co	0.391878	4450.661692	1744.116403	1708.701713	6.302285844	2.85591007	26.25649337	1229.174713	250.4671316	229.0598686
2732924	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.264009	0	0	0	0	0	0	0	0	0
2751967	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.15682	0	0	0	0	0	0	0	0	0
2751968	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.199586	0	0	0	0	0	0	0	0	0
140478	W 228TH ST	Other	35	Major Collector	0.250605	7249.141587	1816.671127	1760.182258	16.7104464	12.44396745	27.33445519	1290.778908	250.0525856	219.3507643
140482	S FIGUEROA ST	Other	40	Minor Arterial	0.214418	6368.947423	1365.616969	1316.245377	14.38840175	11.67648727	23.30670227	956.7303095	177.8860873	174.1958231
106779	W 223RD ST	Other	40	Principal Arterial	0.106651	36805.81816	3925.377312	3811.686093	26.15735416	20.92409987	66.60976501	2671.507057	501.2753907	638.9036457
2683216	S FIGUEROA ST	Other	40	Minor Arterial	0.1721	6368.947423	1096.095851	1056.468344	11.54867567	9.371990498	18.70684113	767.9079474	142.7781045	139.8161589
127351	S FIGUEROA ST	Other	40	Minor Arterial	0.244286	4866.591297	1188.840122	1139.077513	10.25532782	8.199937658	31.30734297	853.8085882	146.0040564	113.3705527
127355	0	Ramp-Other	30	Ramps	0.243181	12901.65405	3137.437135	3015.881246	21.8048533	17.33252831	82.41850643	2071.821682	404.0852136	539.9743505
2670355	0	Ramp-Other	30	Ramps	0.178621	1783.538747	318.5774745	294.0510232	3.19405571	2.978857416	18.35353817	233.2422824	32.86407125	27.94466975
106746	W CARSON ST	Other	35	Minor Arterial	0.106256	24193.19136	2570.671742	2484.800184	22.73517565	19.21521805	43.92116358	1862.823303	277.9318414	318.083157
103295	W 223RD ST	Other	40	Principal Arterial	0.268112	24437.05674	6551.868156	6351.823071	49.94140482	40.48072221	109.6229583	4371.69792	868.2443214	1092.755507
140477	MONETA AVE	Other	30	Major Collector	0.191398	71.333333	13.65305727	13.65305727	0	0	0	0	0	0
1658418	0	Centroid Connector	25	Tier 1 Centroid Co	0.174151	2170.140916	377.9322107	366.430965	1.614903442	0.710540608	9.175801636	270.3008245	55.46177388	40.66836637
2732921	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.239263	0	0	0	0	0	0	0	0	0
2683222	W 228TH ST	Other	35	Minor Arterial	0.044949	3308.084578	148.6950937	145.1931719	0.596595087	0.255631346	2.64969541	104.3579298	21.2298714	16.39900869
140507	W 228TH ST	Other	35	Minor Arterial	0.06797	3308.084578	224.8505088	219.5550489	0.902146167	0.386555042	4.006758704	157.8057018	32.10292463	24.79789585
1646457	0	Centroid Connector	25	Tier 1 Centroid Co	0.229892	0.011322	0.002602837	0.002582147	6.89676E-06	3.21849E-06	1.0575E-05	0.00193799	0.000347597	0.000296791
2683226	MONETA AVE	Other	30	Major Collector	0.104073	71.333333	7.423873965	7.423873965	0	0	0	0	0	0
2683228	MONETA AVE	Other	30	Major Collector	0.080226	71.333333	5.722787973	5.722787973	0	0	0	0	0	0
103576	S MAIN ST	Other	35	Principal Arterial	0.257449	9190.358498	2366.048605	2305.750336	19.84014963	16.83743775	23.62068161	1754.947883	283.8672947	246.7683194
103577	W 220TH ST	Other	30	Major Collector	0.268797	461.784021	124.1261595	117.3159504	1.43798788	1.424710921	3.947510272	90.75256616	14.18251219	12.3808718
104106	W CARSON ST	Other	35	Minor Arterial	0.215003	21504.89024	4623.615917	4440.458555	44.11114016	38.64160101	100.404621	3337.75734	481.9564768	564.7722902
105914	MONETA AVE	Other	30	Major Collector	0.245776	71.333333	17.53202125	17.53202125	0	0	0	0	0	0
2751966	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.138492	0	0	0	0	0	0	0	0	0
2732925	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.164253	0	0	0	0	0	0	0	0	0
2751965	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.132511	0	0	0	0	0	0	0	0	0
91740	0	Ramp-Other	30	Ramps	0.123884	4117.189761	510.0539364	424.2767744	6.476146357	6.579321907	72.72169366	326.5939586	51.34930812	46.33350772
104605	W TORRANCE BLVD	Other	40	Principal Arterial	0.153397	7893.328643	1210.812934	1168.356532	10.33672633	11.97661481	20.14306045	806.0361396	161.0781827	189.2261117

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
104638	W DEL AMO BLVD	Other	40	Principal Arterial	0.243042	38410.83553	9335.44629	8854.835092	120.6012362	111.5551751	248.4547864	6487.772907	1102.621003	1264.441181
105906	W 214TH ST	Other	30	Major Collector	0.24894	365.6813	91.03270282	91.03232792	9.63398E-05	4.08262E-05	0.000237738	90.08713958	0.497009457	0.448178382
1646459	0	Centroid Connector	25	Tier 1 Centroid Co	0.130385	16638.08121	2169.356218	2099.682076	20.69517815	18.4458142	30.5331495	1597.333968	264.7059034	237.6422044
1646460	0	Centroid Connector	25	Tier 1 Centroid Co	0.258815	4473.394918	1157.781706	1110.854615	17.76828022	16.9164538	12.24235713	855.3979752	125.9132868	129.5433523
2683238	S FIGUEROA ST	Other	40	Minor Arterial	0.104925	5416.07528	568.2816988	561.725933	2.84232728	1.743364864	1.970073584	416.6859037	73.85999711	60.05798214
2683244	S MAIN ST	Other	45	Principal Arterial	0.192289	15522.91155	2984.885138	2881.307779	34.89063715	33.06570897	35.62101249	2230.912051	339.616347	295.716743
2732906	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.087308	0	0	0	0	0	0	0	0	0
106652	S FIGUEROA ST	Other	40	Minor Arterial	0.431406	5416.07528	2336.527372	2309.572913	11.68641451	7.167958662	8.10008639	1713.231346	303.6802088	246.9323216
127349	S FIGUEROA ST	Other	40	Minor Arterial	0.152393	18147.79145	2765.596382	2629.959467	21.31118269	19.35568318	94.97004969	2000.590248	306.8433445	318.3096681
1656340	0	Ramp-Other	30	Ramps	0.09541	13112.41966	1251.05596	1212.818476	8.447538716	7.216758398	22.57318681	900.6126189	135.5512051	176.6546521
97055	S FIGUEROA ST	Other	40	Minor Arterial	0.148651	29177.62121	4337.282571	4216.153261	29.79198099	25.6267214	65.7106073	3170.252424	483.4362378	558.3519219
106653	W TORRANCE BLVD	Other	40	Principal Arterial	0.071978	38983.56231	2805.958848	2723.774018	21.51146687	20.61023479	40.06312834	2033.412836	327.8909368	362.470245
2670352	0	Ramp-Other	30	Ramps	0.125609	4117.189761	517.1560887	430.1845384	6.566322267	6.670934467	73.73429353	331.1415562	52.06431213	46.97867013
2670349	0	Ramp-Other	30	Ramps	0.179076	13112.41966	2348.119663	2276.351341	15.85527139	13.54520728	42.36784405	1690.36899	254.4174364	331.5649143
97091	S FIGUEROA ST	Other	40	Minor Arterial	0.048036	3186.15553	153.050167	151.180438	0.407038474	0.289044045	1.173646487	131.5632404	8.747178972	8.21202666
106443	W DEL AMO BLVD	Other	40	Principal Arterial	0.093106	29026.95038	2702.583242	2514.005772	43.45582565	41.31378125	103.8078637	1851.696365	300.5473706	359.1861028
104425	W 214TH ST	Other	30	Major Collector	0.171691	482.322061	82.81035698	82.81009841	6.64444E-05	2.81573E-05	0.000163965	70.50005648	6.473230061	5.8368117
104528	S MAIN ST	Other	45	Principal Arterial	0.278411	15522.91155	4321.749326	4171.781954	50.51738362	47.87511038	51.57487797	3230.088331	491.7230148	428.1617468
2732915	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.28865	0	0	0	0	0	0	0	0	0
2732922	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.043919	0	0	0	0	0	0	0	0	0
104424	S MAIN ST	Other	35	Principal Arterial	0.071756	19051.34571	1367.048362	1322.796517	14.34387436	13.09136376	16.81660693	1028.056984	159.3565915	134.8806501
104604	S MAIN ST	Other	45	Principal Arterial	0.282499	14183.17825	4006.733671	3840.582909	48.33251322	50.37819894	67.44005035	2765.074035	519.5545676	551.999321
1646462	0	Centroid Connector	25	Tier 1 Centroid Co	0.20229	5435.095169	1099.465402	1080.932657	6.658811487	6.461662485	5.412270973	847.9004177	139.070739	93.96150024
1646463	0	Centroid Connector	25	Tier 1 Centroid Co	0.311723	11452.56853	3570.029019	3431.695112	41.60657	37.65395509	59.07338227	2646.16497	388.2686422	397.2615001
2683246	W TORRANCE BLVD	Other	40	Principal Arterial	0.171515	7893.328643	1353.824262	1306.353257	11.55761597	13.39119468	22.52219413	901.2385411	180.1034212	211.5759536
2732907	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.161046	0	0	0	0	0	0	0	0	0
2732909	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.333543	0	0	0	0	0	0	0	0	0
103585	DOLORES ST	Other	30	Major Collector	0.249084	6232.612522	1552.444057	1510.449673	14.7726111	14.31935693	12.90241669	1193.657381	185.8655323	130.9267592
103845	E 223RD ST	Other	40	Principal Arterial	0.250284	27415.06857	6861.553022	6654.055678	56.37286015	47.81757062	103.3069137	4597.785033	882.6184764	1072.787716
103851	E 220TH ST	Other	30	Major Collector	0.251544	1011.243112	254.3721374	242.5619245	3.583143662	3.124387274	5.102681977	174.7631361	36.24604704	31.5527411
103853	E CARSON ST	Other	35	Minor Arterial	0.24918	37052.35777	9232.706508	8759.989614	114.6222979	111.9807395	246.113856	6723.273861	953.9065186	1000.164535
104142	AVALON BLVD	Other	35	Principal Arterial	0.251226	25883.47763	6502.602552	6256.279815	69.93715734	55.51903216	120.866547	4872.012119	687.3438081	615.6941474
140501	E 228TH ST	Other	30	Major Collector	0.250975	335.796815	84.27660564	81.71519545	0.783315563	0.528575436	1.249519194	40.00471905	11.29129673	12.51629642
1646464	0	Centroid Connector	25	Tier 1 Centroid Co	0.390657	2491.321494	973.2521809	932.2246987	1.026366495	0.397721641	39.60339404	621.5850348	180.4249987	130.2146651
1646465	0	Centroid Connector	25	Tier 1 Centroid Co	0.399277	4771.830912	1905.282331	1857.394936	3.696458553	1.451807905	42.73912834	1345.867884	255.1964587	256.3305927
2683252	GRACE AVE	Other	30	Major Collector	0.153982	2582.252893	397.620465	381.1260217	4.522332312	5.025482971	6.946628	291.4845128	48.53880072	41.10270813
2732920	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13419	0	0	0	0	0	0	0	0	0
2732926	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.279601	0	0	0	0	0	0	0	0	0
103586	E 223RD ST	Other	40	Principal Arterial	0.054943	24761.52494	1360.472465	1320.807531	10.7614963	8.703881715	20.19955517	905.313841	176.4356102	220.8353185
130630	S MAIN ST	Other	35	Principal Arterial	0.375203	8574.191136	3217.062237	3125.301286	33.81010701	27.87073169	30.08011193	2328.074407	377.1809276	319.7416827
140486	DOLORES ST	Other	35	Major Collector	0.368043	2027.428184	746.1807511	734.3088024	3.534810107	4.615715961	3.721422629	591.9494612	69.48196681	46.6236405
140488	E 228TH ST	Other	35	Major Collector	0.058188	3455.498794	201.0685638	197.586969	1.210988698	0.82664148	1.443964663	142.8812258	27.38395471	23.17104441
140498	CATSKILL AVE	Other	30	Minor Collector	0.361407	0	0	0	0	0	0	0	0	0
140500	GRACE AVE	Other	30	Major Collector	0.35394	71.333333	25.24771988	25.24771988	0	0	0	0	0	0
1646466	0	Centroid Connector	25	Tier 1 Centroid Co	0.378438	2510.768366	950.1701589	918.6131503	1.730315795	0.616570868	29.2101219	651.578072	148.6152168	118.4198611
1646467	0	Centroid Connector	25	Tier 1 Centroid Co	0.232173	3835.750794	890.5577691	869.0142839	1.608772455	0.639360561	19.29535219	593.8986707	141.358848	133.7567652
2731349	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.182384	0	0	0	0	0	0	0	0	0
2732928	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.206455	0	0	0	0	0	0	0	0	0
2732929	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.199047	0	0	0	0	0	0	0	0	0
140485	E 228TH ST	Other	35	Major Collector	0.182229	3819.692141	696.0586792	686.5540728	3.284872163	2.154352604	4.065381567	519.2760528	89.22310257	78.05491712
103294	E 223RD ST	Other	40	Principal Arterial	0.210607	31639.15996	6663.428562	6464.228789	52.99754437	43.33300354	102.8692251	4520.539718	870.9191112	1017.941937
140496	E 228TH ST	Other	35	Major Collector	0.192749	264.463482	50.97507169	49.00790662	0.601586976	0.405946356	0.959631736	30.72365611	8.67172489	9.612525627
2731348	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.188376	0	0	0	0	0	0	0	0	0
140499	E 223RD ST	Other	40	Principal Arterial	0.197883	24761.52494	4899.884839	4757.027406	38.7586621	31.34794652	72.75082495	3260.583128	635.4514287	795.3616536
103591	DOLORES ST	Other	30	Major Collector	0.263214	0.010765	0.002833499	0.002732951	3.84292E-05	2.63214E-05	3.57971E-05	0.002246795	0.000254791	0.000231365
103592	E 220TH ST	Other	30	Major Collector	0.250221	0.003589	0.000898043	0.000842494	4.7542E-06	3.25287E-06	4.7542E-05	0.000627054	0.000106594	0.000108596
103596	E CARSON ST	Other	35	Minor Arterial	0.25147	17041.81858	4285.506118	4112.677908	43.11596689	38.64512401	91.06711872	3075.761966	429.9973109	523.5144146
103850	GRACE AVE	Other	30	Major Collector	0.26205	0	0	0	0	0	0	0	0	0
1646468	0	Centroid Connector	25	Tier 1 Centroid Co	0.159714	6694.389844	1069.18778	1038.214262	10.32671099	10.02819179	10.61861436	819.3019481	127.6049505	91.30736382
1646469	0	Centroid Connector	25	Tier 1 Centroid Co	0.205278	3593.449824	737.656193	706.0291228	8.95291217	9.249313074	13.42484495	531.198401	94.28694988	80.54377191
1646470	0	Centroid Connector	25	Tier 1 Centroid Co	0.159703	9643.683678	1540.125214	1473.816416	20.45432505	20.08675183	25.76772147	1128.721343	181.2608384	163.8342343
2732919	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.245874	0	0	0	0	0	0	0	0	0
2683250	E CARSON ST	Other	35	Minor Arterial	0.117513	26685.49149	3135.892161	3006.337369	35.19900239	32.83929529	61.51649516	2267.85377	334.3151918	365.1932615
2683254	GRACE AVE	Other	30	Major Collector	0.094843	2582.252893	244.9086111	234.7490958	2.785465596	3.095374014	4.278675685	179.5356967	29.89677674	25.31662238
1646471	0	Centroid Connector	25	Tier 1 Centroid Co	0.208887	20010.61711	4179.957775	3927.24192	60.27287308	61.77218605	130.6707959	3081.191876	442.4765501	403.5734943
2683256	AVALON BLVD	Other	40	Principal Arterial	0.284027	25473.11062	7235.05119	6933.509729	84.26874886	69.13301167	148.1397008	5456.124779	763.432886	693.4074439

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
104141	AVALON BLVD	Other	40	Principal Arterial	0.062049	26902.84201	1669.294444	1601.788266	18.84404074	15.34402579	33.31811076	1259.440195	176.4440256	161.4158352
104150	AVALON BLVD	Other	35	Principal Arterial	0.262662	24872.28631	6533.004465	6287.800832	69.37932083	54.78388088	121.0404321	4911.313075	680.7855344	610.7748411
2732927	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.167062	0	0	0	0	0	0	0	0	0
104151	E 220TH ST	Other	25	Major Collector	0.105609	0.001776	0.000187562	0.000187562	0	0	0	0.000142044	2.47125E-05	2.0805E-05
1646472	0	Centroid Connector	25	Tier 1 Centroid Co	0.218624	12141.8342	2654.496359	2595.042466	20.15702502	18.07768297	21.21918589	2042.206217	319.4203702	233.4158782
104157	E CARSON ST	Other	40	Minor Arterial	0.101002	23911.01054	2415.059886	2295.087747	30.656335	28.98558992	60.33021456	1800.855145	227.7639267	252.0590564
2674511	CIVIC CENTER DR	Other	30	Minor Collector	0.040861	71.333333	2.91475132	2.91475132	0	0	0	0	0	0
18064	SAN DIEGO FWY	Interstate	65	Freeways	0.257876	118994.2935	30685.77243	27183.60927	634.7542095	550.3912803	2317.017674	20251.42223	2635.642703	4296.544338
93201	0	Ramp-Other	30	Ramps	0.143599	12342.723	1772.40268	1712.097424	15.20866027	10.46629511	34.63030009	1350.897809	167.2515511	193.9480635
103855	E 213TH ST	Other	30	Major Collector	0.248246	852.98421	211.7499182	209.1138294	0.886520972	0.764279677	0.985288126	171.2121008	11.20932943	8.984184348
127074	0	Ramp-Other	30	Ramps	0.182113	12375.51647	2253.742431	2170.664849	20.08034775	15.70561452	47.29161977	1769.569753	187.9709813	213.1241151
140583	AVALON BLVD	Other	35	Principal Arterial	0.086815	38455.59498	3338.522478	3206.280095	31.9053415	28.94529726	71.3917447	2420.038992	353.8599218	377.3694093
1646473	0	Centroid Connector	25	Tier 1 Centroid Co	0.57982	5211.176297	3021.544241	2941.414639	14.84430986	9.849938094	55.43535402	2302.958153	325.048443	313.4080422
2666772	W DEL AMO BLVD	Other	40	Principal Arterial	0.307588	29665.51467	9124.756325	8776.056833	98.05664414	91.3521239	159.2907246	6234.597661	1147.887679	1393.571493
2671598	SAN DIEGO FWY	Interstate	65	Freeways	0.174794	121400.5081	21220.08041	18812.66715	437.4512684	380.6292338	1589.332762	13691.84764	1959.031979	3161.787528
2732888	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.545898	0	0	0	0	0	0	0	0	0
103598	E 213TH ST	Other	30	Major Collector	0.253587	852.906292	216.2859479	213.5937866	0.905421986	0.78060114	1.006138121	174.882084	11.44789298	9.174603699
2732889	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.320973	0	0	0	0	0	0	0	0	0
2732890	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.21757	0	0	0	0	0	0	0	0	0
2683260	E 213TH ST	Other	30	Major Collector	0.179566	852.906292	153.1529712	151.2466408	0.641133041	0.552746885	0.712450551	123.8347246	8.10630021	6.496574698
127072	AVALON BLVD	Other	35	Principal Arterial	0.228863	38011.8901	8699.515204	8357.243426	86.8735038	73.53363864	181.8646356	6368.811861	904.6087187	938.7999917
1657156	0	Ramp-Other	35	Ramps	0.236756	2564.660849	607.198844	547.6930943	14.80562051	12.25083126	32.44929793	0.025001197	230.4916519	317.1764411
2667622	0	Ramp-Other	30	Ramps	0.039251	12342.723	484.4642203	467.980529	4.15709806	2.860831547	9.465761661	369.2511084	45.71613057	53.01329007
2732914	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.163604	0	0	0	0	0	0	0	0	0
2761702	SAN DIEGO FWY	Interstate	65	Freeways	0.26308	117315.3367	30863.31877	27224.35914	664.015504	575.111264	2399.832862	20660.1286	2564.134988	4000.095548
2761705	0	0	35	Ramps	0.120853	7077.744892	855.3667034	833.6965916	4.412910677	4.500384561	12.75681655	710.5099864	57.26082733	65.92577775
2667623	0	Ramp-Other	30	Ramps	0.141096	12342.723	1741.508844	1682.254738	14.94356597	10.28386253	34.02667721	1327.351007	164.3362757	190.567455
2674507	AVALON BLVD	Other	35	Principal Arterial	0.09601	27066.19115	2598.625013	2465.584992	32.00086671	27.96740423	73.07174925	1870.123281	270.4202386	277.9005627
2674508	E DESFORD ST	Other	30	Minor Collector	0.054704	71.333333	3.902218648	3.902218648	0	0	0	0	0	0
17968	SAN DIEGO FWY	Interstate	65	Freeways	0.239599	117786.7103	28221.57801	24921.61456	599.6366378	521.7477934	2178.579015	18768.10991	2390.172216	3761.096178
1657154	AVALON BLVD	Other	35	Principal Arterial	0.028057	38005.64851	1066.32448	1026.208361	10.02410314	8.825196612	21.26681971	775.9159145	113.7953738	118.7182866
2761706	0	Ramp - Other	30	Ramps	0.082248	9209.369625	757.4522329	725.4061847	7.081339778	5.860922076	19.10378639	574.2397465	67.38790758	83.77853058
2761707	0	Ramp - Other	30	Ramps	0.126693	9209.369625	1166.762666	1117.399642	10.90793917	9.028034731	29.42705	884.5462042	103.8028423	129.0505954
2761704	0	Ramp-Other	35	Ramps	0.124735	7077.744892	882.8425091	860.4763172	4.55466073	4.644944422	13.16658678	733.3327527	59.10014064	68.04342373
98479	AVALON BLVD	Other	35	Principal Arterial	0.028841	36921.07346	1064.84068	1030.852417	8.500628065	7.579436921	17.90819789	797.5943772	106.3735144	108.6089448
127076	AVALON BLVD	Other	35	Principal Arterial	0.052176	32347.5713	1687.76688	1609.341556	18.62868508	17.14972135	42.646918	1165.180933	199.3176067	211.7808237
2761708	0	Ramp - Other	30	Ramps	0.071409	6108.02368	436.167863	434.727215	0.747940294	0.337314979	0.355392667	395.8968527	18.27509861	20.55526374
98480	AVALON BLVD	Other	35	Principal Arterial	0.029961	38005.64851	1138.687235	1095.848761	10.70435735	9.424090805	22.7100255	828.571006	121.5177387	126.7747295
2761709	0	Ramp - Other	30	Ramps	0.0259	3101.345945	80.32485998	70.75604064	1.958645438	1.723267922	5.886905975	37.23728501	14.59217103	18.92658462
2674513	AVALON BLVD	Other	35	Principal Arterial	0.162076	37539.77326	6084.296291	5777.778851	80.31474817	77.87839969	148.3242927	4314.075944	657.6677326	691.771594
2674514	CARSON PLAZA DR	Other	30	Minor Collector	0.136941	0	0	0	0	0	0	0	0	0
2683261	AVALON BLVD	Other	35	Principal Arterial	0.158117	37468.43993	5924.397316	5625.36712	78.3529149	75.97607866	144.7012031	4208.696822	641.6030065	674.8738193
2662655	E DEL AMO BLVD	Other	45	Principal Arterial	0.104212	29665.51467	3091.502614	2973.361882	33.22196899	30.95045169	53.96831148	2112.305719	388.9087701	472.1473932
2674512	CARSON PLAZA DR	Other	30	Minor Collector	0.129234	0	0	0	0	0	0	0	0	0
104080	AVALON BLVD	Other	35	Principal Arterial	0.095591	37468.43993	3581.645641	3400.864349	47.36893243	45.93199552	87.48036394	2544.404067	387.8866472	408.0008048
12810	HARBOR FWY	Interstate	65	Freeways	0.383607	131473.996	50434.34517	46150.47973	662.9421175	558.4882077	3062.43512	31264.36133	5967.617779	8914.0252
13481	GARDENA FWY	State Route-Limited Access	65	Freeways	0.586987	102204.6555	59992.80413	53789.09692	1009.397211	869.9800809	4324.329917	40945.8756	5443.564905	7396.917142
18243	GARDENA FWY	State Route-Limited Access	65	Freeways	0.743401	54697.3161	40662.03949	38481.14904	458.9764108	376.5972021	1345.316839	25171.69811	5383.318571	7926.132354
18244	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.286834	57654.02872	16537.13567	14660.29289	285.8207913	250.7559977	1340.265997	9768.897844	1864.037425	3024.680501
91942	0	Ramp-Other	30	Ramps	0.28402	2745.107236	779.6653572	713.460354	9.024277376	8.058115465	49.12261037	537.2167409	89.91736239	86.32625043
103302	S MAIN ST	Other	45	Minor Arterial	0.146611	22859.98361	3351.525058	3124.295927	48.13695853	43.38196018	135.7102119	2356.369629	377.4497119	388.4240324
103303	E 192ND ST	Other	35	Major Collector	0.62433	3049.509135	1903.900038	1883.66215	7.929626568	3.961705994	8.346555391	1306.799991	259.9289453	316.933213
103419	GRIFFITH ST	Other	30	Major Collector	0.176887	3044.440099	538.5218758	532.7888075	2.246279522	1.122236046	2.364552715	369.4295346	73.60040346	89.75886941
103421	W GARDENA BLVD	Other	40	Minor Arterial	0.144495	2096.292409	302.9037716	297.3903697	2.387793891	1.772796728	1.352811318	208.5824612	36.74860172	31.97450166
103424	W 168TH ST	Other	25	Minor Arterial	0.141643	0	0	0	0	0	0	0	0	0
103428	S MAIN ST	Other	40	Minor Arterial	0.394887	21913.38129	8653.309397	8034.12234	154.8511963	148.8448967	315.4909637	6265.830667	852.3571114	910.4061425
103429	E VICTORIA ST	Other	40	Minor Arterial	0.236975	22033.52681	5221.395017	4961.01659	61.38767633	59.0138506	139.9768992	3841.355582	503.2138563	536.9025431
103430	W VICTORIA ST	Other	40	Minor Arterial	0.196394	24131.36022	4739.254359	4513.538206	65.90104484	66.06814019	93.74696766	3553.476276	417.0547307	477.0842796
103431	W ALBERTONI ST	Other	40	Minor Arterial	0.177356	5032.724366	892.5838627	867.1484264	9.426100017	7.098974341	8.910361893	651.5163359	103.3126016	94.05182065
103442	W WALNUT ST	Other	30	Minor Arterial	0.139681	1307.365459	182.6141147	173.0187048	2.920046391	2.505132361	4.17023115	141.1227383	15.85813018	16.03783663
104024	S BROADWAY	Other	40	Principal Arterial	0.459954	4509.975863	2074.381438	1988.704451	30.70549138	26.51265697	28.45883871	1474.868386	259.388535	254.4475297
140618	AVALON BLVD	Other	40	Principal Arterial	0.273143	32083.49455	8763.381951	8350.968752	106.7358478	98.62121999	207.0561312	6220.503895	1001.260206	987.2613391
1646474	0	Centroid Connector	25	Tier 1 Centroid Co	0.325497	14482.84909	4714.12393	4361.188906	80.07081451	83.98495207	188.8792576	3364.557605	493.6268241	503.0044766
1646475	0	Centroid Connector	25	Tier 1 Centroid Co	0.376135	1990.172144	748.5733994	663.8665212	22.92395305	22.22995727	39.55296791	478.0145078	95.34238949	90.50962345
1646478	0	Centroid Connector	25	Tier 1 Centroid Co	0.265601	0	0	0	0	0	0	0	0	0
1646479	0	Centroid Connector	25	Tier 1 Centroid Co	0.446395	6817.089646	3043.114733	2886.882758	54.42688893	42.26978313	59.53530297	2378.413132	265.9521645	242.5174613

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2668406	0	Ramp-Other	30	Ramps	0.187094	2064.888255	386.3282032	328.8574819	9.660798506	10.4954095	37.31451324	248.0571047	36.89824893	43.90212834
2732672	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.437906	0	0	0	0	0	0	0	0	0
2732931	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.455753	0	0	0	0	0	0	0	0	0
12525	SAN DIEGO FWY	Interstate	65	Freeways	0.444542	88653.91299	39410.38779	34582.83123	845.6437847	734.8531555	3247.059617	26753.23154	3146.123821	4683.475874
12669	0	Low Speed Freeway-Freeway Ramp	25	Ramps	0.608131	2669.505883	1623.409282	995.7063576	122.9819879	124.0205893	380.7003473	353.7828291	242.4902726	399.4332559
12763	0	High Speed Freeway-Freeway Ramp	30	Ramps	0.518257	35686.71335	18494.889	17145.93887	293.5841605	239.5537414	815.8122307	11863.1704	1824.888228	3457.880244
12849	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.496765	21951.71105	10904.84174	9984.440045	150.0843571	110.7430783	659.5742579	6564.908491	1385.972491	2033.559063
12850	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.382428	41.142932	15.7342092	6.691079606	0.11927088	0.204318278	8.719540436	5.010276039	0.936859877	0.74394369
12947	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.425122	35042.79137	14897.46155	13758.27816	248.3769359	215.0346808	675.7717729	8987.735591	1786.25596	2984.286613
13161	SAN DIEGO FWY	Interstate	65	Freeways	0.477301	87973.1283	41989.66211	36707.56065	923.3108376	799.9636446	3558.826982	28381.59071	3315.109843	5010.860088
97111	S FIGUEROA ST	Other	40	Minor Arterial	0.321544	8292.621336	2666.442635	2619.669829	11.99843108	9.170933273	25.60344197	2037.137662	285.2913523	279.4487135
103304	S MAIN ST	Other	45	Minor Arterial	0.196436	17820.30263	3500.548967	3246.702751	50.0291298	45.26904668	158.5480392	2496.362513	374.1489348	373.4411993
104159	S BROADWAY	Other	40	Principal Arterial	0.294167	9984.363514	2937.070262	2765.313061	39.90314168	40.21931326	91.6347455	2074.129008	333.3277512	357.8563014
1643030	0	Ramp-Other	30	Ramps	0.405533	7308.389978	2963.793313	2902.870386	15.48302852	10.33303721	35.10686163	2214.068509	232.6553101	456.1465656
2665996	I 405 HOV	HOV-Interstate	65	HOV	0.615659	16290.06663	10029.12613	10029.12613	0	0	0	0	3904.998147	6120.844471
2761697	0	Low Speed Freeway-Freeway Ramp	30	Ramps	0.279897	0	0	0	0	0	0	0	0	0
1643029	HARBOR FWY	Interstate	65	Freeways	0.07011	96431.2046	6760.791755	6165.721465	80.20106151	66.60924147	448.2599866	4231.802761	796.0880741	1137.01268
12923	SAN DIEGO FWY	Interstate	65	Freeways	0.304703	124340.6263	37886.96187	33784.90443	752.2400101	644.5341071	2705.283324	25312.31126	3229.372925	5243.220248
13505	SAN DIEGO FWY	Interstate	65	Freeways	0.254101	130324.3096	33115.53741	29584.42382	649.7030986	560.8806726	2320.52981	21868.91354	2978.313903	4737.196382
91804	0	Ramp-Other	30	Ramps	0.141563	2149.949951	304.3533649	298.9819323	1.565846463	1.143373066	2.66221311	201.6659786	52.12620895	45.18974482
95396	0	Ramp-Other	30	Ramps	0.103949	682.656067	70.96141551	65.2579582	1.084860932	1.019865988	3.598730388	48.91577427	7.842314843	8.49986919
127068	S MAIN ST	Other	45	Principal Arterial	0.066345	25522.03549	1693.259444	1580.734091	24.06517709	22.66593125	65.79424461	1206.884898	186.5157905	186.4045729
130600	0	Ramp-Other	30	Ramps	0.148404	2956.609096	438.7726163	428.5916111	2.638922006	2.141305882	5.400777284	322.3513993	50.00546403	56.2347479
2666001	I 405 HOV	HOV-Interstate	65	HOV	0.297486	15487.14532	4607.208912	4607.208912	0	0	0	0	1757.23305	2844.224466
2668415	0	Ramp-Other	30	Ramps	0.10622	3451.714936	366.6411605	331.3176315	5.954814822	6.002986442	23.36572772	210.777841	55.11157027	65.42822049
2668417	0	Shared HOV Ramp to MF	30	Ramps	0.103975	6272.59116	652.1926659	604.3884433	9.136100566	8.482180788	30.18594121	455.7543249	73.71537327	74.91874498
12946	0	Low Speed Freeway-Freeway Ramp	30	Ramps	0.149798	0	0	0	0	0	0	0	0	0
97090	S FIGUEROA ST	Other	40	Minor Arterial	0.10662	5336.034613	568.9280104	560.7332129	2.082612512	1.502558769	4.609626246	443.8980593	58.67378736	52.26172634
13026	0	High Speed Freeway-Freeway Ramp	50	Ramps	0.057161	35042.79137	2003.080998	1849.908822	33.39623457	28.91310585	90.86283539	1208.471813	240.1761775	401.2608312
13162	0	High Speed Freeway-Freeway Ramp	50	Ramps	0.064527	42351.18135	2732.794679	2550.190267	40.16341536	34.28312373	108.1578733	1716.495306	308.1455645	525.5493958
13160	SAN DIEGO FWY	Interstate	65	Freeways	0.140192	124381.7693	17437.329	15546.68221	346.1447836	296.6211286	1247.880874	11647.87739	1486.15831	2412.646515
91949	0	Ramp-Other	30	Ramps	0.141764	3451.714936	489.3289162	442.1852073	7.94745216	8.011743268	31.1845135	281.3096389	73.55334822	87.32222038
2668416	0	Ramp-Other	30	Ramps	0.095061	6955.247227	661.1727566	612.2511007	9.344944608	8.687649221	30.88906212	461.4148339	74.56736567	76.26890101
104247	S MAIN ST	Other	45	Principal Arterial	0.171089	24298.27573	4157.167697	3848.646189	63.15952679	60.5002583	184.8617227	2967.212799	446.277682	432.7604618
104029	S BROADWAY	Other	40	Principal Arterial	0.293741	2446.978643	718.7779536	696.7559705	6.424622373	7.114221376	8.483139327	485.1844446	109.101133	102.4703932
104030	W VICTORIA ST	Other	40	Minor Arterial	0.203963	26194.35744	5342.679727	5085.562972	77.5959501	75.43137297	104.0894319	4007.551321	472.3959484	537.1521217
104160	GRIFFITH ST	Other	30	Major Collector	0.175168	10581.90341	1853.610857	1758.789173	22.15449402	20.81838258	51.84880662	1311.601643	206.3128625	240.8746673
105732	S FIGUEROA ST	Other	40	Minor Arterial	0.198648	18874.4425	3749.370254	3612.942934	32.53658254	29.27460002	74.61613713	2745.931802	410.2172322	445.8020438
12827	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.561655	34614.42108	19441.36267	16661.1388	301.5072827	258.7180638	2219.998522	10806.86894	2401.230193	3453.039671
13198	0	High Speed Freeway-Freeway Ramp	30	Ramps	0.572632	39643.86395	22701.3451	19776.75178	366.1005268	319.1179534	2239.374838	13108.66985	2712.801858	3955.280079
13199	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.500522	20075.05302	10048.00569	9175.495832	204.6004741	186.7117888	481.1975944	6252.295988	980.2494141	1938.278892
103668	S BROADWAY	Other	40	Principal Arterial	0.313583	5094.522506	1597.555651	1523.952799	23.87122553	21.62928896	28.10233761	1120.045286	200.1835508	203.7239621
103669	W WALNUT ST	Other	30	Minor Arterial	0.284715	0	0	0	0	0	0	0	0	0
105878	S FIGUEROA ST	Other	40	Principal Arterial	0.407088	5833.448911	2374.72705	2320.219346	19.46030367	16.49846898	18.54893175	1675.755862	321.0355847	271.3206335
2744655	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.261665	0	0	0	0	0	0	0	0	0
89437	GARDENA FWY	State Route-Limited Access	65	Freeways	0.245379	82640.25668	20278.18354	18842.28118	298.0320555	257.6105967	880.2597157	12859.42436	2341.078456	3640.633256
104025	W ALBERTONI ST	Other	40	Minor Arterial	0.185304	7983.98295	1479.463977	1421.93902	18.03381697	17.2607259	22.23041389	1039.387884	188.4259494	175.0388742
2683275	S FIGUEROA ST	Other	40	Principal Arterial	0.183317	5833.448911	1069.370354	1044.824829	8.76322684	7.429474309	8.352824256	754.6145732	144.5664826	122.1791961
13235	GARDENA FWY	State Route-Limited Access	65	Freeways	0.131839	104949.7627	13836.47177	12412.36931	230.9025425	199.1405648	994.0593515	9445.933803	1264.37929	1701.44097
13536	0	High Speed Freeway-Freeway Ramp	40	Ramps	0.088444	59718.91698	5281.779893	4675.895847	92.69848196	82.28094888	430.9046154	3129.459385	592.210449	953.4005357
103667	S BROADWAY	Other	40	Principal Arterial	0.284597	3787.212456	1077.829303	1030.580164	15.71524798	14.52587983	17.00801106	728.9891041	149.3721286	152.2189319
103707	W 168TH ST	Other	25	Minor Arterial	0.24928	655.837664	163.4872129	158.9040677	1.918090943	1.677903181	0.987151044	133.1904234	16.34508145	9.368562858
103730	W GARDENA BLVD	Other	40	Minor Arterial	0.249273	7568.29176	1886.570792	1821.646201	22.97219727	20.02979373	21.9225994	1423.283092	196.6060527	167.1081094
103706	S BROADWAY	Other	40	Principal Arterial	0.167624	9948.464438	1667.601403	1584.188076	28.40391664	23.29983792	31.70957238	1232.91209	176.853944	174.4220423
104012	AVALON BLVD	Other	40	Principal Arterial	0.101718	31430.59922	3197.057691	3051.404529	37.34451003	34.29697049	74.01168131	2280.572941	363.6528021	361.5752161
140617	E 189TH ST	Other	25	Major Collector	0.339766	0	0	0	0	0	0	0	0	0
1646484	0	Centroid Connector	25	Tier 1 Centroid Co	0.523023	8763.642512	4583.586598	4307.707086	62.24840558	62.1251526	151.5059537	3386.413521	496.0089886	425.2845769
2683279	E 184TH ST	Other	25	Minor Collector	0.101597	77.333333	7.856834633	7.856834633	0	0	0	0	0	0
2732900	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.39231	0	0	0	0	0	0	0	0	0
2744653	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.300051	0	0	0	0	0	0	0	0	0
103418	S MAIN ST	Other	45	Minor Arterial	0.388496	19815.54352	7698.259393	7108.729585	122.6218472	112.4905832	354.4173784	5432.631274	838.5339528	832.1254137
2744652	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.183193	0	0	0	0	0	0	0	0	0
2759518	E 184TH ST	Other	25	Minor Collector	0.515397	0	0	0	0	0	0	0	0	0
2732933	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.150671	0	0	0	0	0	0	0	0	0
104059	E TURMONT ST	Other	30	Major Collector	0.203069	194.959519	39.59023456	39.58900295	0.000371413	0.000185605	0.000674595	37.84914695	1.015718444	0.724137759
2683281	AVALON BLVD	Other	40	Principal Arterial	0.258495	18428.50744	4763.677031	4543.340149	58.47773281	53.50233143	108.3568176	3344.851411	536.1560655	556.4358877

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2683283	BRENNER DR	Other	25	Minor Collector	0.146979	38.666667	5.683188049	5.683188049	0	0	0	0	0	0
2732898	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.18553	0	0	0	0	0	0	0	0	0
2732899	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.17501	0	0	0	0	0	0	0	0	0
104018	AVALON BLVD	Other	40	Principal Arterial	0.258563	18428.50744	4764.93017	4544.535326	58.49311603	53.51640582	108.3853221	3345.731312	536.2971074	556.5822644
140613	BRENNER DR	Other	25	Minor Collector	0.041391	38.666667	1.600452014	1.600452014	0	0	0	0	0	0
2732897	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.146459	0	0	0	0	0	0	0	0	0
140619	AVALON BLVD	Other	40	Principal Arterial	0.27569	32083.49455	8845.098612	8428.839748	107.7311368	99.54084175	208.9868853	6278.508762	1010.596743	996.4673398
104011	AVALON BLVD	Other	40	Principal Arterial	0.054173	32083.49455	1738.05915	1656.264412	21.16913516	19.55974471	41.06585852	1233.725036	198.5819483	195.805525
18040	GARDENA FWY	State Route-Limited Access	65	Freeways	0.168929	110775.0735	18713.12239	16977.03727	297.8426706	257.9391571	1180.30329	12799.08941	1762.825698	2415.122164
98490	AVALON BLVD	Other	40	Principal Arterial	0.171526	40969.14947	7027.274332	6769.38992	69.1739027	63.67922287	125.0312865	5121.660508	794.8502693	802.622025
98525	E ALBERTONI ST	Other	40	Minor Arterial	0.355514	10153.83226	3609.829524	3458.492898	52.23303802	43.49481071	55.60877712	2407.85476	521.3822506	497.61514
98544	S MAIN ST	Other	40	Minor Arterial	0.121643	23297.79299	2834.013433	2479.412543	80.26209987	79.4495228	194.8892676	1957.653503	264.2515113	257.5075286
127556	0	Ramp-Other	30	Ramps	0.364044	5803.504698	2112.731064	1913.789331	38.71791709	37.18715867	123.0366573	1599.82179	146.5489807	167.418561
127561	0	Ramp-Other	30	Ramps	0.246801	2233.451763	551.2181286	535.7499447	4.201747784	3.079561653	8.186874381	400.6132524	66.60795304	68.52873933
2672011	SR 91 HOV	HOV-Other	65	HOV	0.314901	12218.96027	3847.762809	3847.762809	0	0	0	0	1338.846619	2505.977114
2676600	E 169TH ST	Other	30	Minor Collector	0.269545	71.333333	19.22754324	19.22754324	0	0	0	0	0	0
2683287	E VICTORIA ST	Other	40	Minor Arterial	0.313279	22110.86015	6926.868156	6582.650019	81.15400297	78.01582488	185.0483089	5078.24047	665.2445772	709.780744
2683289	BILLINGS DR	Other	35	Minor Collector	0.383677	71.333333	27.36895921	27.36895921	0	0	0	0	0	0
2732673	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.576636	0	0	0	0	0	0	0	0	0
2732936	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.31104	0	0	0	0	0	0	0	0	0
18173	GARDENA FWY	State Route-Limited Access	65	Freeways	0.170602	100132.3846	17082.78507	15465.99455	275.3291879	235.5684044	1105.892925	11586.9226	1618.755913	2260.31604
93237	0	Ramp-Other	30	Ramps	0.181295	10642.68892	1929.466288	1784.423445	27.05917108	26.48753816	91.49613446	1422.844579	171.6523131	189.9265527
124028	SR 91 HOV	HOV-Other	65	HOV	0.298494	12218.96027	3647.286328	3647.286328	0	0	0	0	1269.089913	2375.410471
2732930	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.395585	0	0	0	0	0	0	0	0	0
98531	E ALBERTONI ST	Other	40	Minor Arterial	0.181591	14213.00023	2580.952924	2394.154729	44.76483618	40.4230286	101.6103298	1790.732867	295.5966675	291.6635955
127550	S MAIN ST	Other	40	Minor Arterial	0.164118	24239.85217	3978.196058	3608.757962	88.1906638	85.14091366	196.106519	2901.855601	349.0577414	357.844619
2668405	0	Ramp-Other	30	Ramps	0.127301	10642.68892	1354.824943	1252.979337	19.00030083	18.5989139	64.24639076	999.0873313	120.5301366	133.3618692
93263	0	Ramp-Other	30	Ramps	0.120551	2064.888255	248.924344	211.8940121	6.224779633	6.762547759	24.04300451	159.8315928	23.77479131	28.28762801
2732932	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.235556	0	0	0	0	0	0	0	0	0
18118	GARDENA FWY	State Route-Limited Access	65	Freeways	0.055286	110775.0735	6124.310712	5556.135906	97.47603957	84.4166735	386.2820931	4188.803917	576.9262917	790.4056968
103423	S MAIN ST	Other	40	Minor Arterial	0.285087	10515.95224	2997.961276	2665.315764	82.77174848	88.61527993	161.2584828	2037.081289	332.1772758	296.0571994
140641	BILLINGS DR	Other	30	Minor Collector	0.103076	0	0	0	0	0	0	0	0	0
1646485	0	Centroid Connector	25	Tier 1 Centroid Co	0.383023	0	0	0	0	0	0	0	0	0
2676630	AMBLER AVE	Other	30	Minor Collector	0.097595	71.333333	6.961776634	6.961776634	0	0	0	0	0	0
1646486	0	Centroid Connector	25	Tier 1 Centroid Co	0.138917	23812.11387	3307.907423	2946.404266	86.74567266	90.44979903	184.3076856	2366.283972	302.2965466	277.8237474
103420	S MAIN ST	Other	40	Minor Arterial	0.166874	10515.95224	1754.839014	1560.126919	48.44995653	51.87043331	94.39170522	1192.393561	194.4380162	173.2953417
2732671	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.145198	0	0	0	0	0	0	0	0	0
140640	BILLINGS DR	Other	35	Minor Collector	0.117797	71.333333	8.402852627	8.402852627	0	0	0	0	0	0
140644	E SHERMAN DR	Other	30	Minor Collector	0.139	71.333333	9.915333287	9.915333287	0	0	0	0	0	0
2732938	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.181446	0	0	0	0	0	0	0	0	0
2732937	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.11582	0	0	0	0	0	0	0	0	0
2676631	E 169TH ST	Other	30	Minor Collector	0.131548	0	0	0	0	0	0	0	0	0
93197	0	Ramp-Other	30	Ramps	0.351904	0	0	0	0	0	0	0	0	0
98477	E ALBERTONI ST	Other	40	Minor Arterial	0.263832	8115.880808	2141.229065	1988.044669	32.126076	31.79451093	89.26380973	1472.7526	242.3262664	272.9658016
104017	E VICTORIA ST	Other	40	Minor Arterial	0.22569	9163.881804	2068.196484	1774.339998	71.46490957	67.92931277	154.4622642	1196.732133	256.5957564	262.3327077
127560	AVALON BLVD	Other	40	Principal Arterial	0.169345	45741.92966	7746.167079	7464.324913	76.59208885	70.52614942	134.7239275	5704.861005	847.9961288	855.5839284
140628	UNKNOWN	Other	35	Minor Collector	0.159557	0	0	0	0	0	0	0	0	0
140630	UNKNOWN	Other	30	Minor Collector	0.193909	0	0	0	0	0	0	0	0	0
140632	UNKNOWN	Other	30	Minor Collector	0.129803	0	0	0	0	0	0	0	0	0
2668404	0	Ramp-Other	30	Ramps	0.183053	0	0	0	0	0	0	0	0	0
2672010	GARDENA FWY	State Route-Limited Access	65	Freeways	0.217432	108541.6217	23600.42189	21379.49842	379.6576993	329.285711	1511.980062	16121.03116	2210.287621	3048.17964
104016	AVALON BLVD	Other	40	Principal Arterial	0.167688	45741.92966	7670.372701	7391.288293	75.84265372	69.83606805	133.4056864	5649.040316	839.6986911	847.2122459
18101	GARDENA FWY	State Route-Limited Access	65	Freeways	0.044824	108008.1602	4841.357773	4343.12972	81.84770605	71.01293752	345.3674094	3323.726555	433.7304071	585.4635794
98470	E ARTESIA BLVD	Other	40	Minor Arterial	0.147316	5852.006447	862.0941817	790.061359	15.60013551	14.28816131	42.14452589	627.346068	75.45809751	87.25719355
104056	AVALON BLVD	Other	40	Principal Arterial	0.229735	38959.17664	8950.286445	8579.970924	101.7838133	94.16038792	174.3713199	6511.230946	1001.666006	1016.14938
104034	AVALON BLVD	Other	40	Principal Arterial	0.10199	38504.2658	3927.050069	3776.301742	41.59353753	38.1531061	71.00168263	2871.214741	435.6213981	439.5825337
17567	SAN DIEGO FWY	Interstate	65	Freeways	0.588746	131351.5262	77332.68567	69531.51762	1408.534826	1218.016952	5174.616264	53374.72579	6424.714859	9732.076973
17827	SAN DIEGO FWY	Interstate	65	Freeways	0.266459	120745.1597	32173.63451	28631.3721	640.8440527	550.1515047	2351.266845	21809.93126	2647.057611	4174.38323
88750	SAN DIEGO FWY	Interstate	65	Freeways	0.060858	131525.6937	8004.390666	7161.889384	152.7574803	131.9742307	557.7695713	5462.814787	668.63039	1030.444206
93065	0	Ramp-Other	30	Ramps	0.247585	2467.887713	611.0119794	459.9997459	32.25549041	25.55326246	93.2034807	362.9535865	46.73230405	50.31385529
105014	VERA ST	Other	35	Principal Arterial	0.257157	6511.735789	1674.53844	1492.473885	46.23377537	45.76423087	90.06654862	1193.653002	159.6035542	139.2173299
105023	E DEL AMO BLVD	Other	50	Principal Arterial	0.796681	29252.93051	23305.25393	21983.04716	353.8474109	344.8925579	623.4667986	15357.3108	2938.83632	3467.547212
105556	WILMINGTON AVE	Other	40	Minor Arterial	0.270879	23226.97455	6291.699639	5743.512808	88.85659087	89.03264922	370.2975911	4540.513403	608.0437038	594.9557006
127078	0	Ramp-Other	30	Ramps	0.267374	6250.920271	1671.333557	1439.079039	49.12377477	49.24244605	133.8882965	925.6918109	230.1668095	280.7249277
1646487	0	Centroid Connector	25	Tier 1 Centroid Co	0.352764	9802.915593	3458.115716	3041.073949	99.15012411	101.7140608	216.177582	2307.754612	400.5552377	332.7640997
1646488	0	Centroid Connector	25	Tier 1 Centroid Co	1.124468	401.562074	451.5437022	451.5321641	0.005758401	0.001946454	0.003833311	451.4733488	0.031491851	0.027323448

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2674146	E CARSON ST	Other	40	Minor Arterial	0.266139	17690.08242	4708.020845	4306.114122	90.9066272	103.4206895	207.5794059	3288.520897	486.1924909	493.4315702
2674147	MARTIN ST	Other	30	Major Collector	0.095254	71.333333	6.794785302	6.794785302	0	0	0	0	0	0
2674148	E 213TH ST	Other	30	Major Collector	0.1997	560.253912	111.8827062	74.38437083	9.5369401	10.82450305	17.13689225	66.73287571	4.945952526	2.70554259
2683299	WILMINGTON AVE	Other	45	Minor Arterial	0.374057	46514.48964	17399.07045	16338.7499	240.3192412	193.2741877	626.7271253	12204.64544	1899.400812	2234.70365
2683303	E 223RD ST	Other	45	Principal Arterial	0.094683	29425.5505	2786.099398	2712.513075	16.57783163	12.11374378	44.89474708	1856.651033	382.2530449	466.8549436
2683305	E 220TH ST	Other	30	Major Collector	0.193675	3409.219902	660.2806645	631.7029398	13.50457156	4.119075639	10.95407749	513.3626555	55.46319278	49.06160787
2731326	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.331084	0	0	0	0	0	0	0	0	0
17748	SAN DIEGO FWY	Interstate	65	Freeways	0.492361	133819.4139	65887.46047	59063.12896	1242.085282	1069.429124	4512.81711	45358.41245	5465.843998	8238.872506
98413	E CARSON ST	Other	40	Minor Arterial	0.221502	24319.14879	5386.740095	4914.516577	113.5379537	115.233505	243.4520601	3744.986781	582.1159723	555.812871
104391	BONITA ST	Other	25	Major Collector	0.059342	634.466873	37.65053318	37.20510696	0.150162023	0.139199598	0.156064594	22.31245397	5.696709934	4.409021706
104634	S EDGAR ST	Other	25	Major Collector	0.248464	0	0	0	0	0	0	0	0	0
104635	E 223RD ST	Other	45	Principal Arterial	0.248903	29425.51448	7324.09883	7130.654892	43.57984259	31.8446421	118.0194532	4880.763979	1004.867049	1227.268784
2663554	SAN DIEGO FWY	Interstate	65	Freeways	0.78342	131525.6937	103039.8589	92194.40962	1966.434408	1698.893356	7180.121554	70322.36289	8607.223703	13264.82303
2731328	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.585407	0	0	0	0	0	0	0	0	0
2732885	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.822204	0	0	0	0	0	0	0	0	0
2732893	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.181	0	0	0	0	0	0	0	0	0
2759879	E WATSON CENTER RD	Other	30	Major Collector	0.489183	1429.731384	699.4002876	686.5422578	3.425935417	1.900912306	7.531182145	532.0497472	76.18319579	78.30931425
2759883	LUCERNE ST	Other	25	Major Collector	0.300202	0.004326	0.001298674	0.001297473	1.20081E-06	0	0	0.001005677	0.000166012	0.000125785
104392	E 223RD ST	Other	45	Principal Arterial	0.252532	29425.51448	7430.884022	7234.619676	44.21523569	32.30893625	119.7401741	4951.925405	1019.517987	1245.162335
2759882	BONITA ST	Other	25	Major Collector	0.28716	0	0	0	0	0	0	0	0	0
17806	SAN DIEGO FWY	Interstate	65	Freeways	0.2805	121774.1825	34157.6582	30407.07856	680.678923	584.2447001	2485.656021	23321.67475	2780.93551	4304.468299
93127	0	Ramp-Other	30	Ramps	0.097966	2618.89901	256.5630604	193.8256189	13.11352215	13.7583034	35.86561593	124.1850679	29.99669457	39.64385635
98412	E CARSON ST	Other	40	Minor Arterial	0.096288	30976.87568	2982.701406	2793.254135	47.10818271	46.41001209	95.92907608	2107.535635	331.5759725	339.5067509
104394	BONITA ST	Other	25	Major Collector	0.098283	634.469422	62.3575582	61.61983706	0.248700709	0.230544202	0.258476231	36.95437645	9.434997184	7.302301589
104395	E 220TH ST	Other	25	Major Collector	0.251598	0.004326	0.001088413	0.001087407	1.00639E-06	0	0	0.000842853	0.000139134	0.00010542
1656507	0	Ramp-Other	30	Ramps	0.129176	10780.53399	1392.586259	1321.554156	13.56683431	13.41933186	44.04593619	1022.081109	135.9612662	163.5117812
1656508	0	Ramp-Other	30	Ramps	0.213602	2878.084572	614.7646207	591.9015775	4.631785071	4.317711525	13.91354663	461.7054342	59.20273517	70.99340815
2671100	0	Ramp-Other	30	Ramps	0.145291	2618.89901	380.5024561	287.4580773	19.44834684	20.40460629	53.19142564	184.1758641	44.48737063	58.79484243
2671102	0	Ramp-Other	30	Ramps	0.213627	9167.146832	1958.350076	1876.672693	15.88649042	14.73173779	51.05915462	1456.840524	194.383736	225.4484339
2671103	0	Ramp-Other	30	Ramps	0.124485	10780.53399	1342.014774	1273.562188	13.0741575	12.93201157	42.44641703	984.964443	131.0238607	157.5738843
2732891	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.188727	0	0	0	0	0	0	0	0	0
2683295	BONITA ST	Other	25	Major Collector	0.191948	634.466873	121.7846473	120.343869	0.485715009	0.450255879	0.5048075	72.17200153	18.42661316	14.26144886
2732892	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.130243	0	0	0	0	0	0	0	0	0
98434	E CARSON ST	Other	40	Minor Arterial	0.15519	40781.18362	6328.831886	6035.625431	73.62561815	70.89128628	148.6895504	4581.382241	694.2998723	736.3544378
2683297	BONITA ST	Other	25	Major Collector	0.165069	634.469422	104.731233	103.4922101	0.417699676	0.387205325	0.434117934	62.06589101	15.84633711	12.26441624
2732884	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.150338	0	0	0	0	0	0	0	0	0
104878	E 220TH ST	Other	25	Major Collector	0.13366	0.004326	0.000578213	0.000577679	5.3464E-07	0	0	0.000447761	7.3914E-05	5.60035E-05
2671101	0	Ramp-Other	30	Ramps	0.094181	12045.2314	1134.431939	1088.342381	9.046060375	8.398488018	28.64500903	845.8465747	111.8008493	130.6949575
104909	E 223RD ST	Other	45	Principal Arterial	0.325927	29425.5505	9590.581397	9337.275425	57.0658189	41.69910299	154.5410499	6391.144146	1315.828482	1607.053338
2759880	E WATSON CENTER RD	Other	30	Major Collector	0.265456	1429.699691	379.5223612	372.5449737	1.859070659	1.031522994	4.08679387	288.7114377	41.33993088	42.49360504
2759881	LUCERNE ST	Other	25	Major Collector	0.275004	0.031693	0.008715702	0.008669501	1.98003E-05	1.07252E-05	1.56752E-05	0.00650247	0.00104859	0.001118716
2683301	E 223RD ST	Other	45	Principal Arterial	0.05436	29425.5505	1599.572925	1557.325082	9.517769057	6.954818835	25.77525481	1065.952179	219.4615245	268.0336991
104890	ACARUS AVE	Other	30	Major Collector	0.341355	47.895505	16.34937011	16.3493684	6.8271E-07	3.41355E-07	6.8271E-07	0.000112647	7.828262128	8.520993969
105011	VERA ST	Other	35	Major Collector	0.265627	3361.324397	892.8585156	853.6639111	18.52164052	5.649348927	15.02361502	704.0814001	69.97666744	60.65778404
105012	E 220TH ST	Other	30	Major Collector	0.24067	3409.219902	820.4969538	784.9848794	16.7814392	5.118564265	13.6120709	637.929471	68.92126813	60.96634654
105015	E CARSON ST	Other	40	Minor Arterial	0.253252	17761.41575	4498.114062	4115.668493	86.50474057	98.41284614	197.5279824	3129.283924	462.6500464	469.5385945
2732940	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.065467	0	0	0	0	0	0	0	0	0
2732941	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.24956	0	0	0	0	0	0	0	0	0
2732942	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.299619	0	0	0	0	0	0	0	0	0
104889	E CARSON ST	Other	40	Minor Arterial	0.149668	14468.33769	2165.447166	2023.306934	34.65048011	34.70834984	72.78140231	1551.35588	219.9565722	230.6418468
2732939	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.19374	0	0	0	0	0	0	0	0	0
140584	E DEL AMO BLVD	Other	50	Principal Arterial	0.582668	27911.16409	16262.94216	15595.25926	179.8060687	177.576725	310.3000986	10728.20213	2180.859109	2525.770103
1646489	0	Centroid Connector	25	Tier 1 Centroid Co	0.626587	7415.23641	4646.290736	4332.676121	98.81264145	107.179697	107.6222773	3589.495225	385.5430696	357.6378252
1646490	0	Centroid Connector	25	Tier 1 Centroid Co	0.7055	10344.64238	7298.145198	6427.177343	223.2059616	216.0071348	431.7547586	5144.107018	679.9520904	603.118233
2683307	E 213TH ST	Other	30	Major Collector	0.492522	896.385344	441.4895024	410.2141451	7.610203683	9.541518874	14.12363475	292.5174266	45.7861769	36.7773053
2683309	LEAPWOOD AVE	Other	35	Major Collector	0.447292	342.253536	153.0872686	152.9626531	0.07721065	0.027370245	0.020034656	117.3801934	20.54821562	15.03424407
2732886	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.4814	0	0	0	0	0	0	0	0	0
2732887	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.509615	0	0	0	0	0	0	0	0	0
140582	LEAPWOOD AVE	Other	35	Major Collector	0.094257	342.253536	32.25979154	32.23353154	0.016270455	0.00576768	0.004221865	24.73530689	4.330086744	3.168137913
153301	GALWAY AVE	Other	30	Major Collector	0.053074	71.38442	3.788656707	3.788640042	9.02258E-06	4.40514E-06	3.23751E-06	0.001956201	0.000374384	0.000364088
105505	E 213TH ST	Other	30	Major Collector	0.248756	631.587245	157.1111167	110.4013725	11.87967487	13.4835257	21.34654365	83.12570471	6.16091821	3.370154994
1646491	0	Centroid Connector	25	Tier 1 Centroid Co	0.093131	7602.242	708.0043997	619.3797253	22.4188417	23.22123288	42.98459983	493.4374785	67.87929712	58.0629497
2674149	MARTIN ST	Other	30	Major Collector	0.162662	71.333333	11.60322261	11.60322261	0	0	0	0	0	0
17111	SAN DIEGO FWY	Interstate	65	Freeways	0.423552	147996.8624	62684.36706	56573.30548	1114.501056	960.4933224	4036.067197	42956.04147	5443.910471	8173.353546
17336	SAN DIEGO FWY	Interstate	65	Freeways	0.404539	146082.1737	59095.93647	53418.14708	1029.588474	887.5766655	3760.624245	40802.68345	5104.630598	7510.833033
105365	WILMINGTON AVE	Other	40	Minor Arterial	0.085219	47466.59709	4045.055938	3724.049928	56.94912814	46.22007163	217.8368097	2755.06993	448.6006442	514.3003982

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
127102	S ALAMEDA ST	Other	45	Principal Arterial	0.344244	25892.37594	8913.295063	6778.551291	219.9942055	194.6838182	1720.065748	5202.746918	779.7271716	791.2577851
2674143	E 220TH ST	Other	30	Minor Collector	0.584362	0	0	0	0	0	0	0	0	0
2683317	E CARSON ST	Other	35	Minor Arterial	0.269188	13078.56521	3520.592811	3359.352354	47.99113894	43.06011439	70.18920325	2503.2151	415.0701196	402.6629806
2683319	E 223RD ST	Other	45	Principal Arterial	0.317588	32605.99262	10355.27198	9876.689811	62.45337849	47.37756791	368.7512274	6887.009619	1331.025611	1658.65458
2731314	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.760779	0	0	0	0	0	0	0	0	0
2683313	E 223RD ST	Other	45	Principal Arterial	0.236307	32605.99262	7705.024298	7348.92672	46.46954706	35.25212206	274.3759093	5124.401999	990.3732796	1234.151441
17344	SAN DIEGO FWY	Interstate	65	Freeways	0.426417	130065.1903	55462.00827	49743.8084	1030.92978	894.8727771	3792.397307	37997.17506	4610.812636	7135.82071
105481	WILMINGTON AVE	Other	40	Minor Arterial	0.275576	15727.81574	4334.208551	3877.933922	58.10764313	69.85294826	328.3140373	3065.163972	420.0227501	392.7471993
127093	0	Ramp-Other	30	Ramps	0.198819	14730.64746	2928.732598	2772.713896	30.35144491	24.89454113	100.7727162	2028.719413	339.1550591	404.8394236
2671106	0	Ramp-Other	30	Ramps	0.179523	17931.67206	3219.147563	3036.348612	38.3576222	30.36172666	114.0796014	2210.028062	366.2399613	460.0805888
98330	WILMINGTON AVE	Other	40	Minor Arterial	0.068343	19137.03564	1307.882427	1184.641712	19.17614866	18.77708705	85.2874788	941.315029	123.737429	114.7141204
127085	0	Ramp-Other	30	Ramps	0.115466	1460.503347	168.6384795	118.5441329	10.66994864	8.079621579	31.34477632	75.66219226	20.06917306	22.81276773
127088	WILMINGTON AVE	Other	40	Minor Arterial	0.110874	34657.77223	3842.645838	3524.734769	54.19468909	46.91226081	216.8041191	2651.173889	409.2663971	456.3854717
2671105	0	Ramp-Other	30	Ramps	0.154151	1460.503347	225.1380514	158.2604112	14.2447409	10.78656701	41.84633238	101.0115757	26.79302215	30.45581347
93015	0	Ramp-Other	30	Ramps	0.149714	17931.67206	2684.62235	2532.176357	31.98850871	25.32029626	95.13718822	1843.062679	305.4274358	383.6862423
2671104	0	Ramp-Other	30	Ramps	0.144063	14730.64746	2122.141266	2009.091093	21.99246655	18.03842831	73.0192779	1469.997358	245.749628	293.3441064
2683325	E 223RD ST	Other	45	Principal Arterial	0.278414	32605.99262	9077.96483	8658.415044	54.74984861	41.53361649	323.2663206	6037.507387	1166.845613	1454.062044
2731315	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.494224	0	0	0	0	0	0	0	0	0
127095	0	Ramp-Other	30	Ramps	0.129947	4426.12571	575.1617576	444.9801603	11.26227375	8.400322066	110.5190015	355.1031997	45.90542353	43.97153707
127096	0	Ramp-Other	30	Ramps	0.141913	8607.368973	1221.497553	971.8836812	35.57308223	28.75282618	185.2879634	767.5947155	96.72795671	107.5610089
2674145	ARNOLD CENTER RD	Other	30	Minor Collector	0.263227	0	0	0	0	0	0	0	0	0
2683327	E CARSON ST	Other	35	Minor Arterial	0.241923	13078.56521	3164.005731	3019.096689	43.13030412	38.69872377	63.08001329	2249.67423	373.0292901	361.8788217
2731311	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.265694	0	0	0	0	0	0	0	0	0
2731312	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.211586	0	0	0	0	0	0	0	0	0
2731313	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.171067	0	0	0	0	0	0	0	0	0
92947	0	Ramp-Other	30	Ramps	0.10232	5290.745086	541.3490372	504.0466717	6.632402659	3.780161342	26.88980149	405.0209263	44.62313772	54.40260757
105699	WILMINGTON AVE	Other	40	Minor Arterial	0.544086	20900.30183	11371.56162	10453.32175	170.400124	175.4138868	572.4258548	8161.164953	1162.937422	1129.21938
1646492	0	Centroid Connector	25	Tier 1 Centroid Co	0.41088	4353.825976	1788.900017	1365.035599	87.50941058	97.58944663	238.7655605	1211.430929	79.53844254	74.06622888
1646493	0	Centroid Connector	25	Tier 1 Centroid Co	0.39538	1466.899343	579.9826622	379.2209333	59.45707518	69.99410163	71.31055216	336.8003727	24.32478898	18.09577121
2752048	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.561518	0	0	0	0	0	0	0	0	0
105596	WILMINGTON AVE	Other	40	Minor Arterial	0.225088	19433.40249	4374.225699	4108.643225	36.64577574	32.72128566	196.2154117	3184.529378	467.2584134	456.855434
2683329	E 213TH ST	Other	30	Major Collector	0.145298	560.253912	81.40377291	54.12068259	6.938899963	7.875706784	12.46848357	48.55359727	3.598582925	1.968502389
2683331	WILMINGTON AVE	Other	40	Minor Arterial	0.042967	19433.40249	834.9950046	784.2980233	6.995304265	6.246159194	37.45551781	607.8941294	89.19485822	87.20903571
105843	E DEL AMO BLVD	Other	45	Principal Arterial	0.22384	43735.2504	9789.698449	9430.733061	89.9047323	77.92704182	191.133613	6800.088032	1226.170359	1372.540163
2683333	E DEL AMO BLVD	Other	50	Principal Arterial	0.044815	29252.93051	1310.970081	1236.593139	19.90466915	19.40093963	35.07133292	863.8813821	165.315791	195.0569027
17519	GARDENA FWY	State Route-Limited Access	65	Freeways	0.701007	110776.2722	77654.94225	70348.7797	1271.973372	1105.973198	4928.215979	53710.51365	6964.884623	9673.381427
105034	E UNIVERSITY DR	Other	45	Minor Arterial	0.788575	2282.85618	1800.203312	1601.155534	50.21318815	47.41491872	101.4196717	1207.962266	169.0775527	167.8640296
105042	E VICTORIA ST	Other	40	Minor Arterial	0.318131	3206.590291	1020.115776	823.0722412	53.10719467	55.62861508	88.30772492	675.1903454	70.81281365	77.06908214
105059	W GREENLEAF BLVD	Other	40	Minor Arterial	0.701957	10619.98824	7454.775086	7117.345329	108.0366302	100.469088	128.9240381	5624.780816	766.0033643	726.5611488
140635	W WALNUT ST	Other	35	Minor Collector	0.540848	158.437374	85.69053685	85.68951735	0.000475946	0.000240677	0.000302875	0.048458358	0.003504695	0.003287274
1646494	0	Centroid Connector	25	Tier 1 Centroid Co	0.434294	4292.132756	1864.047503	1840.918572	9.209855711	5.104431968	8.814643828	1336.486135	260.4102595	244.0221767
1646495	0	Centroid Connector	25	Tier 1 Centroid Co	0.132511	6952.296525	921.2557648	809.9440163	32.1202417	29.70169307	49.48981379	438.8322021	190.4992794	180.6125346
1646496	0	Centroid Connector	25	Tier 1 Centroid Co	0.524784	6713.729139	3523.257632	3523.257632	0	0	0	3114.081422	232.3136912	176.862519
1646497	0	Centroid Connector	25	Tier 1 Centroid Co	0.421017	6493.504382	2733.875734	2402.927821	45.93292144	48.39749517	236.6174967	1966.539212	226.0532253	210.3353841
1646498	0	Centroid Connector	25	Tier 1 Centroid Co	0.382	7242.836513	2766.763548	2389.271853	47.86849182	52.02298171	277.6002217	1925.216925	241.6154637	222.4394641
2674160	CHARLES WILLARD ST	Other	30	Minor Collector	0.347758	38.666667	13.44664278	13.44664278	0	0	0	0	0	0
2676143	S CENTRAL AVE	Other	40	Principal Arterial	0.194102	15126.77855	2936.137971	2727.165785	51.03755818	49.53457729	108.4000502	2094.619387	332.3897313	300.156666
2683347	KEMP AVE	Other	30	Minor Collector	0.202303	71.333333	14.43094727	14.43094727	0	0	0	0	0	0
2732902	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.212541	0	0	0	0	0	0	0	0	0
2732903	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.30124	0	0	0	0	0	0	0	0	0
2732944	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.200919	0	0	0	0	0	0	0	0	0
2732946	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.517793	0	0	0	0	0	0	0	0	0
2732947	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.157899	0	0	0	0	0	0	0	0	0
105033	S CENTRAL AVE	Other	40	Principal Arterial	0.293953	10060.74761	2957.386942	2700.284627	61.68123415	62.49111141	132.9299691	2092.337377	322.3435731	285.6036769
140614	E UNIVERSITY DR	Other	45	Minor Arterial	0.385858	7268.665184	2804.672611	2742.430532	21.06760062	15.45475504	25.71972268	1958.603034	375.7495078	365.6336106
140615	CANEY AVE	Other	25	Minor Collector	0.062557	5147.479219	322.0108575	318.5320261	1.384758999	0.706710308	1.387362059	229.8227119	44.41625528	41.87418828
2683345	E TURMONT ST	Other	30	Major Collector	0.247565	266.241765	65.91214255	65.91071881	0.00041071	0.000205727	0.000807309	46.1334382	1.236533949	0.881110572
2732905	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.393061	0	0	0	0	0	0	0	0	0
2732910	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.224207	0	0	0	0	0	0	0	0	0
2744650	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.266101	0	0	0	0	0	0	0	0	0
1646499	0	Centroid Connector	25	Tier 1 Centroid Co	0.366232	5108.812552	1871.010639	1850.644263	8.106895438	4.13734561	8.122134718	1345.467836	260.0293173	245.1471094
2683339	E TURMONT ST	Other	30	Major Collector	0.251894	266.241765	67.06470315	67.06325451	0.000417892	0.000209324	0.000821426	46.94014211	1.258156373	0.896517951
2683341	BRENNER DR	Other	25	Minor Collector	0.241062	38.666667	9.32106408	9.32106408	0	0	0	0	0	0
2732911	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.254272	0	0	0	0	0	0	0	0	0
2732912	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.119994	0	0	0	0	0	0	0	0	0
2732913	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.187662	0	0	0	0	0	0	0	0	0

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2683343	E TURMONT ST	Other	30	Major Collector	0.152595	266.241765	40.62716213	40.62628456	0.000253155	0.000126806	0.000497612	28.43589361	0.762179217	0.543102085
140610	KEMP AVE	Other	30	Minor Collector	0.275699	71.333333	19.66652857	19.66652857	0	0	0	0	0	0
2744648	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.257124	0	0	0	0	0	0	0	0	0
2674162	S CENTRAL AVE	Other	40	Principal Arterial	0.315047	15165.44522	4777.82802	4438.645218	82.83907221	80.39958358	175.9441459	3399.7772	539.501848	487.1843524
2674161	S CENTRAL AVE	Other	40	Principal Arterial	0.165162	15165.44522	2504.755263	2326.940176	43.42801818	42.14912703	92.23794237	1782.3182	282.8314639	255.4042476
17743	GARDENA FWY	State Route-Limited Access	65	Freeways	0.638429	110316.1475	70429.02771	63325.21917	1200.888729	1049.408924	4853.510886	48656.12436	6233.687718	8432.42776
93088	0	Ramp-Other	30	Ramps	0.325278	2452.335147	797.6906719	713.1039483	9.743295567	9.012482425	65.83094565	506.3611867	99.27337046	107.4693908
93107	0	Ramp-Other	30	Ramps	0.269	2874.00235	773.1066322	644.2775955	9.324001873	8.62790869	110.8771261	492.0466533	77.02162514	75.20931726
105053	S CENTRAL AVE	Other	40	Principal Arterial	0.084229	26735.4399	2251.899368	2087.182871	34.72060868	32.60830767	97.38758026	1565.174386	250.8863155	245.1234843
1646500	0	Centroid Connector	25	Tier 1 Centroid Co	0.438092	9144.080944	4005.948709	3416.372058	94.08022371	90.61139679	404.8850308	2651.353316	392.1275197	372.8912224
1646501	0	Centroid Connector	25	Tier 1 Centroid Co	0.260195	726.44684	189.0178355	176.3743201	4.931876535	4.669574216	3.042064639	137.4563537	22.83182191	16.08614477
2683351	E VICTORIA ST	Other	40	Minor Arterial	0.232566	8387.029563	1950.537917	1673.789448	65.14470414	63.431316	148.172449	1116.457413	232.905364	236.0515913
2683353	E RADBARD ST	Other	30	Minor Arterial	0.198418	71.333333	14.15381727	14.15381727	0	0	0	0	0	0
2683355	E WALNUT ST	Other	40	Minor Arterial	0.205779	3001.795339	617.7064431	575.723887	12.23435195	11.87571845	17.87248562	422.8559587	73.80044186	79.06748666
17733	GARDENA FWY	State Route-Limited Access	65	Freeways	0.124904	113228.6074	14142.70597	12808.42822	230.3789688	200.5207696	903.3780152	9764.468378	1279.109096	1764.850744
17866	GARDENA FWY	State Route-Limited Access	65	Freeways	0.103203	113190.1498	11681.56303	10483.79598	197.7026472	172.9486517	827.1157566	8054.110871	1037.234592	1391.9689
104530	E VICTORIA ST	Other	40	Minor Arterial	0.281172	8387.029563	2358.197876	2023.609327	78.75986495	76.68838086	179.1403035	1349.795601	281.5822907	285.3860755
140634	E RADBARD ST	Other	30	Minor Arterial	0.224979	71.333333	16.04850193	16.04850193	0	0	0	0	0	0
2674163	LYSANDER DR	Other	30	Minor Collector	0.244663	0	0	0	0	0	0	0	0	0
2674164	E MEADBROOK ST	Other	30	Minor Collector	0.063331	71.333333	4.517611312	4.517611312	0	0	0	0	0	0
2674165	TAMCLIFF AVE	Other	30	Minor Collector	0.144608	71.333333	10.31537062	10.31537062	0	0	0	0	0	0
2683349	SUDBURY CT	Other	30	Minor Collector	0.079745	71.333333	5.68847664	5.68847664	0	0	0	0	0	0
2732670	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.310456	0	0	0	0	0	0	0	0	0
105041	S CENTRAL AVE	Other	40	Principal Arterial	0.240597	23860.81444	5740.840371	5358.059678	76.68464477	72.53092331	233.5651254	4063.73491	624.9411515	577.9567558
98390	E ARTESIA BLVD	Other	45	Minor Arterial	0.065171	5807.893547	378.5062304	341.436539	4.349562787	3.97775376	28.7423748	229.4338764	54.1362921	57.86637064
140633	S CENTRAL AVE	Other	40	Principal Arterial	0.125577	23789.4811	2987.411669	2787.623429	40.02472033	37.85673037	121.9067892	2121.022452	326.1812698	301.6582731
2683357	E RADBARD ST	Other	30	Minor Arterial	0.066846	71.333333	4.768347978	4.768347978	0	0	0	0	0	0
2683359	E RADBARD ST	Other	30	Minor Arterial	0.189763	71.333333	13.53642727	13.53642727	0	0	0	0	0	0
105052	S CENTRAL AVE	Other	45	Minor Arterial	0.057057	16724.91445	954.2734437	887.499791	15.02616122	13.1355296	38.61196189	614.8877685	130.9796269	141.6323955
105058	S CENTRAL AVE	Other	40	Principal Arterial	0.338134	18432.31298	6232.591718	5969.576095	71.8990443	63.84596415	127.2706147	4430.492518	748.0800066	740.1707598
98375	W ARTESIA BLVD	Other	35	Minor Arterial	0.040676	13223.55006	537.8811221	495.898258	8.850981592	8.090761551	25.04112093	345.1116283	73.89493042	76.89169929
105055	S CENTRAL AVE	Other	40	Principal Arterial	0.099368	28260.87441	2808.226568	2583.905272	45.96891219	42.87018381	135.4821995	1922.290388	317.6127574	313.3305378
105054	E ARTESIA BLVD	Other	40	Minor Arterial	0.040314	2969.166381	119.6989735	108.3738757	1.511764518	1.359733248	8.453600046	71.85110135	17.46872287	19.05405145
105808	S WILMINGTON AVE	Other	35	Minor Arterial	0.146839	15684.12518	2303.041258	2014.128044	45.74609504	46.37632069	196.7907976	1583.9406	211.2186656	189.0136228
1646502	0	Centroid Connector	25	Tier 1 Centroid Co	0.391939	3675.800931	1440.689741	1418.416885	7.450263411	4.462444217	10.36014828	1076.841277	186.0964327	155.4791755
2674154	S WILMINGTON AVE	Other	35	Minor Arterial	0.239633	13362.63027	3202.127179	2791.123524	59.39637067	61.2751866	290.3320982	2217.828788	293.3189019	257.4503316
2674155	GLENN CURTISS ST	Other	30	Minor Collector	0.117765	38.666667	4.553580039	4.553580039	0	0	0	0	0	0
2683364	KEMP AVE	Other	30	Minor Collector	0.132859	71.333333	9.477275289	9.477275289	0	0	0	0	0	0
2674151	E TURMONT ST	Other	30	Minor Collector	0.147616	71.333333	10.52994128	10.52994128	0	0	0	0	0	0
2683361	KEMP AVE	Other	30	Minor Collector	0.159698	0	0	0	0	0	0	0	0	0
2732894	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.246918	0	0	0	0	0	0	0	0	0
2732943	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.260301	0	0	0	0	0	0	0	0	0
2732945	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.092288	0	0	0	0	0	0	0	0	0
2674150	KEMP AVE	Other	30	Minor Collector	0.084277	0	0	0	0	0	0	0	0	0
2674152	KEMP AVE	Other	30	Minor Collector	0.101257	71.333333	7.2229993	7.2229993	0	0	0	0	0	0
2674153	S GUNLOCK AVE	Other	30	Minor Collector	0.095283	71.333333	6.796853968	6.796853968	0	0	0	0	0	0
2674157	HARMON AVE	Other	30	Minor Collector	0.237162	38.666667	9.170264079	9.170264079	0	0	0	0	0	0
2674158	CHARLES WILLARD ST	Other	30	Minor Collector	0.208036	38.666667	8.044058736	8.044058736	0	0	0	0	0	0
2732949	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.205659	0	0	0	0	0	0	0	0	0
2674159	BISHOP AVE	Other	30	Minor Collector	0.097234	38.666667	3.759714699	3.759714699	0	0	0	0	0	0
2732948	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.052915	0	0	0	0	0	0	0	0	0
2674156	HARMON AVE	Other	30	Minor Collector	0.090279	38.666667	3.49078803	3.49078803	0	0	0	0	0	0
2683368	S WILMINGTON AVE	Other	45	Minor Arterial	0.188903	15612.79185	2949.303219	2577.626942	58.85067722	59.66143945	253.1641597	2037.681618	271.7250839	243.1591089
140608	S WILMINGTON AVE	Other	45	Minor Arterial	0.070932	15612.79185	1107.446552	967.8842278	22.09809392	22.40253052	95.06169926	765.1378356	102.0312205	91.30485972
105773	S WILMINGTON AVE	Other	35	Minor Arterial	0.199219	13401.29693	2669.792974	2328.104904	49.37919889	50.94115335	241.3677176	1843.792939	243.8507982	214.0314464
2683370	E VICTORIA ST	Other	40	Minor Arterial	0.42674	3206.590291	1368.380341	1104.066715	71.23783678	74.6200628	118.4557259	905.6983695	94.98810269	103.3802431
2683416	MCKINLEY AVE	Other	30	Minor Collector	0.10254	97.340858	9.981331579	9.981318249	3.48636E-06	1.84572E-06	7.99812E-06	0.000619137	7.06501E-05	6.84967E-05
2683420	E ALONDRA BLVD	Other	40	Principal Arterial	0.0945	18602.20927	1757.908776	1717.206624	11.88544323	10.02492345	18.7917855	1254.104497	222.6119705	220.6136567
2732950	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.149175	0	0	0	0	0	0	0	0	0
2732953	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.349013	0	0	0	0	0	0	0	0	0
103411	W ALONDRA BLVD	Other	40	Principal Arterial	0.144506	6224.384764	899.4609447	870.522974	10.15135387	8.630785298	10.15583154	604.0440066	129.2225109	137.2564567
103792	W ALONDRA BLVD	Other	30	Principal Arterial	0.248652	3259.745526	810.5422445	800.0007345	3.785905978	2.319989799	4.435614259	553.3089634	111.7658967	134.9258739
103412	E ALONDRA BLVD	Other	40	Principal Arterial	0.609238	7971.053207	4856.268514	4740.715744	39.79012701	35.53370765	40.22893555	3281.088255	690.1013166	684.8420896
2732982	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.575077	0	0	0	0	0	0	0	0	0
103397	S MAIN ST	Other	40	Minor Arterial	0.264706	8318.000897	2201.824745	1899.16272	75.57752221	78.51139036	148.5731129	1448.612606	230.6016562	219.9484581
104075	AVALON BLVD	Other	40	Minor Arterial	0.115106	34482.05711	3969.091665	3750.608539	60.21245702	56.73810696	101.5325622	2820.072713	442.1662685	474.0580444

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
104077	E ALONDRA BLVD	Other	40	Principal Arterial	0.222997	18602.20927	4148.236861	4052.189688	28.04675326	23.65637941	44.34404011	2959.38138	525.3100698	520.5945355
146124	MCKINLEY AVE	Other	30	Minor Collector	0.258516	97.340858	25.16416925	25.16413564	8.78954E-06	4.65329E-06	2.01642E-05	0.00156092	0.000178118	0.000172689
2732993	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.301976	0	0	0	0	0	0	0	0	0
104076	AVALON BLVD	Other	40	Principal Arterial	0.257575	42053.20813	10831.85508	10336.53836	135.3099198	124.9691137	235.0376952	7806.954818	1218.184317	1261.000379
2683418	E ALONDRA BLVD	Other	40	Principal Arterial	0.019269	18602.20927	358.4459704	350.1466078	2.423498471	2.044129629	3.831734548	255.7178788	45.39164085	44.98417515
2676603	MCKINLEY AVE	Other	30	Minor Collector	0.130237	0	0	0	0	0	0	0	0	0
2676605	MCKINLEY AVE	Other	30	Minor Collector	0.130067	0	0	0	0	0	0	0	0	0
2683517	MCKINLEY AVE	Other	30	Minor Collector	0.050402	97.340858	4.906173925	4.906167373	1.71367E-06	9.07236E-07	3.93136E-06	0.000304327	3.4727E-05	3.36685E-05
2744551	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.193944	0	0	0	0	0	0	0	0	0
2676604	0	0	30	Minor Collector	0.082042	97.340858	7.986038672	7.986028007	2.78943E-06	1.47676E-06	6.39928E-06	0.00049537	5.65269E-05	5.48041E-05
2676602	MCKINLEY AVE	Other	30	Minor Collector	0.033546	97.340858	3.265396422	3.265392061	1.14056E-06	6.03828E-07	2.61659E-06	0.000202551	2.31132E-05	2.24087E-05
2685428	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.081485	30526.07708	2487.417391	2382.215852	25.97119638	24.32309217	54.90725055	1715.160877	304.4286794	362.6262959
2685436	E SEPULVEDA BLVD	Other	40	Principal Arterial	0.099648	30526.07708	3041.862529	2913.211575	31.76017398	29.74470748	67.14607232	2097.470099	372.2858078	443.4556683
106458	S ALAMEDA ST	Other	45	Principal Arterial	0.770006	17740.61131	13660.37715	11261.27678	418.6879065	418.9482841	1561.464182	9181.022806	1103.900498	976.3534768
106169	S ALAMEDA ST	Other	45	Principal Arterial	0.267768	22944.6895	6143.853617	4835.381242	110.257162	114.1932212	1084.021993	3835.404359	513.4986874	482.729443
106390	S HARBOR VIEW AVE	Other	30	Major Collector	0.255563	1603.303187	409.7449724	319.7719494	14.9411509	16.84529459	58.18657745	278.2647221	23.43075033	18.076477
106649	S SANTA FE AVE	Other	40	Minor Arterial	0.222696	22012.99159	4902.205174	4416.444328	84.36604909	81.56876084	319.8260367	3325.685779	519.4377535	497.9795795
140587	S PROSPECT AVE	Other	30	Minor Collector	0.257993	0.073498	0.01896197	0.017386148	0.000238128	0.000194785	0.001142909	0.014294102	0.00160936	0.001482686
1633394	METRO BLUE LINE	0	25	Metro Blue Line	2.096882	0	0	0	0	0	0	0	0	0
2666011	I 405 HOV	HOV-Interstate	65	HOV	1.655005	17617.7028	29157.38621	29157.38621	0	0	0	0	11027.12548	18113.71068
2734360	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.189448	0	0	0	0	0	0	0	0	0
2734361	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.104823	0	0	0	0	0	0	0	0	0
106719	S SANTA FE AVE	Other	40	Minor Arterial	0.124101	33905.64	4207.723829	3894.799699	55.55538129	51.72067788	205.6480709	2850.188933	498.714292	534.4791816
127111	0	Ramp-Other	30	Ramps	0.148022	11932.25206	1766.235815	1569.474014	32.32027243	25.27074718	139.1707815	1167.389419	171.8248192	230.2597752
140575	S MCHELEN AVE	Other	25	Minor Collector	0.160387	827.920607	132.7877024	128.9371416	1.047139778	0.653524418	2.149896635	94.57489851	10.46692603	8.71201446
1648156	0	Centroid Connector	25	Tier 1 Centroid Co	0.328065	2428.969302	796.8598141	741.3048516	16.4357701	15.64797941	23.47121293	567.5414362	91.56189596	82.20151979
1648157	0	Centroid Connector	25	Tier 1 Centroid Co	0.532067	194.249592	103.3537977	103.3537977	0	0	0	95.72732061	4.258455166	3.368021887
2686378	E CARSON ST	Other	35	Minor Arterial	0.119984	10064.25269	1207.549295	1117.497208	20.78138946	19.90888657	49.36181091	842.5032722	125.0077687	121.509965
127113	SAN DIEGO FWY	Interstate	65	Freeways	0.27379	154838.8276	42393.32261	38045.31517	777.879932	671.6491941	2898.478314	28444.1245	3829.320397	5771.870275
140570	E CARSON ST	Other	35	Minor Arterial	0.102555	10889.98476	1116.822387	1058.589491	16.90494807	15.14877368	26.17917414	785.8772859	126.0698566	122.3026289
140577	E 218TH ST	Other	25	Minor Collector	0.252922	827.920607	209.3993358	203.3272006	1.651285247	1.030574192	3.39027575	149.1397213	16.50580075	13.73839601
2670462	0	Ramp-Other	30	Ramps	0.085684	11932.25206	1022.403086	908.5055694	18.70890964	14.62822216	80.56038453	675.7549217	99.46249753	133.2881502
2671605	SAN DIEGO FWY	Interstate	65	Freeways	0.20058	143303.591	28743.83429	26001.77668	497.4926709	432.6711661	1811.893776	19436.96423	2630.949394	3933.863056
2671606	I 405 HOV	HOV-Interstate	65	HOV	0.286312	18021.52189	5159.777975	5159.777975	0	0	0	0	1962.922356	3195.328622
2734363	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.13601	0	0	0	0	0	0	0	0	0
92915	0	Ramp-Other	30	Ramps	0.124135	7315.045499	908.053173	679.2041609	36.07649244	29.65865099	163.1138687	460.1969229	100.5542623	118.4529758
2676301	ALAMEDA-CARSON CONNECTOR	0	30	Minor Collector	0.117482	2912.064774	342.1151938	326.808494	4.29457131	3.784342285	7.227786228	235.5078864	47.13301148	44.16759592
2686372	E 218TH ST	Other	25	Minor Collector	0.058327	827.920607	48.29012524	46.88981436	0.380807184	0.237663394	0.781840305	34.39349888	3.806445626	3.168247223
2676300	E CARSON ST	Other	35	Minor Arterial	0.034596	11528.5302	398.8410307	378.3661978	5.928576372	5.251245851	9.295010658	285.5076363	44.78612151	43.13674403
140572	S MCHELEN AVE	Other	25	Minor Collector	0.097542	827.920607	80.75703185	78.41524975	0.636835331	0.397451656	1.307495106	57.51728476	6.365633741	5.298355318
140576	E 221ST ST	Other	25	Minor Collector	0.136003	0	0	0	0	0	0	0	0	0
2734364	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.066897	0	0	0	0	0	0	0	0	0
2686374	E 221ST ST	Other	25	Minor Collector	0.057859	0	0	0	0	0	0	0	0	0
106391	E CARSON ST	Other	35	Minor Arterial	0.078685	10064.25269	791.9057231	732.8499452	13.62834736	13.05616365	32.37126693	552.5100844	81.97956629	79.68572142
98052	S SANTA FE AVE	Other	35	Major Collector	0.099042	17673.06188	1750.375394	1649.542845	18.40466407	15.93725736	66.49062759	1142.466697	221.4606294	276.5036544
106648	S SANTA FE AVE	Other	40	Minor Arterial	0.394915	19345.7939	7639.9442	6761.095654	140.6695405	137.3994614	600.7795441	5204.355298	805.9804545	750.7599012
1648160	0	Centroid Connector	25	Tier 1 Centroid Co	0.214033	3294.112111	705.0486975	663.0891594	10.24534042	10.23384299	21.48035466	527.3020285	74.08295698	61.70417393
2686390	E CARSON ST	Other	35	Minor Arterial	0.141728	92	13.038976	13.038976	0	0	0	0	0	0
1656196	0	Centroid Connector	25	Tier 1 Centroid Co	0.19489	6232.562812	1214.664166	1117.855811	18.21383473	17.78898174	60.80553929	832.7799436	150.7341038	134.3417635
140585	E CARSON ST	Other	35	Minor Arterial	0.073279	10064.32619	737.503759	682.504921	12.69208856	12.15920411	30.14754529	514.5543107	76.34767237	74.21138866
106394	E MONROE ST	Other	25	Major Collector	0.195329	0	0	0	0	0	0	0	0	0
106399	E DOMINGUEZ ST	Other	35	Major Collector	0.195487	1746.02959	341.3260865	317.5929788	3.639001843	2.904179699	17.1899261	245.3771894	35.66550979	36.55027965
130617	S ALAMEDA ST	Other	45	Principal Arterial	0.506255	20708.6924	10483.87907	8486.322794	247.9936182	252.0460411	1497.516618	6863.019259	844.8696361	771.3463298
1648161	0	Centroid Connector	25	Tier 1 Centroid Co	0.343767	3112.643831	1070.024232	815.0702026	40.01655584	43.71672323	171.2207502	640.7880611	90.37644812	83.90569334
1648162	0	Centroid Connector	25	Tier 1 Centroid Co	0.554249	3845.953345	2131.615796	1999.158093	42.07848044	39.52409533	50.85512697	1576.643365	221.5179909	200.9967365
1648163	0	Centroid Connector	25	Tier 1 Centroid Co	0.566497	0.077628	0.043976029	0.040070032	0.000730781	0.000634477	0.002540739	0.030759654	0.004579562	0.004731949
2676299	ALAMEDA-DEL AMO CONNECTOR	0	30	Minor Collector	0.172415	11685.37301	2014.733587	1679.311201	55.49227086	55.73240357	224.1977113	1357.425447	165.7150041	153.7569399
2686400	S SANTA FE AVE	Other	40	Minor Arterial	0.183529	24123.74028	4427.40593	3990.766387	87.81640323	91.00544112	257.8176985	3032.587698	456.7226183	441.013854
2734357	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.14183	0	0	0	0	0	0	0	0	0
2734358	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.268251	0	0	0	0	0	0	0	0	0
2734367	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.088992	0	0	0	0	0	0	0	0	0
106250	S ALAMEDA ST	Other	45	Principal Arterial	0.219775	19985.5227	4392.318251	3695.904692	67.08648688	65.95656338	563.3705089	2908.434273	403.9703127	380.4232553
106251	E MONROE ST	Other	25	Major Collector	0.159434	1491.910543	237.8612655	182.4025175	9.064149899	10.3344446	36.06015347	159.9412264	12.75514059	9.706150918
106393	S HARBOR VIEW AVE	Other	30	Major Collector	0.258528	111.392644	28.79811747	27.70960859	0.416648637	0.283055327	0.388804913	22.14261788	3.019668311	2.547322402
130618	E DOMINGUEZ ST	Other	35	Major Collector	0.076895	4970.066066	382.1732301	315.4850246	10.50637285	11.005261	45.17657168	246.4390257	35.1429333	33.90306563
106346	S ALAMEDA ST	Other	45	Principal Arterial	0.050756	25455.82618	1292.035914	1048.174581	31.63452625	32.42258675	179.8042201	842.0377777	106.7151908	98.71102786

Appendix F2. Link-Based VMT by Vehicle Type and Occupancy

								VMT by Vehicle Type				VMT by Occupancy		
Link ID	Road Name	Road Type	Speed	FacilityType	Length	Volume	VMT	Auto	Light-heavy Trucks	Medium-heavy Trucks	Heavy-heavy Trucks	DA	SR2	SR3
2734366	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.112654	0	0	0	0	0	0	0	0	0
106756	S ADRIATIC AVE	Other	40	Minor Arterial	0.129941	22012.99159	2860.39014	2576.953301	49.22678802	47.59459691	186.6154535	1940.506052	303.0869936	290.566353
140588	E DOMINGUEZ ST	Other	35	Major Collector	0.238162	1745.956092	415.8203948	386.9077819	4.433179382	3.537985106	20.94144843	298.9300703	43.44983944	44.52787188
140589	S PROSPECT AVE	Other	30	Minor Collector	0.257011	0.073498	0.018889794	0.017319971	0.000237221	0.000194043	0.001138559	0.014239694	0.001603235	0.001477042
1648164	0	Centroid Connector	25	Tier 1 Centroid Co	0.089935	23574.96513	2120.214489	1823.237058	46.10907661	47.87279325	202.995562	1379.388261	221.7995355	222.0492613
2686398	S ADRIATIC AVE	Other	40	Minor Arterial	0.137946	22012.99159	3036.604137	2735.706206	52.2593985	50.52665644	198.1118765	2060.050699	321.7586321	308.4666589
2686394	E MONROE ST	Other	25	Major Collector	0.081789	0	0	0	0	0	0	0	0	0
2686396	S SANTA FE AVE	Other	40	Minor Arterial	0.049307	22012.99159	1085.394576	977.8425319	18.67944095	18.06009489	70.81250849	736.3382761	115.0084299	110.2573873
140586	E MONROE ST	Other	25	Major Collector	0.076038	0	0	0	0	0	0	0	0	0
2734365	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.191816	0	0	0	0	0	0	0	0	0
106812	S SANTA FE AVE	Other	40	Minor Arterial	0.097846	24123.74028	2360.411492	2127.623035	46.81812569	48.51831804	137.4520132	1616.783047	243.4954765	235.1205616
2686402	S SANTA FE AVE	Other	40	Minor Arterial	0.252429	24123.74028	6089.531635	5488.969963	120.7842186	125.1704771	354.6069766	4171.074217	628.1842859	606.5781764
2734356	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.158109	0	0	0	0	0	0	0	0	0
2734359	0	Tier 2 Centroid Connector	25	Tier 2 Centroid Co	0.314311	0	0	0	0	0	0	0	0	0
								3392241.89	54979.36712	48580.71697	193146.861	2319154.091	447004.8918	617891.4717

Appendix G
Native American Consultation

ESA

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

August 30, 2021

Fatima Clark
ESA

Via Email to: fclark@esassoc.com

Re: Carson General Plan Update Project, Los Angeles County

Dear Ms. Clark:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
8/30/2021

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078 Gabrielino
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia Juaneno
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92581 Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 Cahuilla
San Jacinto, CA, 92581 Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Carson General Plan Update Project, Los Angeles County.

March 29, 2021

Gabrieleno Band of Mission Indians- Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Mr. Salas,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

The updated Carson General Plan will serve as the comprehensive vision and primary policy document for the City's overall approach to development, public services, and other issues for the next 20 years. State law requires that a General Plan contain at least the following seven elements: Land Use, Transportation, Housing, Conservation, Open Space, Noise, and Safety. As the Project requires a General Plan Amendment, the Project is subject to Section 65352.3 of the Government Code (Senate Bill (SB) 18 [2004]). Pursuant to SB 18, for the purpose of protecting Native American Cultural Places, the City of Carson is required to contact and consult with California Native American Tribes before adopting or amending a General Plan, or when designating land as open space. Cultural Places refer to places, features, and objects described in Public Resources Code Sections 5097.9 and 5097.993.[1]

At our request, the Native American Heritage Commission (NAHC) provided contact information for tribal representatives who may have knowledge about cultural resources in the area. In addition, we conducted a search of the Sacred Lands File for sites within the Planning Area. The Commission previously notified us that Native American Cultural Resources sites were not found in Planning Area.

The City of Carson feels that your comments regarding decisions that may affect ancestral tribal sites are very important. If you have any concerns or information regarding tribal cultural resources or traditional tribal cultural places in the Planning Area, or if you would like to be involved in the

[1] Governor's Office of Planning and Research, State of California Tribal Consultation Guideline, Supplemental to General Plan Guidelines, November 14, 2005. Pg. 4.

planning process, please let us know. Pursuant to California Government Code § 65352.3, you may request a consultation within 90 days of receiving this letter. We would appreciate receiving your comments by April 30, 2021.

Please forward any comments regarding this Project to:

City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Gabrieleno Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA 90707

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Mr. Dorame,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Gabrieleno/Tongva Nation
Sandonne Goad, Chairperson
106 ½ Judge John Aiso St. #231
Los Angeles, CA 90012

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Chairperson Goad,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

The updated Carson General Plan will serve as the comprehensive vision and primary policy document for the City's overall approach to development, public services, and other issues for the next 20 years. State law requires that a General Plan contain at least the following seven elements: Land Use, Transportation, Housing, Conservation, Open Space, Noise, and Safety. As the Project requires a General Plan Amendment, the Project is subject to Section 65352.3 of the Government Code (Senate Bill (SB) 18 [2004]). Pursuant to SB 18, for the purpose of protecting Native American Cultural Places, the City of Carson is required to contact and consult with California Native American Tribes before adopting or amending a General Plan, or when designating land as open space. Cultural Places refer to places, features, and objects described in Public Resources Code Sections 5097.9 and 5097.993.[1]

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planning process, please let us know. Pursuant to California Government Code § 65352.3, you may request a consultation within 90 days of receiving this letter. We would appreciate receiving your comments by April 30, 2021.

Please forward any comments regarding this Project to:

City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA 91778

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Mr. Morales,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Gabrieleno-Tongva Tribe
Charles Alvarez, Chairperson
23454 Vanowen Street
West Hills, CA 91307

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Mr. Alvarez,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
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Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Saboba Band of Luiseno Indians
Scott Cozart, Chairperson
P.O. Box 487
San Jacinto, CA 92583

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Chairperson Cozart,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

The updated Carson General Plan will serve as the comprehensive vision and primary policy document for the City's overall approach to development, public services, and other issues for the next 20 years. State law requires that a General Plan contain at least the following seven elements: Land Use, Transportation, Housing, Conservation, Open Space, Noise, and Safety. As the Project requires a General Plan Amendment, the Project is subject to Section 65352.3 of the Government Code (Senate Bill (SB) 18 [2004]). Pursuant to SB 18, for the purpose of protecting Native American Cultural Places, the City of Carson is required to contact and consult with California Native American Tribes before adopting or amending a General Plan, or when designating land as open space. Cultural Places refer to places, features, and objects described in Public Resources Code Sections 5097.9 and 5097.993.[1]

At our request, the Native American Heritage Commission (NAHC) provided contact information for tribal representatives who may have knowledge about cultural resources in the area. In addition, we conducted a search of the Sacred Lands File for sites within the Planning Area. The Commission previously notified us that Native American Cultural Resources sites were not found in Planning Area.

The City of Carson feels that your comments regarding decisions that may affect ancestral tribal sites are very important. If you have any concerns or information regarding tribal cultural resources or traditional tribal cultural places in the Planning Area, or if you would like to be involved in the

[1] Governor's Office of Planning and Research, State of California Tribal Consultation Guideline, Supplemental to General Plan Guidelines, November 14, 2005. Pg. 4.

planning process, please let us know. Pursuant to California Government Code § 65352.3, you may request a consultation within 90 days of receiving this letter. We would appreciate receiving your comments by April 30, 2021.

Please forward any comments regarding this Project to:

City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA 92539

Subject: Carson 2040 General Plan Project, City of Carson, Los Angeles County, California: SB 18 Native American Cultural Resources Consultation Notification

Dear Chairperson Redner,

The City of Carson requests your participation in the City's process of updating its General Plan. In order to provide Native American tribes with the opportunity to participate in local land use decisions at an early stage, in accordance with Senate Bill 18, we are seeking your comments on the proposed General Plan update. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

The updated Carson General Plan will serve as the comprehensive vision and primary policy document for the City's overall approach to development, public services, and other issues for the next 20 years. State law requires that a General Plan contain at least the following seven elements: Land Use, Transportation, Housing, Conservation, Open Space, Noise, and Safety. As the Project requires a General Plan Amendment, the Project is subject to Section 65352.3 of the Government Code (Senate Bill (SB) 18 [2004]). Pursuant to SB 18, for the purpose of protecting Native American Cultural Places, the City of Carson is required to contact and consult with California Native American Tribes before adopting or amending a General Plan, or when designating land as open space. Cultural Places refer to places, features, and objects described in Public Resources Code Sections 5097.9 and 5097.993.[1]

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ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
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Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address cultural places that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Anthony Morales, Tribal Chairman
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA, 91778

Subject: AB 52 Project Notifications and Request to Consult Letter for the Carson 2040 General Plan Project; City of Carson, Los Angeles County, California

Dear Mr. Morales:

Pursuant to California Assembly Bill (AB) 52, the City of Carson Planning Division (City) is providing you with notification of the Carson 2040 General Plan Project. Under California State law, the Project is subject to the California Environmental Quality Act (CEQA), and the City is required to prepare an Environmental Impact Report (EIR) to assess impacts for the Project. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

The updated Carson General Plan will serve as the comprehensive vision and primary policy document for the City's overall approach to development, public services, and other issues for the next 20 years. State law requires that a General Plan contain at least the following seven elements: Land Use, Transportation, Housing, Conservation, Open Space, Noise, and Safety.

With this letter, the City is seeking input on concerns that uniquely or significantly affect your Tribe related to the proposed Project. Early identification of Tribal concerns will allow the City to consider ways to avoid or minimize potential impacts to Tribal resources and practices as project planning and alternatives are developed and refined. We would be pleased to discuss details of the proposed Project with you. In accordance with the requirements, you have 30 calendar days from receipt of this letter to notify us in writing that you wish to consult on this Project. Please provide your contact information and send your request to:

City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the proposed Project.

Alvaro Betancourt

Sincerely,
Alvaro Betancourt
Planning Manager

March 29, 2021

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, California 90707

Subject: AB 52 Project Notifications and Request to Consult Letter for the Carson 2040 General Plan Project; City of Carson, Los Angeles County, California

Dear Mr. Dorame:

Pursuant to California Assembly Bill (AB) 52, the City of Carson Planning Division (City) is providing you with notification of the Carson 2040 General Plan Project. Under California State law, the Project is subject to the California Environmental Quality Act (CEQA), and the City is required to prepare an Environmental Impact Report (EIR) to assess impacts for the Project. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the proposed Project.

Alvaro Betancourt

Sincerely,
Alvaro Betancourt
Planning Manager

March 29, 2021

Sadonne Goad, Tribal Chairwoman
Gabrielino/Tongva Nation
106 ½ Judge John Aiso Street #231
Los Angeles, California 90012

Subject: AB 52 Project Notifications and Request to Consult Letter for the Carson 2040 General Plan Project; City of Carson, Los Angeles County, California

Dear Chairperson Goad:

Pursuant to California Assembly Bill (AB) 52, the City of Carson Planning Division (City) is providing you with notification of the Carson 2040 General Plan Project. Under California State law, the Project is subject to the California Environmental Quality Act (CEQA), and the City is required to prepare an Environmental Impact Report (EIR) to assess impacts for the Project. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Charles Alvarez, Chairperson
Gabrielino-Tongova Tribe
23454 Vanowen Street
West Hills, California 91307

Subject: AB 52 Project Notifications and Request to Consult Letter for the Carson 2040 General Plan Project; City of Carson, Los Angeles County, California

Dear Mr. Alvarez:

Pursuant to California Assembly Bill (AB) 52, the City of Carson Planning Division (City) is providing you with notification of the Carson 2040 General Plan Project. Under California State law, the Project is subject to the California Environmental Quality Act (CEQA), and the City is required to prepare an Environmental Impact Report (EIR) to assess impacts for the Project. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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With this letter, the City is seeking input on concerns that uniquely or significantly affect your Tribe related to the proposed Project. Early identification of Tribal concerns will allow the City to consider ways to avoid or minimize potential impacts to Tribal resources and practices as project planning and alternatives are developed and refined. We would be pleased to discuss details of the proposed Project with you. In accordance with the requirements, you have 30 calendar days from receipt of this letter to notify us in writing that you wish to consult on this Project. Please provide your contact information and send your request to:

City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt

Alvaro Betancourt
Planning Manager

March 29, 2021

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians- Kizh Nation
P.O. Box 393
Covina, California 9172

Subject: AB 52 Project Notifications and Request to Consult Letter for the Carson 2040 General Plan Project; City of Carson, Los Angeles County, California

Dear Mr. Salas:

Pursuant to California Assembly Bill (AB) 52, the City of Carson Planning Division (City) is providing you with notification of the Carson 2040 General Plan Project. Under California State law, the Project is subject to the California Environmental Quality Act (CEQA), and the City is required to prepare an Environmental Impact Report (EIR) to assess impacts for the Project. The Planning Area for the General Plan update includes Carson and its Sphere of Influence, and is shown on the map attached to this correspondence.

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City of Carson, Planning Division
ATTN: Alvaro Betancourt, Planning Manager
701 E. Carson Street
Carson, CA 90745
Email: abetancourt@carsonca.gov
Phone No: (310) 952-1761

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the proposed Project.

Sincerely,

Alvaro Betancourt
Alvaro Betancourt
Planning Manager

GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The Gabrielino Tribal Council - San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

April 5,2021

Project Name: Carson 2040 General Plan Project, City of Carson

Dear Alvaro Betancourt

Thank you for your letter dated March 29, 2021 regarding SB18 consultation. The above proposed project location is within our Ancestral Tribal Territory; therefore, our Tribal Government requests to schedule a consultation with you as the lead agency, to discuss the project and the surrounding location in further detail.

Please contact us at your earliest convenience. ***Please Note :AB 52, "consultation" shall have the same meaning as provided in SB 18 (Govt. Code Section 65352.4).***

Thank you for your time,

Andrew Salas, Chairman
Gabrieleno Band of Mission Indians – Kizh Nation
1(844)390-0787

From:	Stefanie Edmondson
To:	Luci Hise-Fisher
Subject:	Tribal Consultation
Date:	Thursday, October 7, 2021 8:42:47 PM
Attachments:	image001.png

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Thursday, October 7, 2021 11:25 AM
To: Alvie Betancourt; Stefanie Edmondson
Subject: Carson 2040 General Plan Project

Hello Alvie

I spoke with Stephnie today 10/7/2021. Since the project is a general plan update with no ground disturbance taking place we do not need to consult. We are okay with the General plan update, I will go ahead and cancel today's 1pm meeting.

Thank you

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area " . "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

Stefanie Edmondson | Senior Planner
City of Carson | Community Development | Planning Division
701 East Carson Street, Carson, CA 90745
P: 310.952.1761 x 1322
F: 310.835.5749

Disclaimer