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DRAFT
ENVIRONMENTAL IMPACT REPORT

**CITY OF BAKERSFIELD WASTEWATER TREATMENT
PLANT No. 3 EXPANSION & UPGRADE
(CUP# 05-0669)**

SCH NO. 2006041012

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LIST OF ACRONYMS AND SHORT TERMS

µg/m ³	Micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ANSI	American National Standards Institute
AQMD	Air Quality Management District
ARB	Air Resources Board
ASTM	American Society for Testing Materials
ATC	Authority to Construct
ATCM	Airborne Toxics Control Measure
AYC	American Yeast Company
BMP'S	Best Management Practices
BOD	Biological Oxygen Demand
BPTC	Best Practicable Treatment Controls
Btu	British Thermal Units
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COG	Council of Governments
CRPAQS	California Regional Particulate Air Quality Study
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dBA	A-weighted Decibel Scale
DEIR	Draft Environmental Impact Report
DHS	Department of Health Services
DOGGR	Department of Oil, Gas, and Geothermal Resources
DTSC	Department of Toxic Substances Control
EDC	Economic Development Council
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
g/bhp-hr	grams/brake horsepower-hour
GAMAQI	Guide to Assessing and Mitigation Air Quality Impacts
GET	Golden Empire Transit
GPD	Gallons Per Day
H ₂ S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HC	Hydrocarbon
HP	Horsepower
IS	Initial Study
JEIP	Joint Emission Inventory Report
KDWD	Kern Delta Water District
LAFCO	Local Agency Formation Commission
lb/day	pounds per day

LIST OF ACRONYMS AND SHORT TERMS

LOS	Level of Service
MBGP	Metropolitan Bakersfield General Plan
MCL'S	Maximum Concentration Levels
MDB&M	Mount Diablo Base and Meridian
MGD	Million Gallons Per Day
MMBtu/hr	Million British Thermal Units per Hour
MMscf/hr	Millions of standard cubic feet per hour
MSDS	Materials Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NOP	Notice of Preparation
NOx	Nitrogen Oxides
NPDES	Nation Pollutant Discharge Elimination System
OADP	Ozone Attainment Demonstration Plan
OAL	Office of Administrative Law
OSHA	Occupation Safety and Health Administration
PG&E	Pacific Gas and Electric
PM	Particulate Matter
ppm	parts per million
ppmv	parts per million by volume
PRC	Public Resources Code
PTO	Permit to Operate
RFP	Reasonable Further Progress
ROW	Right of Way
RTIF	Regional Transportation Impact Fund
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SOx	Sulfur Dioxides
SPCCC	Spill Prevention Co
SUSMP	Standard Urban Storm Water Mitigation Plan
SWPPP	Strom Water Pollution Prevention Permit
TAC	Toxic Air Contaminants
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Compound
UN/ISDR	United Nations/ International Strategy for Disaster Reduction
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WDR	Waste Discharge Requirement
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION AND PURPOSE¹

1.1 PURPOSE OF THE EIR

The City of Bakersfield (City) is the Lead Agency under the California Environmental Quality Act (CEQA), and is responsible for preparing the Environmental Impact Report (EIR) for the City of Bakersfield Wastewater Treatment Plant No.3 Expansion & Upgrade (Project), Conditional Use Permit 05-0669 (State Clearinghouse No. 2006041012). This EIR has been prepared in conformance with CEQA (California Public Resources Code Section 21000 et seq.), California CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.), and the implementation procedures for CEQA, as adopted by the City. The primary CEQA Guidelines sections governing content of this document are Sections 15120 through 15132 (Content of an EIR).

The purpose of this EIR is to identify existing conditions on the project site, assess any potential environmental impacts from the project, and outline feasible mitigation measures to reduce any potentially significant impacts. In accordance with Section 15121 of CEQA, the main purposes of this EIR are to (1) provide decision-makers and the public with specific information regarding the environmental effects associated with development of the site; (2) identify significant effects and ways to minimize them; and (3) describe reasonable alternatives to the Project. Mitigation measures are outlined that may be adopted as Conditions of Approval to reduce impacts to a less than significant level. Further, this EIR is the primary reference document in the formulation and implementation of a mitigation monitoring program for the proposed Project.

The City, as Lead Agency, is responsible for processing and approving the Project. Other public agencies will consider the information in this EIR in their decision-making and/or permit processes, along with other information that may be presented during the CEQA process. Environmental impacts are not always mitigable to a level considered less than significant. In those cases, impacts are considered significant and unavoidable. Per Section 15093(b) of the State CEQA Guidelines, if a public agency approves a Project that has significant unavoidable impacts, the agency shall state in writing the specific reasons for approving the Project, which shall be based on the Final EIR and/or any other information in the public record for the Project. According to Section 15093 of the State CEQA Guidelines, such statements are called "statements of overriding considerations."

1.2 COMPLIANCE WITH CEQA

Per CEQA statutes, a 45-day review period is required for the Draft EIR. The review period is required in order to allow responsible and trustee agencies as well as any interested parties to review the document and submit comments to the Lead Agency. Per Sections 15085(a) and 15087(a)(1) of the State CEQA Guidelines, as amended, the City, as the Lead Agency, must (1) publish a notice of availability of a Draft EIR in a newspaper of general circulation (the Bakersfield Californian); and (2) prepare and transmit a Notice of Completion (NOC) to the State Clearinghouse. Copies of these documents can be viewed at the City of Bakersfield Planning Department.

Any public agency or members of the public desiring to comment on the Draft EIR must submit their comments in writing to the individual identified on the document's NOC prior to the end of the 45-day public review period. During the public review period, the City will hold a regularly scheduled public hearing regarding the Draft EIR. At this hearing the public will be given opportunity to orally comment on the Draft EIR. Any comments or concerns raised at the public hearing will be recorded and will have the same standing and response requirements as written comments submitted during the public review period. Upon the close of the public review period,

¹ text adapted from previous COB EIR documents

the City will prepare responses to all relevant oral and written comments received from both citizens and public agencies during the 45-day review period.

The Final EIR (FEIR) will consist of (1) the Draft EIR (2) revisions to the Draft EIR and (3) responses to comments on the project submitted in writing or raised at public hearings. After the FEIR is completed, and at least ten days prior to its final certification, each commenter and commenting agency will be provided with a copy of the responses to their submitted comments.

1.3 EIR SCOPING PROCESS

In compliance with the State CEQA Guidelines, the City has taken steps to make the most of all opportunities to participate in the environmental process. During the preparation of the Draft EIR, the City distributed an Initial Study/Notice of Preparation (IS/NOP) to various Federal, State, Regional, and local government agencies and other interested parties to solicit comments as well as inform the public of the proposed Project. Further, the City held a Public Scoping Meeting for the project on April 25, 2006.

1.3.1 INITIAL STUDY

In accordance with Section 15063(a) of the State CEQA Guidelines, as amended, the City completed an Initial Study. The Initial Study evaluated: Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation/Traffic, and Utilities and Service Systems. The Initial Study indicated that several environmental issue areas may be impacted by the proposed Project. As a result, Section 5.0 of this Draft EIR addresses these issue areas. Remaining issue areas found to be less than significant are listed in Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT.

1.3.2 NOTICE OF PREPARATION

Pursuant to Section 15082 of the State CEQA Guidelines, as amended, the City circulated an IS/NOP to public agencies, special districts, and members of the public who had requested such notice for a 30-day review period commencing April 3, 2006 and ending on May 2, 2006. The purpose of the IS/NOP was to formally announce that the City was preparing a Draft EIR for the Project, and that, as the Lead Agency, the City was soliciting input regarding the scope and content of the environmental information to be included in the EIR. The NOP, Initial Study, and responses to the NOP are provided in Appendix 15.1 and 15.2.

1.3.3 EARLY CONSULTATION (SCOPING)

During the IS/NOP review period, the City advertised for a public scoping meeting in a paper of local circulation (The Bakersfield Californian). The meeting was held on April 25, 2006, and was intended to facilitate public input. The meeting was held with the specific intent of receiving interested individuals/groups and public agency oral input regarding the scope of the EIR.

1.3.4 NOP AND SCOPING RESULTS

The following list identifies the concerns and comments obtained from the public and agencies on the IS/NOP for the project through mailings. No comments were made at the public scoping meeting as no other agencies nor the public attended the scoping meeting. IS/NOP responses are contained in Appendix 15.2.

- Off-site migration of pollutants from on-site percolation
- Particulate Matter Pollution
- Air Emissions
- Odors
- Best Practicable Treatment and Control
- Truck Traffic Impacts
- One Abandoned Oil Well (API number 02932204)

The EIR focuses primarily on changes in the environment that would result in potential impacts from the construction and operation of the proposed Project and provides measures to mitigate potential significant impacts. Impacts that cannot be mitigated to levels of less than significance are also identified. This EIR addresses impacts in the following areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology
- Noise
- Population and Housing
- Transportation and Traffic

1.3.5 PUBLIC REVIEW PROCESS-DRAFT EIR

The DEIR for the project will be circulated to the public, state and local agencies, and organizations for review and comment. A notice of Availability will be placed in the *Bakersfield Californian* for the 45-day public review period. A hearing accepting public testimony on the DEIR will be held before the Board of Zoning Adjustment during the public review period. The public hearing will pay special attention to the objectivity and sufficiency of the DEIR in discussing potential impacts and proposing mitigation for potential impacts upon the environment as well as alternatives to the Project.

1.3.6 FINAL EIR

The FEIR allows the public and Lead Agency an opportunity to review revisions to the DEIR, responses to comments, and other components of the EIR, such as the Mitigation Monitoring Program, prior to approval of the project. The FEIR serves as the environmental document supporting the governing body's decision on the proposed Project.

As required by Section 15090 of the CEQA Guidelines, after completing the FEIR, and before approving the project, the Lead Agency must make the following three certifications:

- The FEIR has been completed in compliance with CEQA;
- The FEIR was presented to the decision-making body of the Lead Agency, and the decision-making body reviewed and considered the information in the FEIR prior to approving the project; and
- That the FEIR reflects the Lead Agency's independent judgment and analysis.

Further, per Sections 15091 & 15093 of the CEQA Guidelines, if a Lead Agency approves a project that would result in significant, unavoidable environmental impacts which are

delineated in the FEIR, the Lead Agency must submit in writing “findings for each of those significant effects” (CEQA Guidelines Section 15091(a)) and the “specific reasons to support its action” (15093(b)). Both the ‘Findings’ and the ‘Statement of Overriding Considerations’ “shall be supported by substantial information in the record” (Section 15093(b)), which includes the FEIR.

If any of the above are required, the certifications, Findings, and Statement of Overriding Considerations will be included in a separate Findings document, and both the FEIR and the Findings will be submitted to the City for consideration.

1.4 ORGANIZATION OF THE EIR

The Draft EIR is organized into sections, as follows:

Section 1.0, INTRODUCTION AND PURPOSE provides the information regarding the statutory authority for the completion of the Draft EIR and Guidelines which govern its completion.

Section 2.0, EXECUTIVE SUMMARY, provides a summary of the project and its associated environmental impacts and mitigation measures.

Section 3.0, PROJECT DESCRIPTION provides a detailed Project description indicating Project location, background, and history; Project characteristics, phasing, and objectives; and associated discretionary actions which are required by law.

Section 4.0, BASIS FOR THE CUMULATIVE ANALYSIS describes the approach and methodology for the cumulative impacts analysis.

Section 5.0, ENVIRONMENTAL EVALUATION contains a detailed environmental analysis of the existing conditions, Project impacts, recommended mitigation measures, and unavoidable adverse impacts. The analysis of each environmental category in Section 5.0 is organized as follows:

- *Environmental Setting* describes the physical conditions that exist at this time and have the potential influence to affect the environmental issues under investigation;
- *Regulatory Setting* describes the laws and regulations which apply to the proposed project.
- *Significance Criteria* provides the thresholds of significance used in the evaluation of environmental impacts of the project. Appendix G of the State CEQA Guidelines is the primary source of these threshold of significant (California Code of Regulations [CCR], Sections 15000-15387);
- *Impacts* describes potential environmental changes to the existing physical conditions that may occur if the proposed Project is implemented;
- *Cumulative Impacts* describes potential environmental changes to the existing physical conditions that may occur with the proposed Project, together with all other reasonably foreseeable, planned, and approved future Projects;
- *Mitigation Measures* are those specific measures that may be required of the Project to avoid a significant adverse impact; minimize a significant adverse impact; rectify a significant adverse impact by restoration; reduce or eliminate a significant adverse impact over time by preservation and maintenance operations; or compensate for the impact by replacing or providing substitute resources or environment; and
- *Level of Significance After Mitigation* discusses whether the Project and the Project's contribution to cumulative impacts can be reduced to levels that are considered less than significant.

Section 6.0, LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT discusses significant environmental changes that could result from the project, should it be implemented. This section also discusses growth inducing impacts of the proposed Project.

Section 7.0, ALTERNATIVES TO THE PROPOSED PROJECT describes a reasonable range of alternatives to the Project or to the location of the Project that could feasibly achieve the Project's objectives.

Section 8.0, INVENTORY OF MITIGATION MEASURES lists all mitigation measures proposed in previous sections.

Section 9.0, INVENTORY OF SIGNIFICANT AND MITIGABLE IMPACTS list impacts which remain significant after mitigation.

Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT lists and explains impacts found not to be significant during the Initial Study phase of the EIR.

Section 11.0, ORGANIZATIONS AND PERSONS CONSULTED identifies all Federal, State, and local agencies, organizations, and individuals consulted in the preparation of the EIR.

Section 12.0, BIBLIOGRAPHY lists reference sources for the EIR.

Section 13.0, MITIGATION MONITORING PROGRAM lists all mitigation measures for the project and the people or person responsible for monitoring mitigation compliance.

Section 14.0, COMMENTS AND RESPONSES contains comments and responses from the Draft EIR.

Section 15.0, APPENDICES contains technical documentation for the Project.

1.5 RESPONSIBLE AND TRUSTEE AGENCIES

Some projects or actions undertaken by a Lead Agency require oversight, approvals, and/or permits from other public agencies. These agencies are referred to as "Responsible Agencies" and "Trustee Agencies". Per CEQA Guidelines, Sections 15381 and 15386, as amended, Responsible Agencies and Trustee Agencies are defined as follows:

"Responsible Agency" means a public agency which proposes to carry out or approve a Project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA the term "Responsible Agency" includes all public agencies other than the Lead Agency which have discretionary approval power over the Project. (*Section 15381*)

"Trustee Agency" means a State agency having jurisdiction by law over natural resources affected by a Project which are held in trust for the people of the State of California. Trustee Agencies include.... (*Section 15386*)

'Responsible' and 'Trustee Agencies' as well as other entities which may use this EIR in their decision-making process or for informational purposes may include, but is not limited to the following:

- Regional Water Quality Control Board
- Department of Health Services
- San Joaquin Valley Air Pollution Control District
- California Department of Fish and Game

1.6 INCORPORATION BY REFERENCE

Applicable documents relating to this EIR are cited in accordance with Section 15148 of the CEQA Guidelines, which encourages incorporation by reference to reduce redundancy in and the length of environmental reports. The following documents, which are available for public review at the City, are hereby incorporated by reference into this EIR. Information contained within these documents has been utilized for this EIR.

City of Bakersfield (1984, July 18). City of Bakersfield Resolution No. 48-84- A resolution of the Council of the City of Bakersfield making findings, certifying the Final Supplemental Environmental Impact Report for a Modified Interstate Disposal Site for Wastewater Treatment Plant No. 3, and approving project.

City of Bakersfield, Kern County, United States Department of Fish and Wildlife Service, California Department of Fish and Game. (n.d.) Implementation/Management Agreement.

City of Bakersfield (1994, April) Metropolitan Bakersfield Habitat Conservation Plan.

City of Bakersfield (1991) Metropolitan Bakersfield Habitat Conservation Plan Environmental Impact Report.

City of Bakersfield. (2002, December) Metropolitan Bakersfield General Plan.

City of Bakersfield (2002, December). Metropolitan Bakersfield General Plan Update EIR.

Kenneth D. Schmidt and Associates, 2005 Summary of Groundwater Conditions in the Vicinity of the City of Bakersfield WWTF No. 3, January 27, 2006.

Kleinfelder, Infiltration Evaluation WWTP No. 3 Effluent Ponds, Bakersfield, California (File No. 64411), April 7, 2006.

Kleinfelder, Report of Analytical Results, 8 November 2005.

Quad Consultants. (1987, July). Final Environmental Impact Report titled "Wastewater Treatment Plant Improvements."

Quad Knopf, Inc. (1984, May). Draft Supplemental Environmental Impact Report (DSEIR) titled "Modified Interstate Disposal Site, Wastewater Treatment Plant Three."

Quad Knopf, Inc. (1984, July). Final Supplemental Environmental Impact Report (DSEIR) titled "Modified Interstate Disposal Site, Wastewater Treatment Plant Three."

Copies of the reports are available for review at the City of Bakersfield, Development Services Department, 1715 Chester Avenue, Bakersfield, CA 93301. The point of contact is Marc Gauthier, Principal Planner, who can be reached at (661) 326-3786.

2.0 EXECUTIVE SUMMARY

2.1 PROJECT SUMMARY

2.1.1 PROJECT LOCATION

The project site, located in the southwest of Metropolitan Bakersfield, occupies an area of approximately 350 acres in Section 33, Township 30 South, Range 27 East, Mount Diablo Base and Meridian (MDB&M), Kern County, California (See Figure 1). The project site is bounded by McCutchen Road to the north, Ashe Road to the east, and Gosford Road to the west (See Figure 2). The nearest road to the south is Highway 119. The entire project site is located within the City of Bakersfield City Limits.

2.1.2 PROJECT DESCRIPTION

The proposed project is the expansion and upgrade of Wastewater Treatment Plant No. 3 (WWTP No. 3) in response to the rapid development of residential and commercial properties on the west side of the city during the past 5 years and the expected continuation of this high rate of growth for the next ten years or more.

The project site is currently being used either for wastewater treatment purposes or is vacant land. The General Plan Land Use designation is P (Public Facilities) and the zoning is A (Agriculture). The City owns all of Section 33. The Branch Two canal runs down the western edge of the property and is owned and operated by the Kern Delta Water District (KDWD).

The existing facilities at Wastewater Treatment Plant No. 3 provide primary and secondary treatment of incoming wastewater. Located on the site are four storage ponds, and the treatment plant, which includes clarifiers, solids processing facilities, trickling filters, digesters, sludge drying beds, and methane recovery and cogeneration facilities. On-site there are two sets of sludge drying beds, comprising approximately 11 acres each, which are used to support current wastewater treatment operations. A third set of sludge drying beds of approximately the same size are being developed to support wastewater treatment operations due to increased inflows.

The amount of effluent to eventually be percolated at the WWTP No. 3 is 16 million gallons per day (MGD), or about 18,000 acre-feet per year. However, as indicated by the City of Bakersfield, the new ponds would not complete construction until late 2009, may not be fully operational until 2012, and are not estimated to reach full capacity until 2025. As a result, the rate of percolation is expected to gradually increase until full capacity is reached in 2025.

The proposed expansion and upgrade of Wastewater Treatment Plant No. 3 will result in a more sophisticated treatment plant, which will remove over 95% of the primary wastewater constituents of Biological Oxygen Demand (BOD) and suspended solids. In addition, the City plans to build a modular tertiary treatment facility to handle up to 2 MGD for reuse on nearby land applications and onsite Plant wash and make-up water. The tertiary effluent will be treated to meet the State of California Title 22 Recycled Water requirements for restricted recreational use. The Title 22 tertiary effluent will meet stringent public health turbidity and disinfection standards. This reclaimed water may be used for irrigation of public and private land, industrial water supply needs, or any restricted recreational use. Further, the southern half of the new major arterial roadway, McCutchen Road, will be constructed as part of the project.

2.1.3 PROJECT BACKGROUND

The City opened Wastewater Treatment Plant No. 3 in 1972, with 4 MGD capacity. In 1984, the plant was expanded to accommodate 8 MGD. Then in 1988 the plant was expanded again to 12

MGD to accommodate growth within the service area. EIR's were completed on these plant expansions and certified by the City. As the population of western Bakersfield continued to grow, it was determined that the treatment plant needed to expand to accommodate the growth planned for in the Service Area. Consequently, in 1997 the plant expanded again to 16 MGD. Then in 2000 the housing boom hit Bakersfield causing the projected demand for housing, and thus treatment capacity to sky-rocket. Unprepared for such a dramatic rise in population, the City began planning for an additional increase in capacity. Although the plant capacity had originally been proposed to be increased in 4-8 MGD increments, the rapid growth of western Bakersfield demanded a greater increase in treatment capacity. Therefore, as part of the Master Plan for the City's Treatment Plant's, Treatment Plant No. 3 was slated for a capacity increase of 16 MGD equaling 32 MGD overall plant capacity. Since the beginning of this expansion and upgrade process the rate of growth in western Bakersfield has grown to the extent that it now fully accounts for the proposed expansion in capacity for the plant.

2.1.4 PROJECT ENTITLEMENTS

The applicant's specific entitlement objective under this environmental document is to obtain the City's approval of a modified Conditional Use Permit (CUP) for an increase in treatment capacity at the existing WWTP No. 3. This Draft EIR would be used in support of this CUP application.

2.2 SUMMARY OF OBJECTIVES

2.2.1 PROJECT OBJECTIVES

The objectives of the proposed project are as follows:

1. To expand and upgrade a treatment plant that will provide additional capacity to accommodate the growth of residential homes, commercial businesses, and industries approved by the City.
2. To expand and upgrade the treatment plant such that it will provide a higher level of removal of wastewater constituents such as suspended solids, BOD, Nitrogen (including nitrates), and water borne bacteria and viruses thus improving the receiving ground water basin relative to current operations.
3. To upgrade a portion of the wastewater to State Recycled Water Standards so reclaimed water can be reused as irrigation water for nearby land application, and plant wash and makeup water.
4. To provide for improved land use compatibility as the adjacent areas urbanize, utilize additional landscaping combined with earthen berms at the Plant perimeters to provide a friendly façade and mask the Treatment Plant from the future anticipated commercial and residential areas, which may be constructed adjacent to the Plant on McCutchen Road, Ashe Road, and Gosford Road.
5. To reduce traffic congestion in the project vicinity as a result of future increased truck traffic, the surrounding roadways will be upgraded for improved ingress and egress
6. To provide enhanced odor control to reduce the potential of off-site unpleasant odors in adjacent future developments.
7. To comply with Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDR) Order Numbers R5-2003-0161 and 5-01-105, Provision B-3 which requires compliance with future treatment standards by April 15, 2010. The plant processes will be designed to meet the updated Waste Discharge Requirements set by the Central Valley Regional Water Quality Control Board.

2.3 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

Section 15123(b)(1) of the State CEQA Guidelines requires that an EIR includes a summary to identify each significant effect with proposed mitigation measures that would reduce or avoid that effect. This information is summarized in Table 2.3A, Summary of Impacts and Mitigation Measures. Each of these issues is discussed and analyzed in further detail in Section 5.0 of this EIR.

2.3.1 IMPACTS NOT CONSIDERED IN THIS DRAFT EIR

The contents of this Draft EIR were established based on an Initial Study and Notice of Preparation (NOP) prepared in accordance with the CEQA Guidelines, as well as public and agency input received during the scoping process (See Appendix 15.2). Issues that were found to have no impact or less-than-significant impact during preparation of the Initial Study/NOP are listed in Section 10.0.

2.3.2 IMPACTS & MITIGATION MEASURES DISCUSSED IN THIS EIR

**Table 2.3A
Summary of Impacts and Mitigation Measures**

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<i>Aesthetics</i>			
<u>Long-Term Operational</u>			
Impact 5.1a <i>The project may generate additional light and glare beyond existing conditions from existing treatment plant facilities, street lighting, and vehicular traffic.</i>	Less Than Significant	No Mitigation Measures are Required	Less Than Significant
<u>Cumulative</u>			
Impact 5.1b <i>The proposed project in conjunction with rapidly urbanizing areas in southwest Bakersfield have the potential to create significant cumulative light and glare impacts</i>	Less Than Significant	No Mitigation Measures are Required	Less Than Significant
Impact 5.1c <i>The proposed project has the potential to contribute to cumulatively considerable impacts to aesthetic resources derived from the change of aesthetic character of the surrounding area from rural to urban.</i>	Less Than Significant	No Mitigation Measures are Required	Less Than Significant

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<u>Air Quality</u>			
<u>Short-Term Construction</u>			
<p>Impact 5.2a</p> <p><i>The proposed project has the potential to significantly impact air quality due to emissions from construction of the proposed project</i></p>	Potentially Significant	<p>MM 5.2-1</p> <p>During the construction phase of the proposed project, the contractor, shall implement, GAMAQI recommended mitigation measures that may be considered to reduce emissions from heavy-duty equipment. The applicable mitigation measures from Table 8-6 from the GAMAQI, as well as other feasible measures, are recommended to reduce NOx emissions, as well as other pollutants, as follows:</p> <ul style="list-style-type: none"> • Minimize idling time (e.g., 10-minute maximum for construction equipment, and 5-minute maximum for heavy-duty trucks per the CARB Airborne Toxics Control Measure for commercial truck idling); • Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set); • Curtail construction during periods of high ambient pollutant concentrations; • Implement activity management (e.g., rescheduling activities to reduce short-term impacts); • Properly and routinely maintain all construction equipment, as recommended by the manufacturer; and • Encourage ridesharing and use of transit for construction employees commuting to the project site. <p>Prior to commencement of construction activities, the contractor shall submit to the Public Works Department a written guarantee stating that during the construction phase, these measures will be utilized on all construction equipment.</p>	Significant and Unavoidable
<u>Long-Term Operational</u>			
<p>Impact 5.2b</p> <p><i>The proposed project has the potential to significantly impact air quality due emissions from the operation of the proposed project</i></p>	Potentially Significant	<p>MM 5.2-2</p> <p>The proposed project would include installation of four new emergency diesel engines and retention of the existing emergency engine. Because all of the emergency diesel engines would have a brake horsepower rating over 50, they must comply with Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (California Code of Regulations §93115, Title 17). The ATCM sets allowable maintenance and testing hours per year along with specific diesel PM emission standards. The proposed engines were assumed to operate at 0.15 g/bhp-hr, which is the current nonroad engine standard in the size range of the proposed engines. At this emission level, according to the ATCM, new emergency diesel engines would not be allowed to operate for over 50 hours per year (actual emergency operation is not limited). The emission estimates provided in Table 5.2M and Table 5.2O assumes emergency diesel engines are maintained and tested for 200 hours per year. Upon the issuance of the SJVAPCD air permits, compliance with the ATCM would limit maintenance and testing to 50 hours per year. Therefore, emissions from emergency diesel engines would be one quarter of those shown in Table 5.2M. The emissions based on the operational limits in the ATCM are shown below in Table 5.2Q, Proposed Emergency Diesel Engine Emissions with Mitigation.</p>	Significant and Unavoidable

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
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**Table 5.2Q
Proposed Emergency Diesel Engines Emissions with Mitigation**

Maximum Daily Emissions (tons/yr)					
Emission Source	ROG	NOx	CO	SOx	PM10
Emergency Diesel Engines	0.13	1.88	1.13	.03	0.08

Source: Impact Sciences, Inc. Calculations can be found in Appendix 15.3c.
Note: Emissions assume compliance with the ATCM for Stationary Compression Ignition Engines to operate less than 50 hours per year for maintenance and testing.

MM 5.2-3

The proposed digester gas engines represent the largest contributor of NOx to the operational emissions. Digester gas emissions were estimated assuming engines would meet current SJVAPCD BACT Guideline 3.3.13 for waste gas fired ignition combustion engines. Emission estimates in Table 5.2J are based on emission factors achieved in practice or contained in the SIP per Guideline 3.3.13. The digester gas engines would fulfill the BACT guidelines for meeting achieved in practice emission rates. However, as shown in the BACT Guideline 3.3.13, there are no technologically feasible methods to further reduce NOx emissions from waste gas fired ignition combustion engines. Furthermore, the CARB's Guidance for the Permitting of Electrical Generation Technologies concluded that add-on control technologies are not appropriate for waste gas-fired internal combustion engines:

"Waste gas contains impurities that, if combusted will likely poison catalyst based post-combustion control systems. Consequently, the approach for combusting waste gas in either a reciprocating engine or gas turbine has focused on combustion processes that result in minimal NOx being produced and noncatalytic control systems. For reciprocating engines, lean-burn engines have been the choice because these types of engines produce the lowest emission of NOx without using post combustion treatment technologies" (CARB, 2001).

The City will install per the project design, lean-burn digester gas engines that comply with the BACT Guideline 3.3.13. Therefore, additional mitigation to reduce NOx emissions to a less than significant level could not be feasibly accomplished.

<p>Impact 5.2c <i>The proposed project has the potential to conflict with or obstruct implementation of the applicable Air Quality Management Plan</i></p>	Less Than Significant	No mitigation measures are required.	Less Than Significant
<p>Impact 5.2d <i>The proposed project has the potential to significantly impact air quality through violations of Air Quality Standards or by contributing substantially to existing or projected air quality violations</i></p>	Less Than Significant	No mitigation measures are required.	Less Than Significant

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<p>Impact 5.2e <i>The proposed project has the potential to expose sensitive receptors to substantial pollutant concentrations</i></p>	Less Than Significant	No mitigation measures are required.	Less Than Significant
<p>Impact 5.2f <i>The proposed project has the potential to expose sensitive receptors to offensive odors affecting a substantial number of people</i></p>	Less Than Significant	No mitigation measures are required.	Less Than Significant
<u>Cumulative</u>			
<p>Impact 5.2g <i>The proposed project has the potential to have significant cumulative impacts on air quality from NOx emissions</i></p>	Potentially Significant	<p>MM 5.2-3 The proposed digester gas engines represent the largest contributor of NOx to the operational emissions. Digester gas emissions were estimated assuming engines would meet current SJVAPCD BACT Guideline 3.3.13 for waste gas fired ignition combustion engines. Emission estimates in Table 5.2J are based on emission factors achieved in practice or contained in the SIP per Guideline 3.3.13. The digester gas engines would fulfill the BACT guidelines for meeting achieved in practice emission rates. However, as shown in the BACT Guideline 3.3.13, there are no technologically feasible methods to further reduce NOx emissions from waste gas fired ignition combustion engines. Furthermore, the CARB's Guidance for the Permitting of Electrical Generation Technologies concluded that add-on control technologies are not appropriate for waste gas-fired internal combustion engines:</p> <p style="padding-left: 40px;"><i>"Waste gas contains impurities that, if combusted will likely poison catalyst based post-combustion control systems. Consequently, the approach for combusting waste gas in either a reciprocating engine or gas turbine has focused on combustion processes that result in minimal NOx being produced and noncatalytic control systems. For reciprocating engines, lean-burn engines have been the choice because these types of engines produce the lowest emission of NOx without using post combustion treatment technologies" (CARB, 2001).</i></p> <p>The City will install per the project design, lean-burn digester gas engines that comply with the BACT Guideline 3.3.13. Therefore, additional mitigation to reduce NOx emissions to a less than significant level could not be feasibly accomplished.</p>	Significant and Unavoidable
<p>Impact 5.2h <i>The proposed project has the potential to have cumulatively considerable impacts on air quality from Particulate Matter (PM) emissions</i></p>	Less Than Significant	No mitigation measures are required.	Less Than Significant

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
Biological Resources			
<u>Short/Long-Term Construction and Operational</u>			
<p>Impact 5.3a <i>The proposed project may have a substantial adverse effect, on species identified as candidate, sensitive, or special status as delineated in local or regional plans, policies or regulation, and/or the California Department of Fish and Game or US Fish and Wildlife.</i></p>	<p>Potentially Significant</p>	<p>MM 5.3-1 Prior to ground-disturbing activities, the contractor shall provide a qualified biologist who shall conduct surveys for burrowing owls in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 1995) and the California Burrowing Owl Consortium Guidelines (Santa Cruz Predatory Bird Research Group 2005). The survey will be conducted over the entire site and, where possible, 150 feet around the project site. If no burrows or burrowing owls are identified, then no further action is required. If burrows or burrowing owls are identified, then the following mitigation should be implemented.</p> <p>If possible, when burrowing owls are detected during the breeding season, impact should be avoided. A no-disturbance buffer zone should be delineated in a 75- meter radius around the occupied burrow. No ground disturbance would be permitted in the no-disturbance buffer zone until a qualified biologist has determined that the young have fledged. Otherwise, compliance with the CDFG passive relocation protocol during the non-nesting season will avoid any significant impacts to burrowing owls. The findings of the survey shall be included in a report submitted to the Public Works Department.</p> <p>MM 5.3-2 To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, the contractor shall cover all excavated, steep-walled holes or trenches more than 2 feet deep at the close of each working day by plywood or similar materials, or provide one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, the contractor shall thorough inspected them for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under mitigation measures 5.3-3 & 5.3-4 of this section must be followed.</p> <p>MM 5.3-3 Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected by the contractor for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.</p> <p>MM 5.3-4 The contractor shall provide qualified personnel to conduct preconstruction surveys for known dens according to the CDFG Region 4 Protocols, and implement appropriate take avoidance measures for the San Joaquin Kit Fox in accordance with MBHCP take avoidance measures. All agency guidelines regarding kit fox tracking and excavation to prevent entrapment of animals in potential dens shall be followed. The findings of the survey shall be included in a report submitted to the Public</p>	<p>Less Than Significant after Mitigation</p>

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
		Works Department.	
		MM- 5.3-5 The project area is located within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and is required to pay Habitat Mitigation Impact Fees to off-set incidental take of wildlife species. These fees are collected into a trust for payment of mitigation activities as prescribed in the MBHCP implementation management agreement. Prior to the issuance of construction permits, the MBHCP impact fees for the undeveloped acreage to be disturbed by the project shall be paid by the City.	
Impact 5.3b <i>The proposed project may interfere with the movement of native resident or migratory fish or wildlife species or with an established native resident or migratory fish or wildlife species or with an established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.</i>	Potentially Significant	See mitigation measures listed under Impact 5.3a	Less Than Significant after Mitigation
<u>Cumulative</u>			
Impact 5.3c <i>The proposed project has the potential to remove land from the overall land balance for special status species</i>	Potentially Significant	MM- 5.3-5 The project area is located within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and is required to pay Habitat Mitigation Impact Fees to off-set incidental take of wildlife species. These fees are collected into a trust for payment of mitigation activities as prescribed in the MBHCP implementation management agreement. Prior to the issuance of construction permits, the MBHCP impact fees for the undeveloped acreage to be disturbed by the project shall be paid by the City.	Less Than Significant after Mitigation

Cultural Resources

Short-Term Construction Impacts - Archaeological/Historical Resources

Impact 5.4a <i>The project has the potential to disturb buried human remains and/or buried historical and archaeological resources.</i>	Potentially Significant	MM 5.4-1 If human remains of Native American origin are discovered during project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, the contractor shall cease all further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: <ul style="list-style-type: none"> • the coroner of Kern County has been informed and has determined that no investigation of the cause of death is required, and • if the remains are of Native American origin, <ol style="list-style-type: none"> a. the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, or b. the descendants of the deceased Native Americans 	Less Than Significant
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Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
		<p>have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.</p> <p>According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission.</p> <p>Inadvertent discoveries of potential human remains shall be reported and monitored by the Public Works Department.</p> <p>MM 5.4-2</p> <p>If buried cultural resources, such as chipped or ground stone, historic bottles or ceramics, building foundations, or non-human bone are inadvertently discovered during ground-disturbing activities, the contractor shall stop all work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. Sites discovered having relevance to Native Americans shall be made known to the appropriate individuals/agencies/groups as determined by the archaeologist in consultation with the Lead Agency.</p> <p>Inadvertent discoveries of potential buried cultural resources shall be reported and monitored by the Public Works Department.</p>	
Hazards			
<u>Long-Term Operational</u>			
<p>Impact 5.5a</p> <p><i>The project may create a significant hazard to the public or the environment through the routine use and disposal of small quantities of hazardous materials in the onsite laboratory.</i></p>	Potentially Significant	<p>MM 5.5-1</p> <p>Per state regulations, the City of Bakersfield Wastewater Department will submit an updated hazardous materials business plan and inventory to the local CUPA authority for all operational hazardous materials that will be utilized in the on-site laboratory and wastewater treatment plant. The plan will include an emergency response plan for accidental release of hazardous materials, an inventory (per SARA Titles II & III as well as Chapter 6.95 of the California Health and Safety Code) of all hazardous materials kept and/or used on site, and a CUPA approved training program for employees in the proper storage, handling, and disposal of all hazardous materials kept and/or used onsite. This plan will be submitted prior to start-up of the new facilities.</p>	Less Than Significant after Mitigation
<p>Impact 5.5b</p> <p><i>The project may create a significant hazard to the public or the environment through the release of petroleum compounds from known and unknown abandoned wells located on</i></p>	Potentially Significant	<p>MM 5.5-2</p> <p>Prior to the issuance of grading permits, the City will arrange for the well to be leak tested; witnessed and approved by DOGGR personnel. The leak test will be completed to determine the efficacy of the existing plug. If any of the surface plug is removed due to grade cutting or if the leak test is insufficient per DOGGR's assessment, the well will need re-abandoned to current DOGGR standards. If the leak test is sufficient per DOGGR's assessment and no casing cutting is completed for</p>	Less Than Significant after Mitigation

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<i>the project site.</i>		grading purposes then the City will create a 10 foot no build buffer around the existing well. The well is not located within the construction footprint of any of the facilities. Thus, the 10 foot no build buffer can be easily accommodated. The location, however, will be subject to paving for internal circulation improvements which would not affect the integrity of the abandoned well casing since it would be located deep enough beneath the construction zone so as to not be disturbed by paving activities.	
		MM 5.5-3 If development uncovers any previously unknown oil, gas, or injection wells, the Contractor and/or City will immediately notify DOGGR and all construction adjacent to the well location will cease, until the DOGGR makes a determination of the status of the well and any actions (i.e. re-abandonment) required for the protection of public health and safety. All DOGGR requirements for discovered wells will be completed by the City of Bakersfield Public Works Department under the direction and supervision of DOGGR staff.	
Impact 5.5c <i>The project may create a significant hazard to the public or the environment through storage of digester gas on the project site.</i>	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.5d <i>The project may create a significant hazard to the public or the environment through the handling, storage, and use of hazardous materials during the construction of the proposed project.</i>	Potentially Significant	MM 5.5-4 All hazardous materials used and stored on site as part of construction related activities such as diesel fuel, oils, lubricants, and hydraulic fluids shall be stored and managed properly and Material Safety Data Sheets kept onsite. Responsibility for the proper management and storage of these materials and the availability of MSDS sheets will be the responsibility of the various construction firms. Further, these firms will provide training for all their construction employees in the proper handling and storage of such materials prior to the beginning of construction.	Less Than Significant after Mitigation
Impact 5.5e <i>The project may create a significant hazard to the public or the environment through the uncontrolled release of digester gas into the environment.</i>	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.5f <i>The proposed project has the potential to create hazardous impacts from natural gas and oil transmission lines through the accidental breach of existing onsite transmission lines.</i>	Less Than Significant	No mitigation measures are required.	Less Than Significant
<u>Cumulative</u>			
Impact 5.5g <i>The proposed project has the potential to contribute to existing hazard and hazardous materials impacts from land uses and</i>	Less Than Significant	No mitigation measures are required.	Less Than Significant

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<i>activities located within the project vicinity</i>			
<p>Impact 5.5h <i>The proposed project has the potential to contribute to cumulative hazards impacts associated with oil production and development in the project area.</i></p>	Less Than Significant	No mitigation measures are required.	Less Than Significant
Hydrology and Water Quality			
<u>Long Term Operational Impact(s)</u>			
<p>Impact 5.6a <i>Historical impacts on Groundwater Quality from Prior AYC Wastewater Discharge</i></p>	Potentially Significant	<p>MM 5.6-3 Any private well down gradient and within a quarter mile of the east half of the former Use Area will be monitored on a semi-annual basis, if such monitoring is requested by the owners. As this area is rapidly urbanizing, such monitoring will cease when the wells are no longer in use. Monitoring of private wells would reassure those owners who request such monitoring that the implementation of the proposed project will not result in an adverse affect on water quality. Monitoring of private wells shall be in accordance with the proposed project's sampling and reporting program. Inspections and monitoring will be conducted by the City of Bakersfield Public Work's Department as appropriate.</p> <p>MM 5.6-4 If well water quality of any private well down gradient and within a quarter mile of the east half of the former Use Area is indicated to be degraded by historical use, an alternative source of potable water would be made available by the City of Bakersfield. This mitigation measure will assure that any owner with a private well located down gradient and within a quarter mile of the east half of the former Use Area has a guaranteed source of uncontaminated water. This measure will be implemented pending results of the semi-annual monitoring requirement which will be implemented by the City of Bakersfield only if requested by the owner(s).</p>	Less Than Significant After Mitigation
<u>Short-Term Construction Impacts and Long-Term Operational Impacts</u>			
<p>Impact 5.6b <i>Potential Impacts to Groundwater Quality from Expanded Effluent Percolation</i></p>	Significant	<p>MM 5.6-1 The City of Bakersfield will install additional monitor well(s) in the project area. The number and exact location of these wells will be determined in the work plan in coordination with the RWQCB. In development of the work plan the City of Bakersfield will take into consideration recommendations made by KDSA and the RWQCB. Background sampling will begin no less than one year prior to the initial disposal and onsite percolation of advanced secondary treated effluent. Any additional well(s) would be added to the quarterly monitoring program. Careful placement of additional monitor wells will help ensure that the advanced secondary treated wastewater effluent is appropriately disposed of in accordance with all regulatory requirements. In the event that the sampling shows an elevated level or a sudden rise in the concentration in any of the constituents that are being monitored for compliance with a standard, such finding(s) will be reported to the RWQCB and any corrective actions determined necessary in consultation with the RWQCB will be implemented accordingly. This would help reduce any impacts due to onsite percolation to a level of less than significant. Additional monitor well(s) construction,</p>	Less Than Significant After Mitigation

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
		<p>sampling, analysis and reporting shall be in accordance with the proposed project's work plan, and subsequently issued revised Waste Discharge Requirements, and associated Monitoring and Reporting Program. Inspections and monitoring will be conducted by the WWTP No. 3 staff/authorized agents, or RWQCB as appropriate.</p> <p>MM 5.6-2</p> <p>As recommended by KDSA and the RWQCB, during construction contaminated soil (primarily located on the east half of the project area) will be removed to a depth of no less than 5 feet bgs or as will be determined in the work plan to be developed by the City of Bakersfield in coordination with the RWQCB. As discussed above under impact 5.6b, Kleinfelder and KDSA showed that the soil in the former Use Area was influenced by the past irrigation with AYC wastewater. The removal of the contaminated soil will prevent contaminants such as TOC and TKN from migrating towards and impacting groundwater quality. Soil sampling, analysis and reporting shall be in accordance with the proposed project's work plans. Inspections and monitoring will be conducted by the WWTP No. 3 staff/authorized agents, or RWQCB as appropriate.</p> <p>MM 5.6-5</p> <p>As noted in MM 5.6-2, contaminated soils will be removed to a depth of no less than 5 feet bgs or as determined in the work plan. The excavated soils will be used on the outer embankment only of the new percolation ponds and in the perimeter facility landscape berms to be constructed around the frontage of the facility. Measures will be taken to ensure that the excavated soils used in the outer embankment of the new percolation ponds will not be mixed with the clean soils that will make up the inner slope of the embankment perimeter. This mitigation measure allows for the beneficial use consistent with applicable regulations of the excavated contaminated soils that otherwise would have been required to be disposed of at an approved waste disposal site. The construction of the percolation pond embankments and perimeter landscape berms following soil excavation will be subject to regular inspections by the WWTP No. 3 staff as appropriate. The inspections will be performed in accordance with the work plan as requested by the RWQCB.</p>	
<p>Impact 5.6c <i>Storm Water Related Impacts to Surface Water Quality</i></p>	Significant	<p>MM 5.6-7</p> <p>The City of Bakersfield, through the prime construction contractor(s), will develop and implement a Construction SWPPP during construction activities in order to be covered under the General Permit for Discharges of Storm Water Associated with Construction Activity. The City will adhere to all city, county, state, and federal requirements pertaining to storm water. With the development and implementation of a SWPPP, less than significant impacts are expected.</p>	Less Than Significant After Mitigation
<p>Cumulative Impacts <i>The proposed project has the potential to have a cumulatively considerable hydrologic impact.</i></p>	Potentially Significant	See Mitigation Measures 5.6-1 through 5.6-7 above.	Less Than Significant After Mitigation
Noise			
<u>Short-Term Construction</u>			
<p>Impact 5.7a <i>Grading and construction</i></p>	Less Than Significant	<p>MM 5.7-1</p> <p>Prior to issuance of grading and construction permits, the</p>	Less Than Significant

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<i>noise generated during the upgrade and expansion of the plant has the potential to create significant noise related impacts.</i>		<p>contractor must submit documentation and/or specifications of the following:</p> <ul style="list-style-type: none"> • All construction equipment and vehicles used onsite are operating properly and incorporate all appropriately maintained mufflers and sound dampening apparatuses. • Construction schedules which indicate construction activities will be performed within noise ordinance requirements • All stockpiling of materials and construction vehicle staging and/or stacking areas will be located away from any identified sensitive receptors <p>The contractor shall ensure that the foregoing measures continue to be implemented during site construction activities. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.</p> <p>MM 5.7-2</p> <p>During construction, the contractor shall situate all stationary construction equipment on the project site so that noise emitting objects or equipment face away from any potential sensitive receptors. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.</p>	with Mitigation
<u>Long-Term Operational</u>			
Impact 5.7b <i>Operational noise generated from additional aeration basin blowers, internal combustion engines used in the co-generation facility, and the additional four emergency back-up generators have the potential to exceed City noise standards and create significant noise related impacts.</i>	Less Than Significant	No mitigation measures are required.	Less Than Significant
<u>Cumulative</u>			
Impact 5.7c <i>Operational noise through the construction of aeration basin blowers, internal combustion engines in the co-generation facility, and four new emergency backup generators have the potential to contribute to overall increases in ambient noise levels in the project vicinity.</i>	Less Than Significant	No mitigation measures are required	Less Than Significant
Population and Housing			
<u>Long-Term Operational</u>			
Impact 5.8a <i>The project may induce substantial population growth in the area, either directly or indirectly.</i>	Less Than Significant	No mitigation measures are required.	Less Than Significant

Impact	Level of Significance	Mitigation Measures	Significance After Mitigation
<i>Transportation and Traffic</i>			
<u>Short-Term Construction</u>			
Impact 5.9a <i>Construction activities have the potential to create temporary impacts on local roadways such that levels of service could drop below LOS "C".</i>	Potentially Significant	MM 5.9-1 Prior to the issuance of grading permits, a construction Traffic Management Plan will be submitted by the construction management contractor for approval by the City of Bakersfield. The plan will consist of prior notices, adequate sign posting, and detours. The plan will indicate the timing of each element as deemed appropriate by the City of Bakersfield Traffic Engineering Department. The plan will also be reviewed and approved by the City Fire and Police Departments in order to assure that emergency response is not hindered by construction related traffic. The contractor shall implement the approved plan during all site construction activities. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.	Less Than Significant After Mitigation
<u>Long-Term Operational</u>			
Impact 5.9b <i>The implementation of the proposed project may create increased traffic on local roadways which could impact levels of service.</i>	Potentially Significant	MM 5.9-2 On or before the date of commencement of construction, or the issuance of grading permits, the Project Applicant will pay all required RTIF Program fees per Municipal Code Section 15.84.050. Payment of these fees will assure that arterials will continue to operate at LOS "C" or above.	Less than Significant after Mitigation
Impact 5.9c <i>The proposed project in conjunction with past, present, and potential future projects has the potential to cause cumulatively considerable traffic and transportation impacts</i>	Potentially Significant	See MM5.9-2, above.	Less than Significant after Mitigation

2.4 SUMMARY OF PROJECT ALTERNATIVES

Section 15126.6(d) of the State CEQA Guidelines requires the EIR to describe a range of alternatives to the project, or to the location of the project which could feasibly accomplish the basic objectives of the project, and to evaluate the comparative merits of the alternatives. The analysis will focus on whether the alternatives are capable of eliminating or reducing to a level of insignificance any potential significant adverse environmental impact of the proposed project. The impacts of the proposed project which have been identified as significant, even after mitigation include:

- Operational emissions of NOx will remain above Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) thresholds after mitigation
- Construction emissions of NOx will remain above GAMAQI thresholds after mitigation
- Cumulatively Considerable NOx emissions

Accordingly, alternatives which would reduce or avoid these impacts represent an environmentally superior alternative to the proposed project. However, if the environmentally superior alternative is the "no project" alternative, the EIR must also identify an environmentally superior alternative among the other alternatives.

The following are descriptions of each of the Alternatives evaluated in Section 7.0 and a brief summary of the discussion of impacts and feasibility.

“No Project Alternative”

The “No Project” Alternative assumes that the proposed expansion of the plant from 16 MGD to 32 MGD would not be implemented. Additionally, this alternative assumes that existing land uses on the Project site would remain unchanged. Under the No Project Alternative, the potential benefits associated with the proposed Project would be forgone. This Alternative serves as the baseline against which to evaluate the effects of the proposed Project and other Project Alternatives. The No Project Alternative would produce no project related direct impacts, but would not be in compliance with its Waste Discharge Requirements (WDR) as well as not providing the needed treatment capacity required by the growing southwest. Both of these situations could produce a moratorium on construction and growth in the western half of the community, a situation which is not consistent with the goals of the Metropolitan Bakersfield General Plan (MBGP).

“Reduced Increase in Capacity” Alternative

With the “Reduced Increase in Capacity” Alternative the Wastewater Treatment Plant would increase its capacity by 8 MGD rather than the proposed 16 MGD. Implementation of this alternative would include similar activities to the proposed project but on a smaller scale. Therefore, potential impacts associated with this alternative were similar in nature to the proposed project but were smaller in nature.

“Alternative Site” Alternative

This alternative consists of discussion regarding the siting and operation of the additional 16 MGD of wastewater treatment capacity on an alternative site location. Given the City’s significant investment in the current site, and its role as a regional treatment facility, with its associated collection system infrastructure, the existing facility’s capability to be expanded on a modular basis as the demand occurs, the Central Valley Regional Water Quality Control Board’s Consolidation Policy, the City decided that to expand Wastewater Treatment Plant No. 3 to 32 MGD at the current site was the most appropriate approach. This determination was also influenced by the seven year planning period required to plan, design, construct, and activate a new wastewater treatment plant and the capital, operations, and maintenance cost savings from constructing the new plant on the current site with a capacity increase greater than 8 MGD. Given the foregoing analysis, an alternative location alternative was determined to be infeasible. In accordance with Sections 15126.6(f)(2) and 15126.5(f)2(3) of the State CEQA Guidelines, and alternative project site location will not be evaluated in the EIR.

“Enhanced Odor Control” Alternative

The “Enhanced Odor Control” Alternative consists of the proposed project as outlined in Section 3.3 *and* the implementation of enhanced odor control measures, as recommended in the GAMAQI. Add-on odor control devices and/or process modifications implemented at the source of odors can be an effective means to reduce potential odor impacts. Modification of the project design would help to further reduce the potential for odor impacts on surrounding areas, as well as reduce the ROG emissions from the treatment processes. The activities required for such modifications to the project design would not change the activities or the basic footprint required for the treatment plant expansion and upgrade under the existing project description. As this Alternative would include all the activities of the proposed project, there would be no changes with respect to the environmental impacts as analyzed in this document with the exception of air quality resources. Compared to the proposed project, which was determined to have less than significant direct and cumulative odor impacts, this alternative would be comparably less significant on a project direct and cumulative odor impact basis. However, while ROG and odor impacts would be reduced under this alternative, they would still have significant direct and cumulative air quality impacts due to NOx emissions which are unavoidable.

“Environmentally Superior” Alternative

CEQA Section 15126.6(e)(2) indicates that, if the “No Project” Alternative is the “Environmentally Superior” Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other Alternatives in the case. The context of an environmentally superior alternative for this DEIR is based on the consideration of several factors including the project’s objectives as described in Section 3.4 and the Alternative’s ability to fulfill the objectives with minimal impacts to the surrounding environment. The “Reduced Increase in Capacity” alternative has been identified as the environmentally superior alternative. Although the reduced increase alternative would be environmentally superior, it would not fulfill the project objectives as effectively and adequately as the proposed project.

3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION AND SETTING

3.1.1 PROJECT LOCATION

The project site is located within the southwest portion of the City of Bakersfield, Kern County, California. The project address is 8101 Ashe Road, Bakersfield, California, 93313. The Project site, approximately 350 acres, is located in Section 33 of Township 30 South, Range 27 East, MDB&M and is bounded on the north by McCutchen Road, on the south by Taft Highway, the east by Ashe Road, and the west by Gosford Road (See Figure 1).

3.1.2 EXISTING CONDITIONS ON-SITE

The project site is currently being used either for wastewater treatment purposes or is vacant land. The City of Bakersfield owns the entire Section 33, although the WWTP No.3 only requires the use of 350 acres of the total 640 acres owned by the City. Currently, this section has a General Plan Land Use designation of "P" (Public Facilities) and a zoning designation of "A" (Agriculture). The Branch Two canal runs down the western edge of the property and is owned and operated by the Kern Delta Water District (KDWD).

The existing facilities at Wastewater Treatment Plant No. 3 provide primary and secondary treatment of incoming wastewater. Located on the site are four storage ponds, and the treatment plant, which includes clarifiers, solids processing facilities, trickling filters, digesters, sludge drying beds, and methane recovery and cogeneration facilities. On-site there are two sets of sludge drying beds, comprising approximately 11 acres each, which are used to support current wastewater treatment operations. A third set of sludge drying beds of approximately the same size are being developed to support wastewater treatment operations due to increased inflows.

3.1.3 SURROUNDING LAND USES

Currently, the majority of the surrounding land consists of agricultural land uses, but a mixture of residential, commercial, and industrial uses have been approved by the Bakersfield City Council and upon LAFCO approval of their annexation into the City of Bakersfield, the agricultural uses will likely cease and be replaced by urban uses (See Table 3.1A and Figure 8). Currently, City Policy does not allow new residential development within one quarter mile of any treatment facility due to odor concerns (City of Bakersfield, Public Works Memorandum, 2004) [See Figure 4]. All nearby landowners within the buffer zone have previously been notified by the City. Recently approved development projects in the vicinity of the odor buffer zone have been designed to accommodate the one-quarter mile odor buffer zone.

Oil production sites are located approximately two miles to the west of the project site. Two industrial sites are located immediately to the west along McCutchen Road. The Union Pacific/Sunset Railroad runs parallel to Progress Road intersecting with McCutchen Road approximately one half mile to the west of the project site.

Table 3.1A
Proposed & Existing Land Use/Zoning of Adjacent Properties

LOCATION	PROPOSED/APPROVED LAND USE DESIGNATION	PROPOSED/APPROVED ZONE DISTRICT	EXISTING LAND USE
NORTH	LR (Low Density Residential)	R-1 (One-Family Dwelling)	Agriculture
SOUTH	RR (Rural Residential)	A (Exclusive Agriculture) and E (Estate Residential)	Agriculture and Rural Residential
EAST	LR (Low Density Residential) and GC (General Commercial)	R-1 (One-Family Dwelling), C-1 (Neighborhood Commercial)	Agriculture
WEST	(LR)Low Density Residential, GC (Commercial), LI (Light Industrial), and R-IA (Intensive Agriculture)	R-1 (One-Family Dwelling), R-2 (Limited Multi Family Dwelling), C-1 & C-2 (Neighborhood and Regional Commercial), M-1 (Light Manufacturing), and A (Agriculture)	Industrial and Agriculture

3.2 BACKGROUND AND HISTORY

The City opened Wastewater Treatment Plant No. 3 in 1972, with a 4 million gallons per day (MGD) capacity. In 1984, the plant was expanded to accommodate 8 MGD. Then in 1988 the plant was expanded again to 12 MGD to accommodate growth within the service area. EIR's were completed on these plant expansions and certified by the City. As the population of western Bakersfield continued to grow, it was determined that the treatment plant needed to expand to accommodate the growth planned for in the Service Area. Consequently, in 1997 the plant expanded again to 16 MGD. Then in 2000 the housing boom hit Bakersfield causing the projected demand for housing, and thus treatment capacity to sky-rocket. Unprepared for such a dramatic rise in population, the City began planning for an additional increase in capacity. Although the plant's capacity had originally been proposed to be increased in 4-8 MGD increments, the rapid growth of western Bakersfield demanded a greater increase in treatment capacity. Therefore, as part of the Master Plan for the City's treatment plants, Treatment Plant No. 3 was slated for a capacity increase of 16 MGD equaling 32 MGD overall plant capacity. This increase, as with all previous capacity increases is to occur within the existing 350 acre treatment plant area. Since the beginning of this expansion and upgrade process the rate of growth in western Bakersfield has grown to the extent that it now fully accounts for the proposed expansion in capacity for the plant.

3.3 PROJECT CHARACTERISTICS

The proposed project is the expansion and upgrade of Wastewater Treatment Plant No. 3 due to the rapid development of residential and commercial properties on the west side of the City during the past 5 years and the expected continuation of this high rate of growth for the next ten years or more. The current wastewater flow into Wastewater Treatment Plant No. 3 is over 15 MGD. Since the design capacity of Wastewater Treatment Plant No. 3 is 16 MGD, the continued growth of the City will soon push the wastewater flow into Wastewater Treatment Plant No. 3 to its nominal designed treatment capacity. The project is proposed to proceed at this time to avoid

overload of the existing treatment plant facilities as planned growth in the service area occurs. The service area location and the expanded plant facilities are depicted in Figures 2, 3 and 4).

The existing facilities at Wastewater Treatment Plant No. 3 provide primary and secondary treatment of incoming wastewater. The secondary treated effluent flows via pipeline to the Interstate Five (I-5) Reclamation Site where it is used as crop irrigation water and is spread on the farmland. The wastewater solids, which are extracted from the wastewater using biological and physical processes, are further treated in the anaerobic digesters, spread and dewatered on sludge drying beds, transported to the City's Wastewater Treatment Plant No. 2 (WWTP No. 2) farm operation (located on South Mount Vernon Avenue), and spread as fertilizer for non-food crops on the farmland.

The current primary and secondary treatment system consists of the following facilities and processes:

1. Preliminary Treatment
 - a. Wastewater passes through bar screens that trap and remove large and non-organic materials. The materials removed during this process are sent to a sanitary landfill. Wastewater then flows into grit chambers where the heaviest materials, such as egg shells, coffee grounds and sand, settle out. The materials removed from the grit chamber are sent to the Mt. Vernon Green Waste Recycling Facility (located on South Mount Vernon Ave) for use in compost.
2. Chemical Addition
 - a. Recently, ferric chloride and polymers have been added on a trial basis to the incoming wastewater to enhance solids and BOD removal in the primary system. Polymers will continue to be added to the wastewater to enhance the primary settling process. Chemical addition has been added to the plant treatment processes to enhance primary sedimentation and increase the plant treatment capacity and will be continued.
3. Odor Control
 - a. Foul air containing hydrogen sulfide and other odiferous compounds are removed through air ducts and forced through a chemical odor scrubber. The current odor control system does not provide odor control for all treatment facilities and has been only marginally successful in removing odors.
4. Primary Treatment
 - a. Next, the wastewater is pumped to primary clarifiers where liquids and solids are separated. The heavier solids settle and are scraped off the bottom, and the lighter material is skimmed off the top of the basins. The materials that are removed are sent to solids processing facilities. As noted, the recent addition of chemical treatment of the raw wastewater at the headworks improves settling of the solids resulting in advanced primary treated wastewater effluent. The partially treated wastewater, which flows over the primary clarifier's weirs, is pumped to secondary treatment facilities.
5. Secondary Treatment
 - a. Primary treated wastewater is conveyed to trickling filters. The trickling filter tanks hold plastic media, which facilitate the growth of microorganisms on the surface of the media. The microorganisms consume most of the remaining suspended and soluble organic solids. The wastewater is then pumped into secondary clarifiers where the sludge settles out. Most of it is scraped off the bottom and returned to the trickling filters to regenerate this process, while the excess is sent to the solids handling facilities for further biological treatment and reduction.
6. Effluent Disposal

- a. An average volume of 14 MGD of treated effluent is transported via pipeline to an agricultural area identified as the I-5 Reclamation Site. The effluent is then spread over the ground as crop irrigation water.
7. Solids Processing
 - a. Solids removed in the primary and secondary treatment processes are pumped into anaerobic digesters where they undergo natural decomposition for 20-25 days. Half the solids convert to a gas mostly made up of methane, which is sent to energy recovery facilities. The remaining solids are pumped to sludge drying beds for dewatering to a 50 percent solid material (with a cake-like consistency) called biosolids. The biosolids are sent to the Plant No. 2 farm (located at WWTP No. 2) for direct land application as a soil amendment.
 8. Energy Recovery
 - a. The methane gas derived from the digesters is used to power on-site engine-generator units that produce the electricity used as an energy source to operate the Wastewater Treatment Plant No.3.

The proposed expansion and upgrade of Wastewater Treatment Plant No. 3 will result in a more sophisticated treatment plant, which will remove over 95% of the primary wastewater constituents of BOD and suspended solids. The plant processes will be designed to meet the upgraded Waste Discharge Requirements (WDR) set by the Central Valley Regional Water Quality Control Board. The upgraded WDR are scheduled to go into effect in April 2010. In addition, the City plans to build a modular tertiary treatment facility to handle up to 2 million gallons per day for reuse on nearby land applications and onsite Plant wash and make-up water. The tertiary effluent will be treated to meet the State of California Title 22 Recycled Water requirements for restricted recreational use. The Title 22 tertiary effluent will meet stringent public health turbidity and disinfection standards. This reclaimed water may be used for irrigation of public and private land, industrial water supply needs, or restricted recreational use.

The expanded and upgraded treatment plant will contain the following facilities and processes (See Figure 5, 6, and 7):

1. Influent Conveyance
 - a. A portion of the influent will be conveyed to the plant from a lift station located on the northwestern corner of the Plant property. The conveyance lines will be upgraded to handle all wastewater influent coming from the west side of the City. The remainder of the flow comes to the plant via gravity.
 - b. Another potential portion of WWTP No. 3 influent may be conveyed to the plant via septage truck deliveries. Currently, all septage is being delivered to the WWTP No. 2 Facility, and will continue to be delivered there. WWTP No. 3 will provide for acceptance of septage on a contingency basis in the event that circumstances arise where WWTP No. 2 receives more septage than the facility can process at that time. Any septage which enters WWTP No. 3 will be received by two septage processing units, which will be equipped with a screen and screening dewatering auger to remove coarse solids. The screened septage will be drained into an underground concrete storage tank with two submersible chopper pumps. From this tank, the septage will be pumped to the Plant's influent line at a controlled pace to avoid shock loading of the system.
 - c. An additional stream of waste which will enter the Plant will come via grease truck deliveries through the facility's septage unit. The grease will be discharged into an underground concrete tank which contains two submersible chopper pumps. The grease will be released into the Plant's anaerobic digesters to help with the production of methane to be used in the onsite cogeneration facility.

2. Preliminary Treatment
 - a. Wastewater will flow into a new headworks facility with large influent pumps designed to lift the wastewater through the remaining treatment processes by gravity flow. The raw wastewater will pass through improved bar screens that will trap and remove large and non-organic materials. It will then flow into a vortex grit removal system where the heaviest materials, such as egg shells, coffee grounds and sand, will settle out. The materials removed in the preliminary treatment system will be ground up and washed prior to transport to a sanitary landfill or used for composting.
3. Chemical Addition
 - a. Ferric chloride will be added to the incoming wastewater to help reduce hydrogen sulfide and control odors as in the current treatment process. Chemical coagulants will also be added to the wastewater to enhance the primary settling process.
4. Odor Control
 - a. Foul air containing hydrogen sulfide will be removed through air ducts and forced through a natural bio-filter bed made up of several forms of synthetic media. Separate odor control facilities will serve the headworks, primary clarifiers, trickling filters, septage and grease processing facilities, and solids handling facilities.
5. Primary Treatment
 - a. Following preliminary treatment, the wastewater flows to primary clarifiers where the liquids and solids are separated. As in the current plant, the heavier solids settle and will be scraped off the bottom, and the lighter material will be skimmed off the top of the basins. The materials that are removed will be sent to solids processing facilities. By adding coagulants to the raw wastewater, settling of the solids in advanced primary treated wastewater will improve. The primary treated effluent will then flow to the secondary treatment facilities.
6. Advanced Secondary Treatment
 - a. Primary treated effluent will be conveyed to renovated trickling filters. The trickling filters contain plastic media, which facilitates the growth of microorganisms on the surface of the media. The microorganisms consume most of the soluble organic solids.
 - b. The effluent from the trickling filters will be conveyed to rectangular aeration basins where air will be injected into the basins using fine bubble air diffusers, which will be located at the bottom of the basins. The diffused air and remaining wastewater solids contained in the primary treated effluent will be consumed as food by microorganisms, which are contained in the aeration basins. This process is called activated sludge. The activated sludge process will include both anoxic and aerobic treatment zones to provide removal of both BOD and nitrogen from the wastewater stream.
 - c. The aerated effluent will flow over the weirs to the secondary clarifiers where the activated sludge settles out. Most of it is scraped off the bottom and returned to the aeration basins to regenerate this process, while the excess is sent to solids processing.
7. Tertiary Filters
 - a. Up to 2 MGD of secondary effluent from the secondary clarifiers will flow to dual or cloth media filters that filter the water for removal of fine particulate matter. Next, the filtered water will be disinfected using sodium hypochlorite or ultraviolet radiation.
8. Solids Processing
 - a. Solids removed in the primary and secondary treatment processes are pumped into anaerobic digesters where they undergo natural decomposition for 20-25 days. Half the solids convert to a gas mostly made up of methane, which is sent to on site energy recovery facilities. While in the digesters, the methane gas is maintained at a low

pressure of less than 12 inches of water column. The remaining solids are pumped to dewatering facilities to achieve a 25 percent solid material (with a cake-like consistency) called biosolids. The biosolids are transported for direct land application as a soil amendment at the WWTP No. farm.

9. Energy Recovery
 - a. The methane gas derived from the digesters will be used to power engine-generator units that produce the electricity used as the primary energy source to operate the treatment plant. Depending on the engine-generator manufacturer, the methane gas will need to be stored in a pressurized tank (approx. 25-100 pounds per square inch). Any remaining methane gas that is not used by the engine-generators will be burned in dual fueled process heaters, or in a waste gas flare approved by the San Joaquin Valley APCD.
10. Water Recycling and Reuse
 - a. Tertiary treated wastewater will be conveyed to a storage basin or tank where the water will be retained for use as recycled water for various nearby land application, and plant wash and make-up water. Plant wash and make-up water is water used to support operations at the wastewater treatment plant, such as for cleaning and other activities.
11. Effluent Disposal
 - a. Treated effluent will be transported via pipeline to an agricultural area called the I-5 Reclamation Site. Up to fourteen (14) MGD of treated effluent will be spread over the ground as crop irrigation water.
 - b. Remaining advanced secondary treated effluent, 16 MGD up to 18 MGD, will be piped to ponds onsite for seepage into the ground by percolation. The design percolation rate for the effluent is 3 inches per day, requiring percolation in existing storage ponds and the construction of approximately 150 acres of additional ponds.
 - c. As noted, up to two (2) MGD of advanced secondary treated wastewater will be sent to the tertiary facility for further treatment and highly treated effluent will be used for nearby land application, such as site landscaping, and plant wash and make-up water.
12. Solids Disposal
 - a. Dewatered sludge will be trucked to City owned farmland at Wastewater Treatment Plant No. 2 and spread on the ground for use as a fertilizer for non-food crops. The proposed method of sludge disposal is the same as the current sludge disposal process. In addition, solids collected in bar screens and septage screens will continue to be sent to a sanitary landfill, and grit from the grit chambers will continue to be transported to the Mt. Vernon Recycling Facility for composting.
 - b. Treated and dewatered sludge will be categorized as Class B sludge.
 - c. The City owned farmland is located within 10 miles of Plant No. 3 at the WWTP No. 2 facility.
 - d. Upon completion of the upgraded treatment facilities, solids from the sludge drying beds will be dried in place and then transported to the Plant No. 2 farm for direct land application as a soil amendment. The drying beds will then be removed from full-time operation in favor of the new mechanical dewatering facility, once it becomes operational.

In addition to the upgraded, renovated, and expanded wastewater treatment facilities, the project will include the following:

- a. A new operations building, and administration/regional laboratory building of approximately 4,124 square feet (sf) and 10,232 sf, respectively, to be located adjacent to McCutchen

Road. McCutchen Road will be improved by the City from a dirt road to a new major arterial roadway per City standards.

- b. A new shop and equipment maintenance building (approximately 4,880 sf) will be constructed to replace the existing facilities.
- c. The existing operations building will be renovated within the existing building footprint to accommodate the Plant maintenance staff.
- d. Roadway improvements along the WWTP No.3's frontage will be constructed by the City from the centerline of Ashe Road west to the property boundary, from the centerline of McCutchen Road south to the property boundary, and from the centerline of Gosford Road east to the property boundary.
- e. Upgraded paved interior roadways to provide improved circulation will be developed for use by the Plant operations and maintenance staff.
- f. Acceleration and deceleration lanes will be constructed as necessary in the future to provide safe ingress and egress to and from the plant for sludge hauling trucks and other major vehicles accessing the plant, although, such improvements will not be undertaken until traffic volumes increase that such traffic improvements are needed.
- g. Landscaping, which will include a combination of trees and shrubs, and approximately 6 feet high landscaped berms will be incorporated into the project to provide visual screening and mask the Wastewater Treatment Plant No. 3 from the future anticipated commercial and residential areas, to be constructed adjacent to the Plant on McCutchen, Ashe, and Gosford Roads (See Figures 8 and 9).
- h. As part of the proposed project several permitted equipment air emission sources which currently exist on site will be removed and/or replaced by newer more efficient models. The existing and replacement units include:

Permitted Equipment Sources

The existing 16 MGD facilities include the following permitted equipment:

- One emergency flare to burn waste digester gas
- One diesel fired emergency backup generator
- One digester gas fired internal combustion cogeneration engine
- Four dual fueled (digester gas and propane fired) boilers for digesters
- Two dual fueled (digester gas and propane fired) boilers for sludge heaters
- One 155 HP Komatsu portable generator (diesel fired)

The 32 MGD plant expansion will include the following permitted equipment:

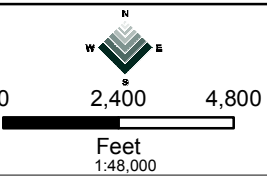
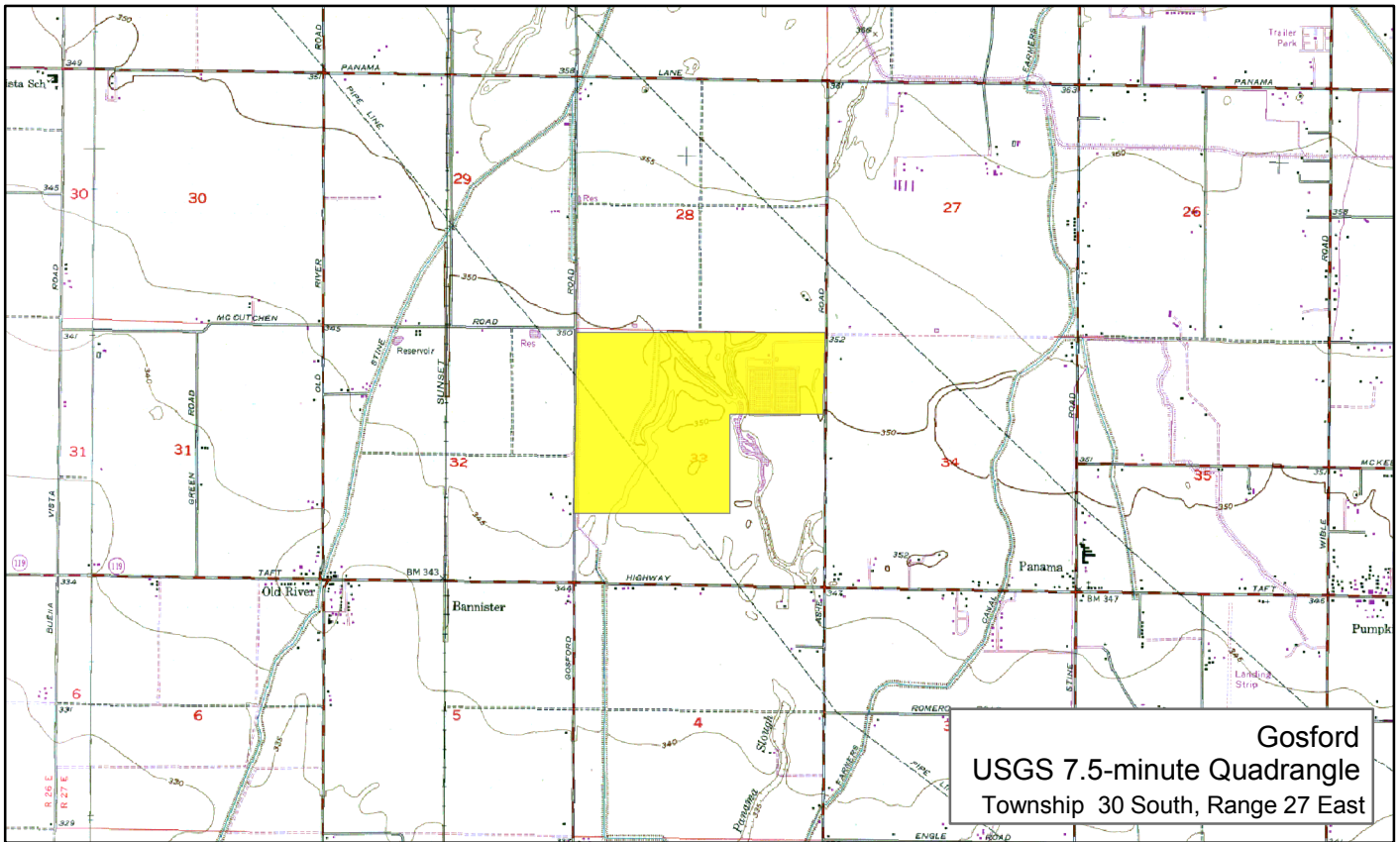
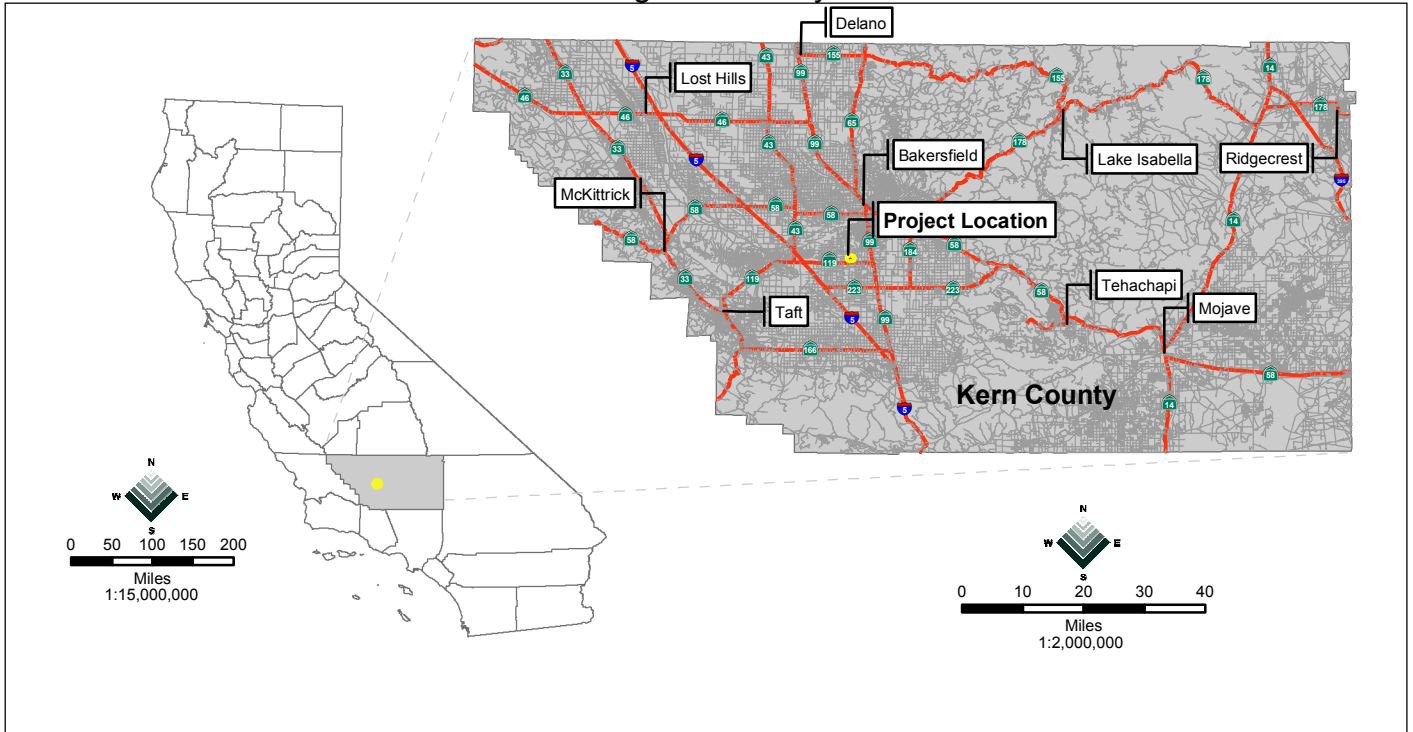
- One new emergency flare to burn waste digester gas. The existing flare will be retired, or it may be modified and retained for continued use.
- Four new diesel fired emergency backup generators. The existing diesel fired emergency backup generator will be retained.
- Two new digester gas fired internal combustion cogeneration engines. The existing digester gas fired cogeneration engine will be retired.
- Eight dual fuel (natural gas and digester gas fired) process heaters for the plant digesters. Two of the existing four digester gas fired boilers for digester heating and the two dual fueled boilers for sludge heaters will be retired. The remaining two newest

digester gas fired boilers for digester heating will be modified to be dual fueled (natural gas and digester gas fired). Four new dual fueled (natural gas and digester gas fired) process heaters will be installed. The process heaters will run primarily on natural gas, and digester gas will be used only during the downtime of the digester gas fired cogeneration engines.

- The existing 155 HP Komatsu portable generator will be retired when the new plant becomes operational.
- i. As shown in the Circulation Element of the MBGP, two quarter section line Collector Roads are designated for passage through the property (see Figure 3). These rights of ways (ROW) will be reserved in order to accommodate the possibility that the WWTP No. 3 land may someday no longer be needed to support wastewater treatment operations. Should this land be made available for development, it would require Collector roads to support urbanization. However, it should be noted that the property is planned for continued use as a wastewater treatment facility for many years.
- j. In order to attenuate noise associated with the project: aeration basin blowers will be contained within a concrete block building and all ventilation opening for air intake and exhaust will be baffled to reduce exterior noise generation; IC Engines in the co-generation facilities will be contained within a concrete block building, and any ventilation opening for air intake and exhaust will be baffled to reduce exterior noise generation; and emergency backup generation will be contained by a sound proofed enclosure of similar design to that found on the existing emergency back-up generator located on site.
- k. An increase of employees to staff the expanded plant. Currently approximately 15 employees work at the site. The number of employees will gradually increase to approximately 30 as the operations increase in subsequent years to the full 32 MGD capacity.

WWTP No. 3 - Expansion & Upgrade

Regional Vicinity

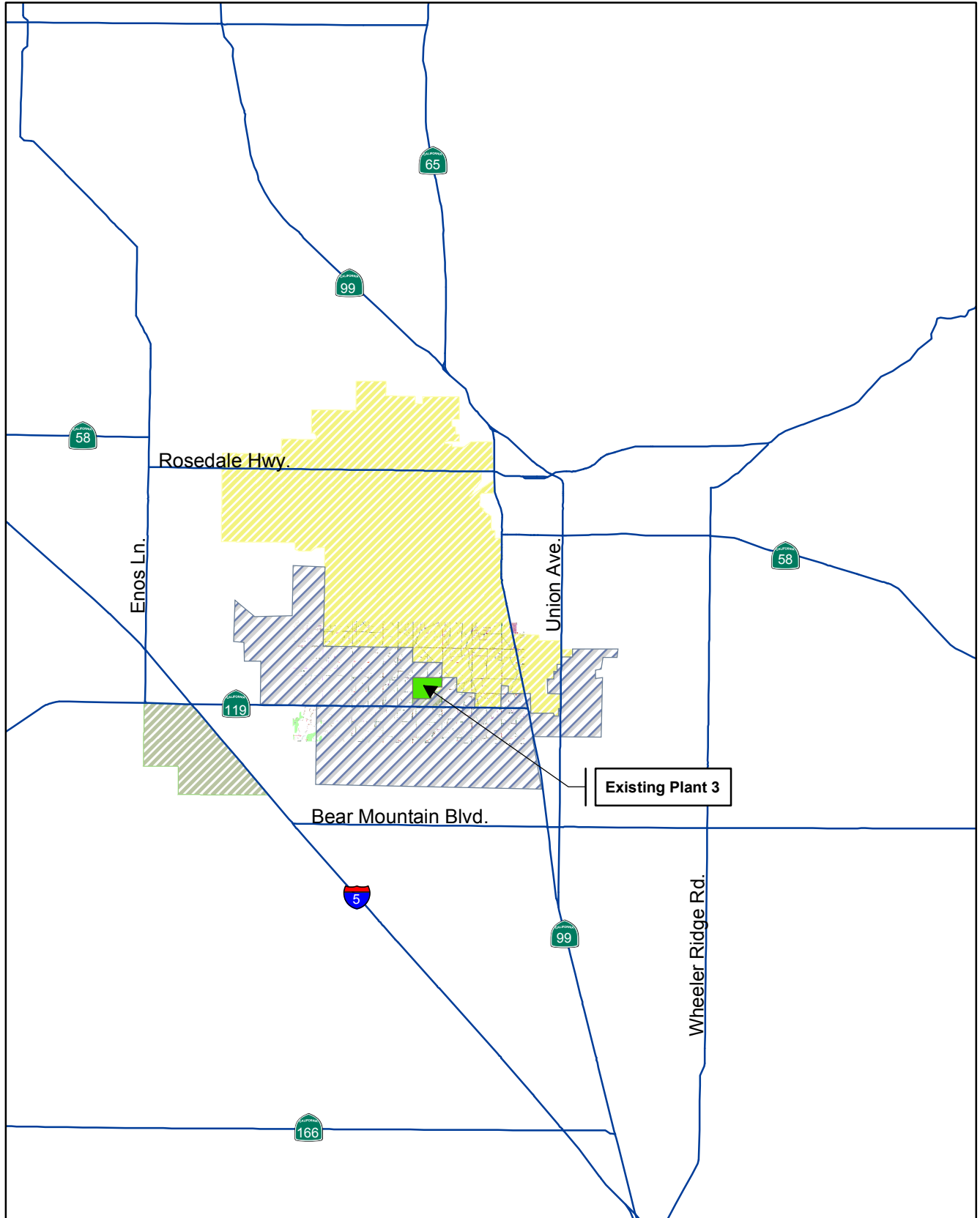


 Project Area

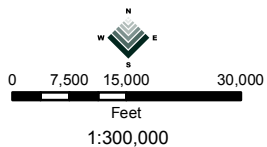

Quad Knopf
 Figure 1

WWTP No. 3 - Expansion & Upgrade

Future Plant No.3 Service Area



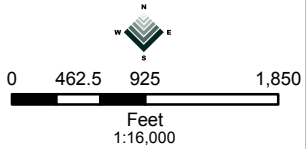
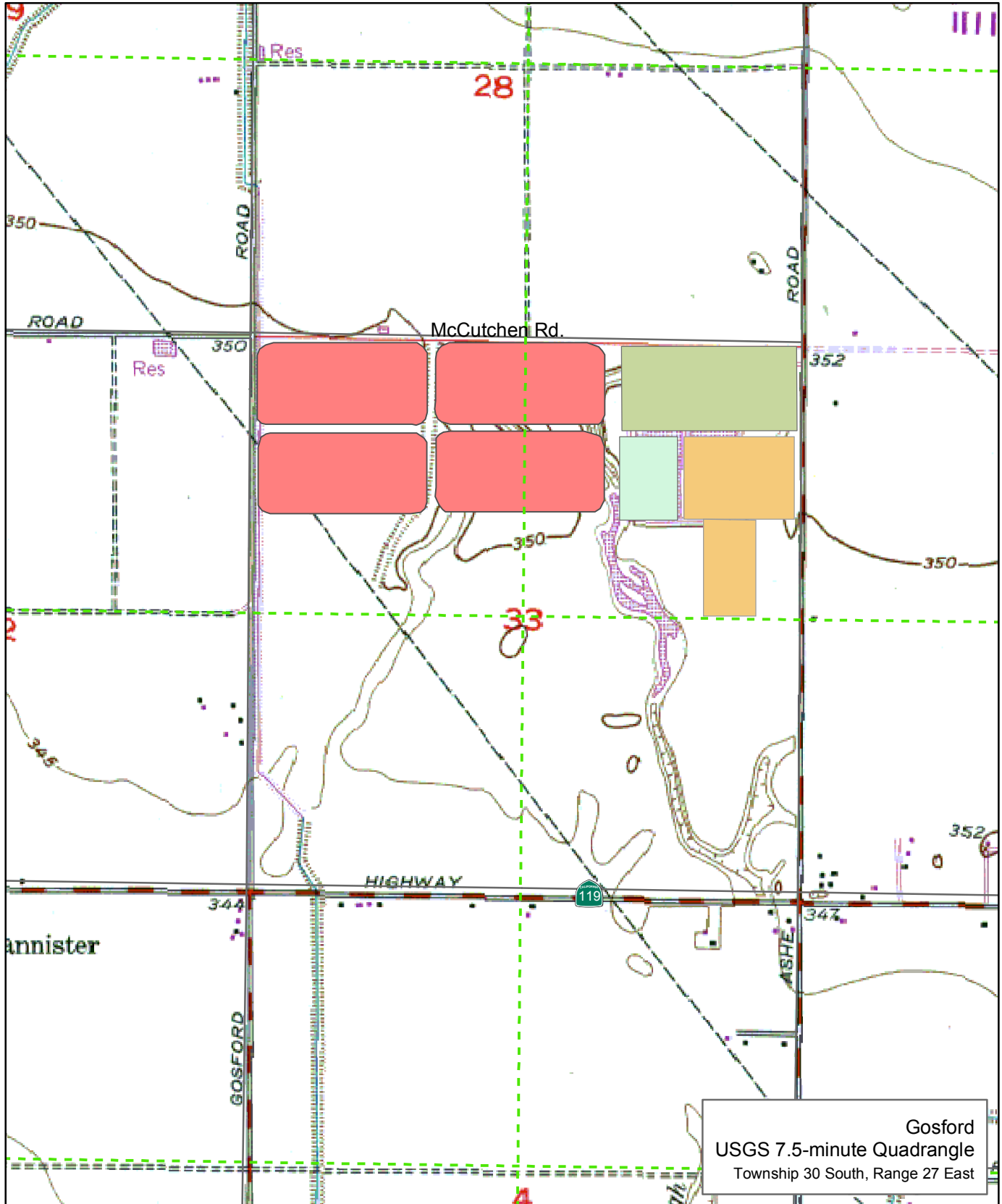
Existing Plant 3



- Plant No. 3 Service Area
- Future Plant No. 3 Service Area
- Plant No. 3 Effluent Disp. Area
- Project Area

WWTP No. 3 - Expansion & Upgrade

Existing 16 mgd WWTP No. 3 Project Area

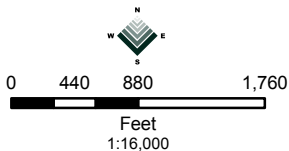
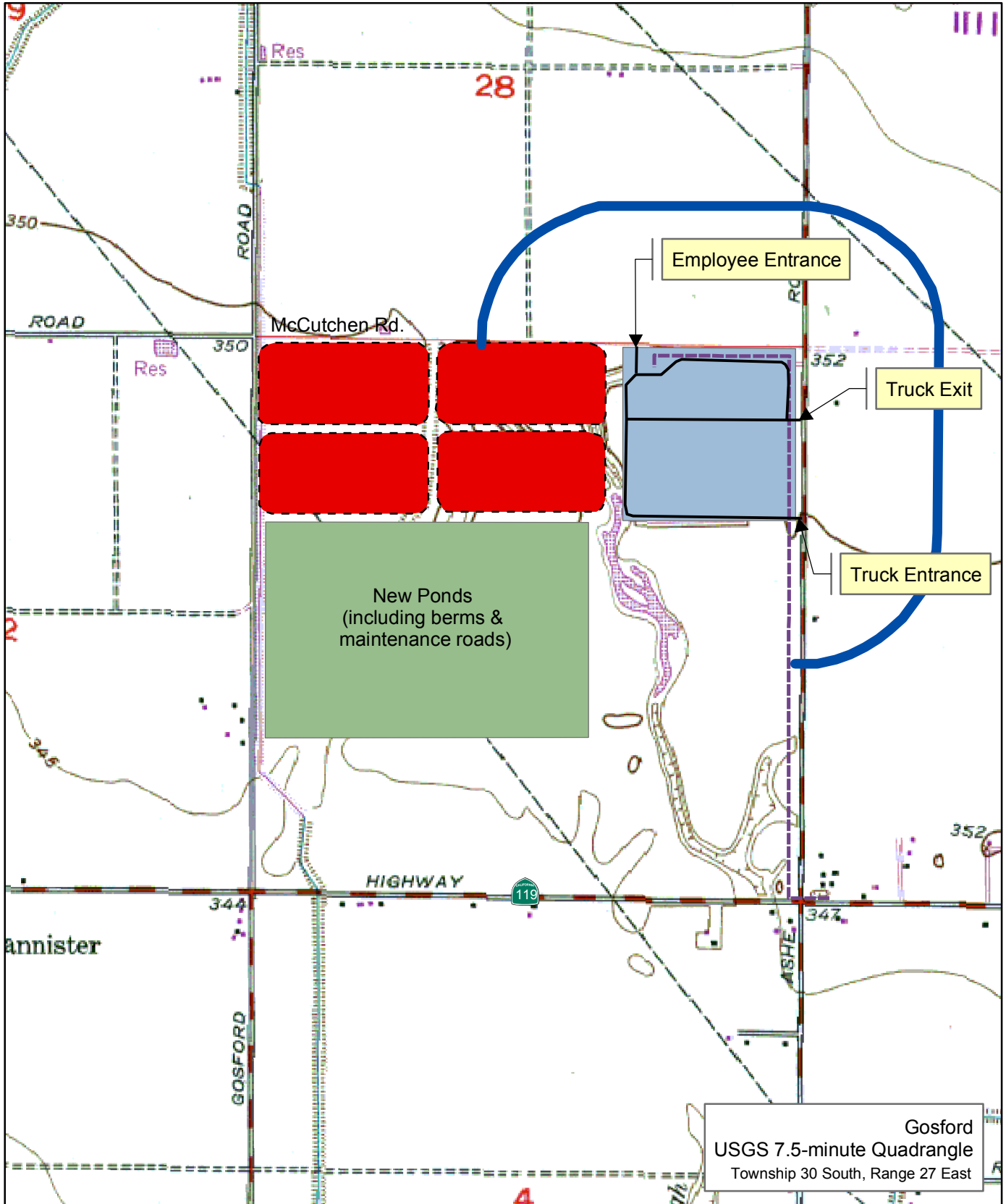


- 4 Storage Ponds
- 16 mgd Treatment Facility
- Sludge Drying Beds
- Overflow Basin
- Future Collector Road

Quad Knopf
Figure 3

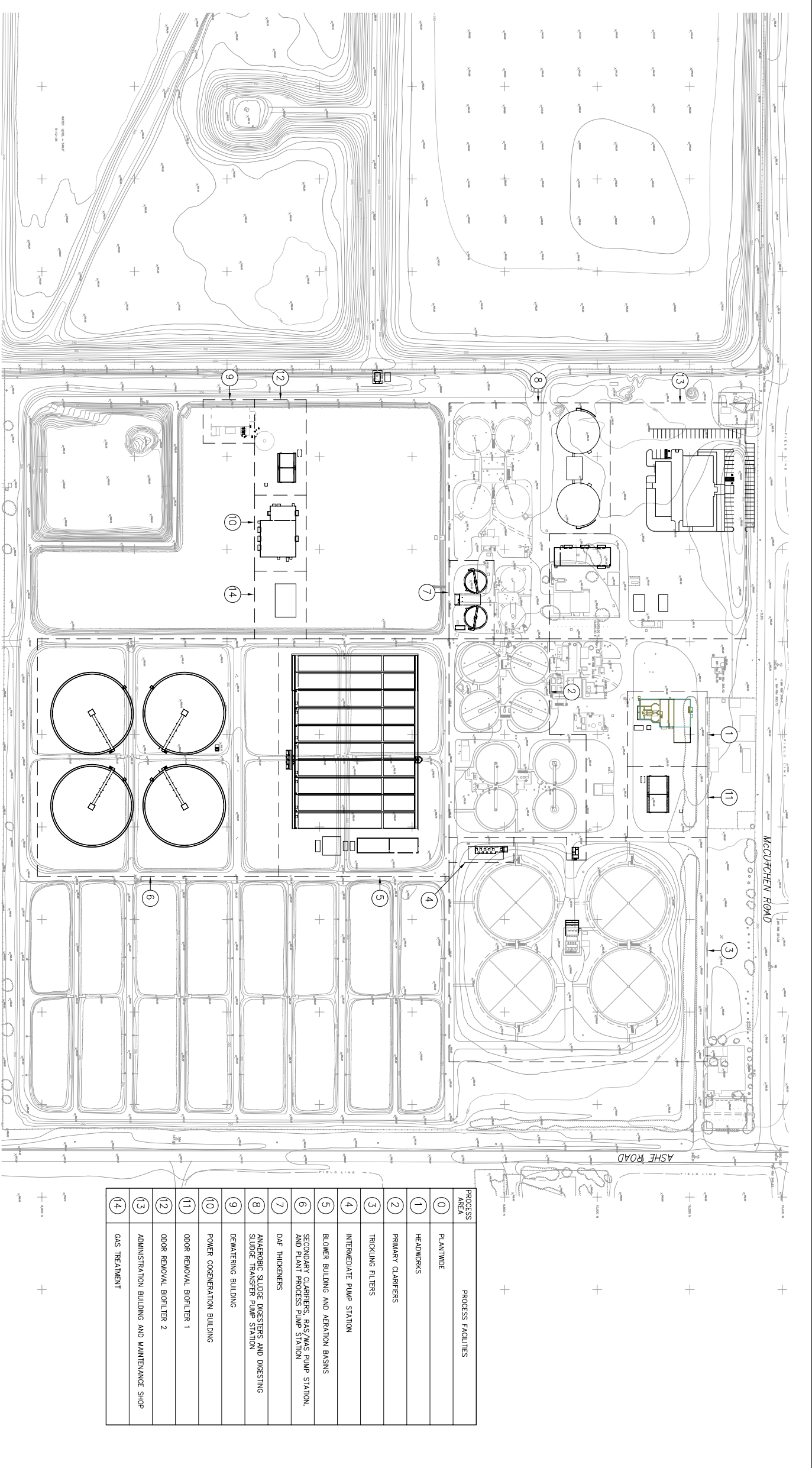
WWTP No. 3 - Expansion & Upgrade

Proposed 32 MGD Facilities

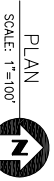


- Percolation Ponds
- 32 mgd Treatment Facilities
- New Ponds
- Internal Circulation
- Low Pressure Gas Line
- 1/4 Mile Odor Buffer

WWTP No. 3 Expansion & Upgrade Process Area Index



PROCESS AREA	PROCESS FACILITIES
0	PLANTWIDE
1	HEADWORKS
2	PRIMARY CLARIFIERS
3	TRICKLING FILTERS
4	INTERMEDIATE PUMP STATION
5	BLOWER BUILDING AND AERATION BASINS
6	SECONDARY CLARIFIERS, RAS/MAS PUMP STATION, AND PLANT PROCESS PUMP STATION
7	DAF THICKENERS
8	AEROBIC SLUDGE DRYERS AND DRESTING SLUDGE TRANSFER PUMP STATION
9	DEWATERING BUILDING
10	POWER COGENERATION BUILDING
11	OOOR REMOVAL BIOFILTER 1
12	OOOR REMOVAL BIOFILTER 2
13	ADMINISTRATION BUILDING AND MAINTENANCE SHOP
14	GAS TREATMENT



PLAN
SCALE: 1"=100'

0 50' 100' 200' 300'
SCALE: 1" = 100'

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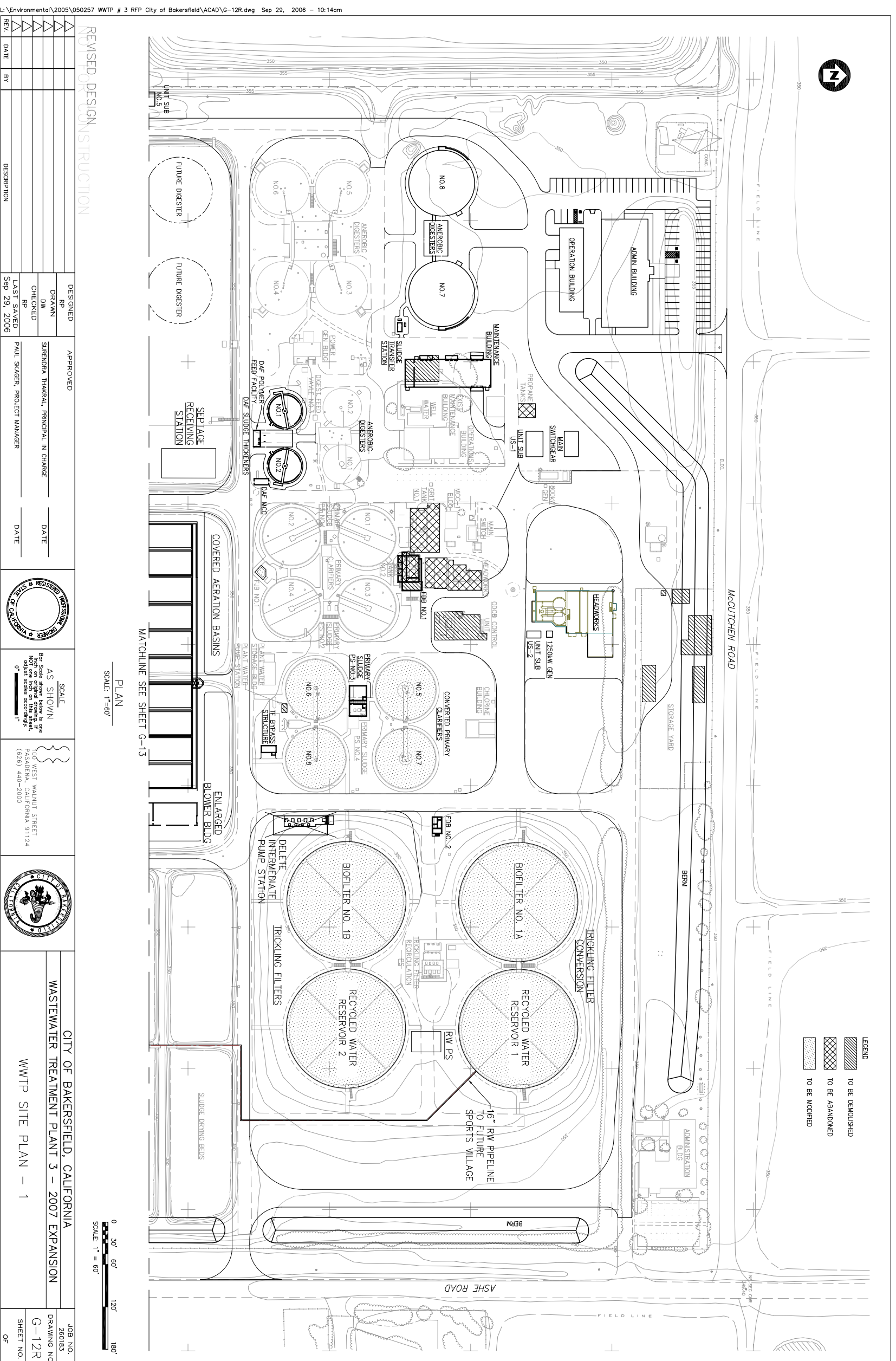
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PP	DRAWN	SURENDRA THAKRAL, PRINCIPAL IN CHARGE	DATE				
PP	CHECKED	PAUL SKAGER, PROJECT MANAGER	DATE				
PP	LAST SAVED	Sep 29, 2006					
PP	DESCRIPTION						

NOT FOR CONSTRUCTION

No Scale

Source:
PARSONS

WWTP No. 3 Expansion & Upgrade Site Plan 1



REMOVED DESIGN CONSTRUCTION

PLAN
SCALE: 1" = 60'

0 30' 60' 120' 180'
SCALE: 1" = 60'

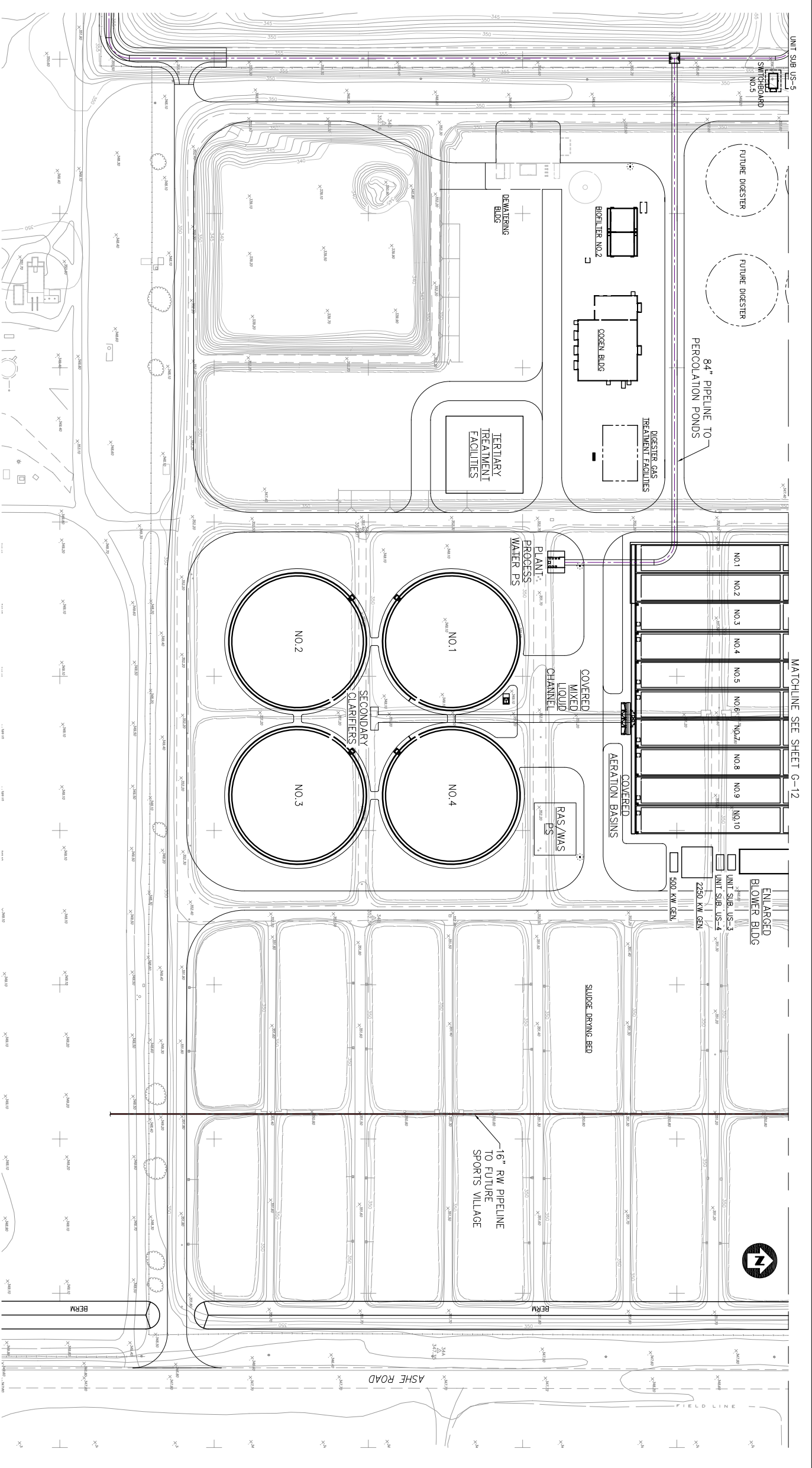
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CHECKED RP	PAUL SKAGER, PROJECT MANAGER	DATE				SHEET NO. OF
REV. 1	LAST SAVED Sep 29, 2006	DATE				

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No Scale

Source:
PARSONS

WWT P No. 3 Expansion & Upgrade Site Plan 2



REMOVED DESIGN CONSTRUCTION

PLAN
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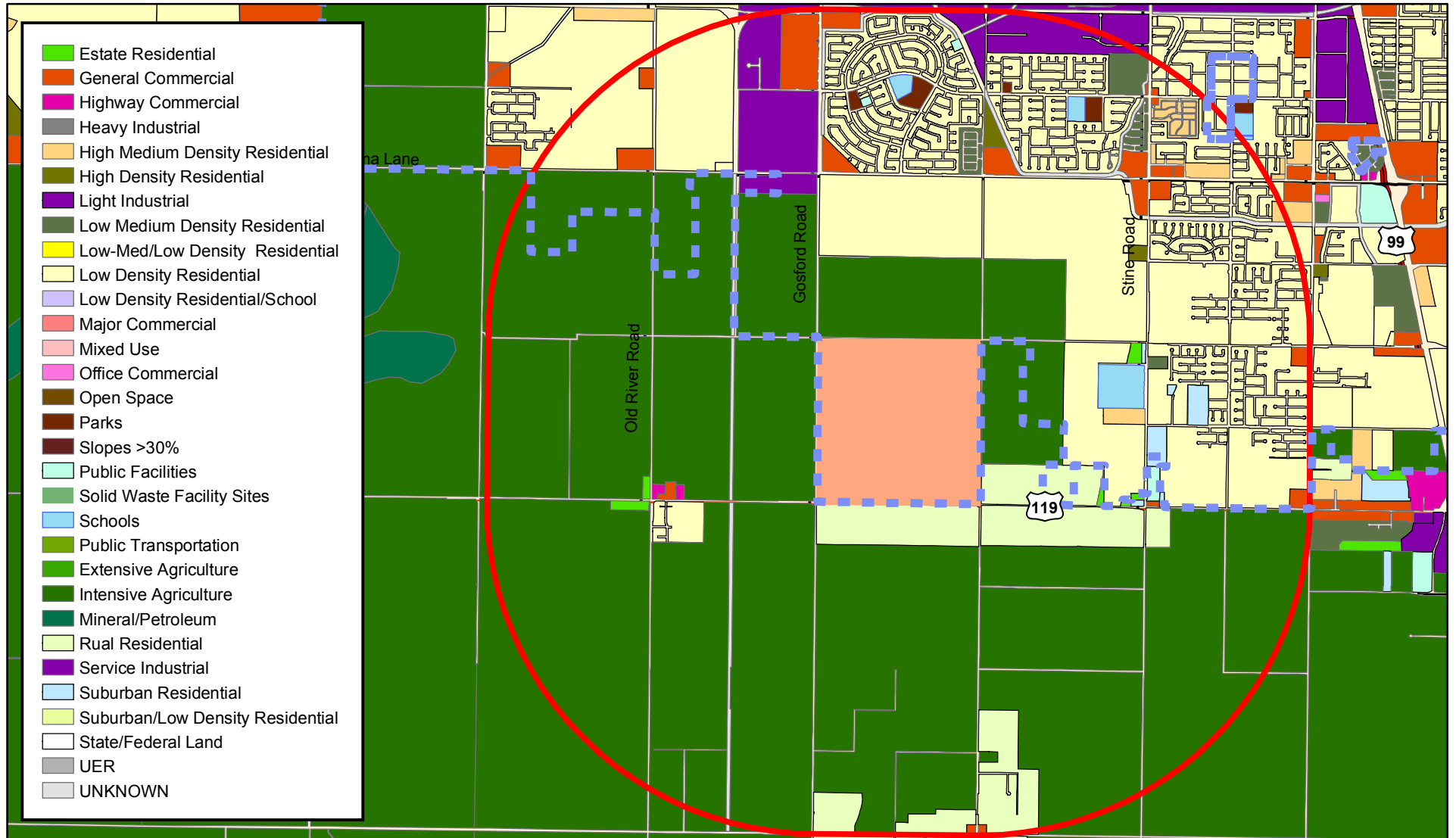
DESIGNED RP	APPROVED	SCALE AS SHOWN Bearing on original drawing per NOT per notes on this sheet. 1" = 60'	CITY OF BAKERSFIELD CALIFORNIA	JOB NO. 260183
DRAWN DW	SURENDRA THAKRAL, PRINCIPAL IN CHARGE	1107 WEST WALNUT STREET PASADENA, CALIFORNIA 91124 (626) 440-2000	WASTEWATER TREATMENT PLANT 3 - 2007 EXPANSION	DRAWING NO. G-13R
CHECKED RP	PAUL SKAGGER, PROJECT MANAGER		WWTP SITE PLAN 2	SHEET NO. OF
LAST SAVED Sep 29, 2006	DATE			
REV. DATE BY DESCRIPTION				

No Scale

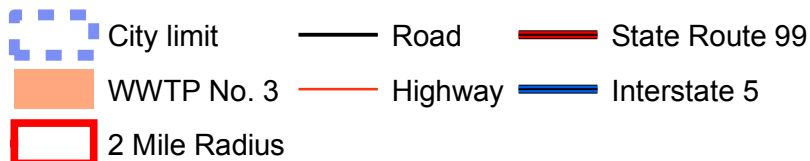
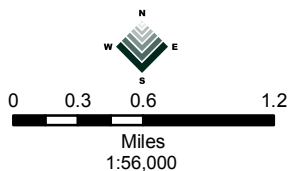
Source:
PARSONS

Wastewater Treatment Plant No. 3 - Expansion & Upgrade

Existing Land Use Designation Map

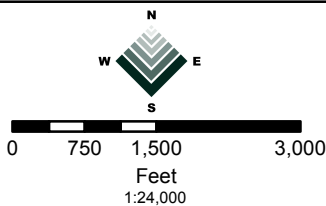
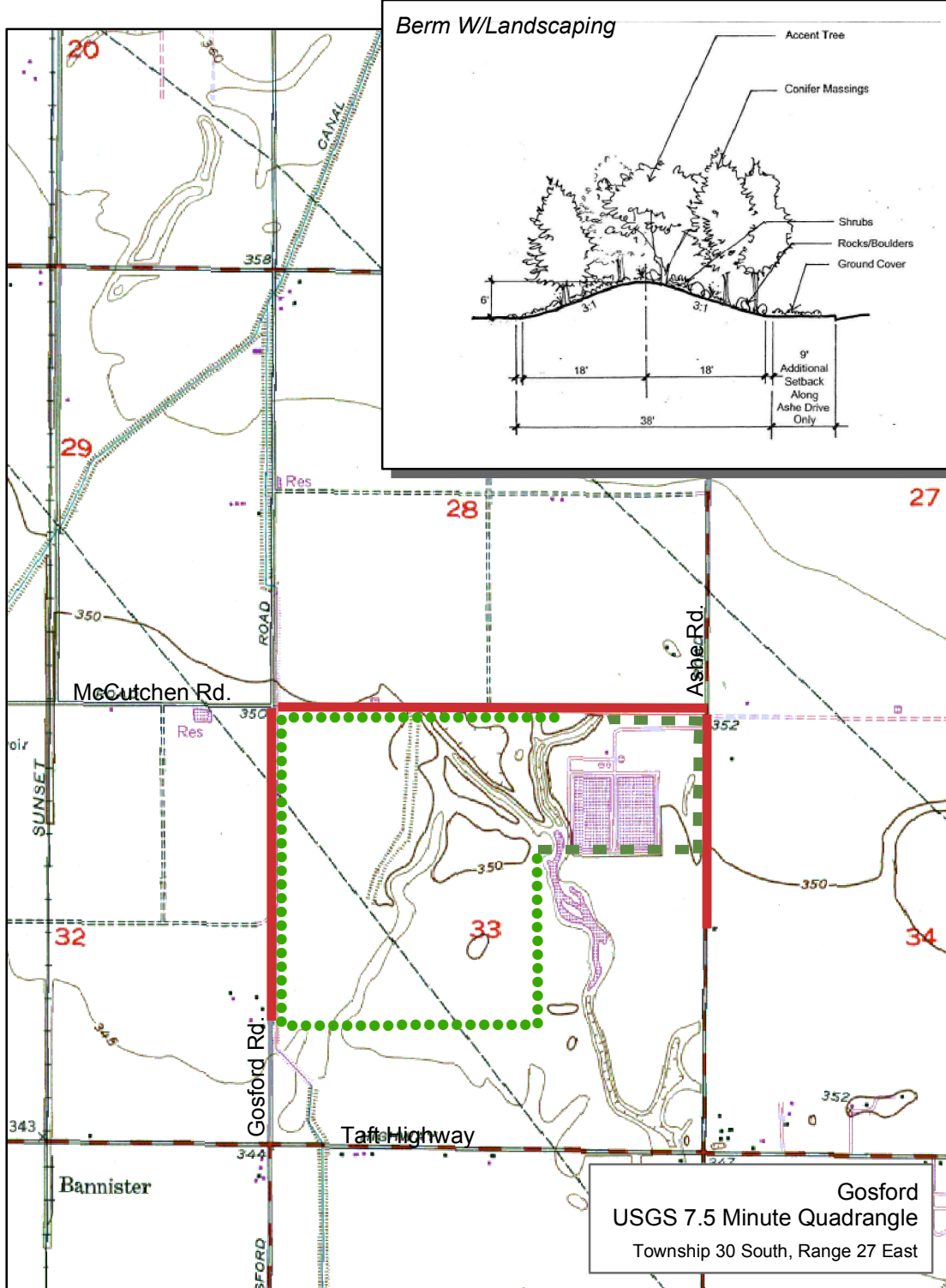


Source: City of Bakersfield, March 2006



WWTP # 3 Expansion & Upgrade

Boundary Improvements



- Road Improvements
- - - Berm w/ Landscaping
- Landscaping Only



Quad Knopf
Figure 9

3.4 PROJECT OBJECTIVES

The objectives of the proposed project are as follows:

1. To expand and upgrade a treatment plant that will provide additional capacity to accommodate the growth of residential homes, commercial businesses, and industries approved by the City.
2. To expand and upgrade the treatment plant such that it will provide a higher level of removal of wastewater constituents such as suspended solids, BOD, Nitrogen (including nitrates), and water borne bacteria and viruses thus improving the receiving ground water basin relative to current operations.
3. To upgrade a portion of the wastewater to State Recycled Water Standards so reclaimed water can be reused as irrigation water for nearby land application, and plant wash and makeup water.
4. To provide for improved land use compatibility as the adjacent areas urbanize, utilize additional landscaping combined with earthen berms at the Plant perimeters to provide a friendly façade and mask the Treatment Plant from the future anticipated commercial and residential areas, which may be constructed adjacent to the Plant on McCutchen Road, Ashe Road, and Gosford Road.
5. To reduce traffic congestion in the project vicinity as a result of future increased truck traffic, the surrounding roadways will be upgraded for improved ingress and egress
6. To provide enhanced odor control to reduce the potential of off-site unpleasant odors in adjacent future developments.
7. To comply with Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDR) Order Numbers R5-2003-0161 and 5-01-105, Provision B-3 which requires compliance with future treatment standards by April 15, 2010. The plant processes will be designed to meet the updated Waste Discharge Requirements set by the Central Valley Regional Water Quality Control Board.

3.5 PROJECT PHASING

Construction on the expansion and upgrade of the treatment facility is anticipated to begin in early 2007 and conclude in late 2009/early 2010. The proposed project does not include phasing.

3.6 AGREEMENTS, PERMITS, AND APPROVALS

- City of Bakersfield- Modified Conditional Use Permit (CUP)
- Regional Water Quality Control Board- Waste Discharge Requirements (WDR)
- Department of Health Services (DHS)- Title 22 Permit
- San Joaquin Valley Air Pollution Control District (SJVAPCD) Authorities to Construct/Permits to Operate (ATC/PTO) for new equipment

4.0 BASIS OF CUMULATIVE ANALYSIS

4.1 CEQA REQUIREMENTS

Per Section 15130(a) of the State CEQA Guidelines, "An EIR shall discuss cumulative impacts of a project when a project's incremental effect is cumulatively considerable, as defined in Section 15065 (a)(3) of the Guidelines".

Section 15355 of the State of California Environmental Quality Act (CEQA) Guidelines, as amended, provides the following definition of cumulative impacts: "Cumulative impacts refers to two or more individual effects which, when considered together, are considerable, or which compound or increase other environmental impacts" Further, Section 15065(a)(3) defines cumulatively considerable as "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

The Initial Study Checklist indicates that the proposed Project may yield potentially significant cumulative effects (See Appendix 15.1). Therefore, Section 5.0, DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES of this Environment Impact Report (EIR) provides a cumulative impact assessment for each applicable environmental issue, and does so to a degree that reflects the severity and likelihood of occurrence of each impact.

As indicated above, a cumulative impact involves two or more individual effects. Per State CEQA Guidelines Section 15130, the discussion of cumulative impacts shall be guided by the standards of practicality and reasonableness. Per CEQA Guidelines Section 15130(b), the following elements are necessary in an adequate discussion of significant cumulative impacts:

- (1) Either:
 - (a) A list of relevant past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the Agency, or
 - (b) A summary of projections contained in an adopted General Plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency; and
- (2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example when the impact is specialized, such as a particular air pollutant or mode of traffic.
- (3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.
- (4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

- (5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

4.2 CUMULATIVE IMPACTS

The City of Bakersfield Planning Department has recommended a cumulative projects geographic scope area for selecting relevant past, present and probable future related projects as the area which encompasses an area centered on the project bounded by a circle with a radius of 5 miles. Given the rapid increase in urbanization of the southwest portion of the City, and plans proposed to further develop this emerging southwest center as envisioned in the MBGP that falls within the service area of WWTP No. 3, a geographic scope of this size was determined appropriate to capture the adjacent relevant projects. Tables 4.2A & 4.2B, below, list closely related past, present and reasonably foreseeable and probable future projects and other development in the area, which in conjunction with the proposed project, have the potential to cause a cumulative impact. Table 4.2A, summarizes existing related projects within a five mile radius by tract numbers, lots, and acreage to determine the number of units or square footage realistically expected to be developed. Table 4.2B, shows all other development related activity within a five mile radius of the Project site (See also Figures 10 & 11).

**Table 4.2A
Cumulative Projects List- Tract Maps**

File No	Subdivider	Lots	Acres
T5762R	R-M Development, Inc.	143	47.79
T5944	Hershel Moore	178	50.69
T6032	Communities At River Oaks	108	35.56
T6006	HB Development	305	80.49
T6064	Summerwinf Group, Inc.	188	39.66
T6066	Leo A. Stockhill & Ryan V. Fisher	180	39.99
T6079	Burlington Homes	269	70.53
T6082	Coleman Homes, Inc.	267	64.14
T5362R2	Sierra Country Estates	157	38.75
T6086	Castle & Cooke California, Inc.	30	28.36
T6104	Centex Homes	417	147.17
T6131	Castle & Cooke California, Inc.	119	47.12
T6116	JVB LLC	58	14.29
T6112	Arredondo Ventures, Inc.	7	2.00
T6125	Stonecreek Partners, Inc.	104	39.99
T6141	CEK Inc. & ADC Development, Inc.	73	18.56
T6124	Stone Creek Partners	131	40.00
T6095	Delfino, LLC	411	98.30
T6150	Castle & Cooke California, Inc.	49	22.79
T6151	Castle & Cooke California, Inc.	47	28.20
T6165	Bob Smith	95	22.95
T6164	Almond Tree Village	102	22.75
T6170	Woodard Homes	260	50.02
T6166	Castle & Cooke California, Inc.	154	27.80
T6156	Coleman Homes, Inc.	234	60.23
T6152	San Joaquin Development	223	63.01
T6178	Mc Kee Road Partners, Inc.	118	39.99

T6177	Burton & Mary Davies	91	20.02
T6169	Kyle Carter Homes	350	92.13
T6167	Don Judkins	180	40.88
T6104R	Centex Homes	488	167.17
T6187	Lonnie Oman	44	10.23
T6190	Bakersfield 26, LLC	116	30.61
T6155	Almond Tree Village	133	27.91
T6192	Lenox Homes	185	40.02
T6196	Lennar Bakersfield, Inc.	239	67.73
T6210	Lennox Homes	86	20.02
T6199	Castle & Cooke California, Inc.	42	18.76
T6219	Coleman Homes, Inc.	111	32.12
T6227	Stonecreek Partners, Inc.	58	21.90
T6223	Castle & Cooke California, Inc.	242	107.38
T6130	Castle & Cooke California, Inc.	106	46.43
T6226	S & S Homes Inc.	49	20.00
T6209	Kern Housing Authority	120	28.79
T6169R	Mc Millin Albany, L.L.C.	347	87.81
T6283	Woodard Homes	25	16.14
T6255	Machaco Family Trust	20	4.79
T6291	RBL Development, Inc.	61	15.39
T6290	JM Development, Inc.	403	111.77
T6303	C & C Properties, Inc.	255	69.85
T6313	Lennar Bakersfield, Inc.	61	20.51
T6307	Mc Millin Albany, L.L.C.	17	4.32
T6320	Adavco, Inc.	184	60.05
T6323	Lennar Bakersfield, Inc.	164	40.46
T6329	Probuilt Development & Construction	301	81.49
T6351	Gabrielle Louise Vanherweg & Old Ri	256	82.22
T6348	Island Realty IV, LP, Juniper Court	1	5.52
T6367	Adavco, Inc.	278	59.22
T6353	W.B. Summit Development, L.L.C.	149	33.70
T6333	Adavco, Inc.	234	51.70
T6331	Robert E. Smith	155	36.03
T6349	Centex Homes	257	79.79
T6371	WNIA Inc.	75	9.02
T6181	Global Investment & Development Co.	364	78.88
T6390	RM Development, Inc.	14	4.12
T6369	Floyd Hinsley	187	40.03
T6368	Floyd Hinsley	29	126.00
T6362	CEK, Inc. & ADC Development, Inc.	167	40.09
T6332	Ridgeview II, Inc.	326	77.06
T6413	Firm Foundation Ventures	33	10.01
T6442	Adavco, Inc.	79	19.79
T6454	Adavco, Inc.	68	17.90
T6410	Hershel & Clarissa Moore	140	65.54

T6363	Lennar Homes Of CA	274	80.19
T6477	Kamall 94 Trust	84	19.52
T6475	Castle & Cooke California, Inc.	108	34.99
T6328	Lennar Homes, Inc.	299	79.83
T6478	Stine Road Development LLC	230	61.23
T6491	Workman Brothers Dev Co	111	30.00
T6462	Lennar Homes Of California, Inc.	23	8.93
T6531	Lennar Homes	298	78.25
T6359	Old River Road LLC	163	59.97
T6500	Cat Harbor Properties II LLC	99	25.34
T6520	Lenox Homes	287	67.60
T6536	Lennar Homes Of California	149	39.99
T6488	Myrna Parks	113	39.40
T6611	Adavco Inc	155	35.05
T6397	Adavco Inc	122	27.10
T6387	Adavco, Inc	313	78.98
T6557	Bakersfield Pacific	311	78.34
T6607	Michel Garone	151	36.05
T6551	Marguerite Garrone Bentz	39	13.81
T6565	Alexandra Ricks	1	1.28
T6652	Lennar Homes Inc	172	45.84
T6681	Castle & Cooke California Inc	29	5.71
T6553	BZ Development	225	59.88
T6639	Eagle Land Development	80	25.77
T6685	Lennar/Coleman	72	22.97
T6615	Ennis Land Development, LLC	159	40.10
T6332R	Dunmore Homes	318	76.84
T6788	Nirmal S Gill	19	4.22
T6616	Mc Cutchen 110, LLC	484	110.00
T6578	Centex Homes	266	46.28
T6653	Smee Builders	24	4.42
T6811	Lynx Realty & Management	84	3.77
T6706	Pb4-Ventures, LLC	16	628.46
T6719	Pb2-Ventures, LLC	19	615.75
T6739	Pb1-Ventures, LLC	6	228.82
T6776	Castle & Cooke California, Inc.	81	11.94
T6792	Pb3-Ventures, LLC	13	353.16
T6712	Adavco, Inc.	182	48.01
T6813	Monarch Affiliates #3. LLC	130	30.90
T6757	Centex Homes	233	77.01
T6759	Centex Homes	314	57.04
T6799	Castle & Cook California, Inc.	217	30.63
T5667R	So Pac Dist Chrstn & Mssn Allnce	95	24.90
T6758	Centex Homes	205	53.01
T6585	Global Investment & Dev, LLC	79	22.32

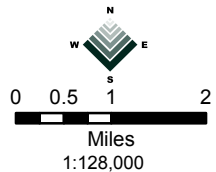
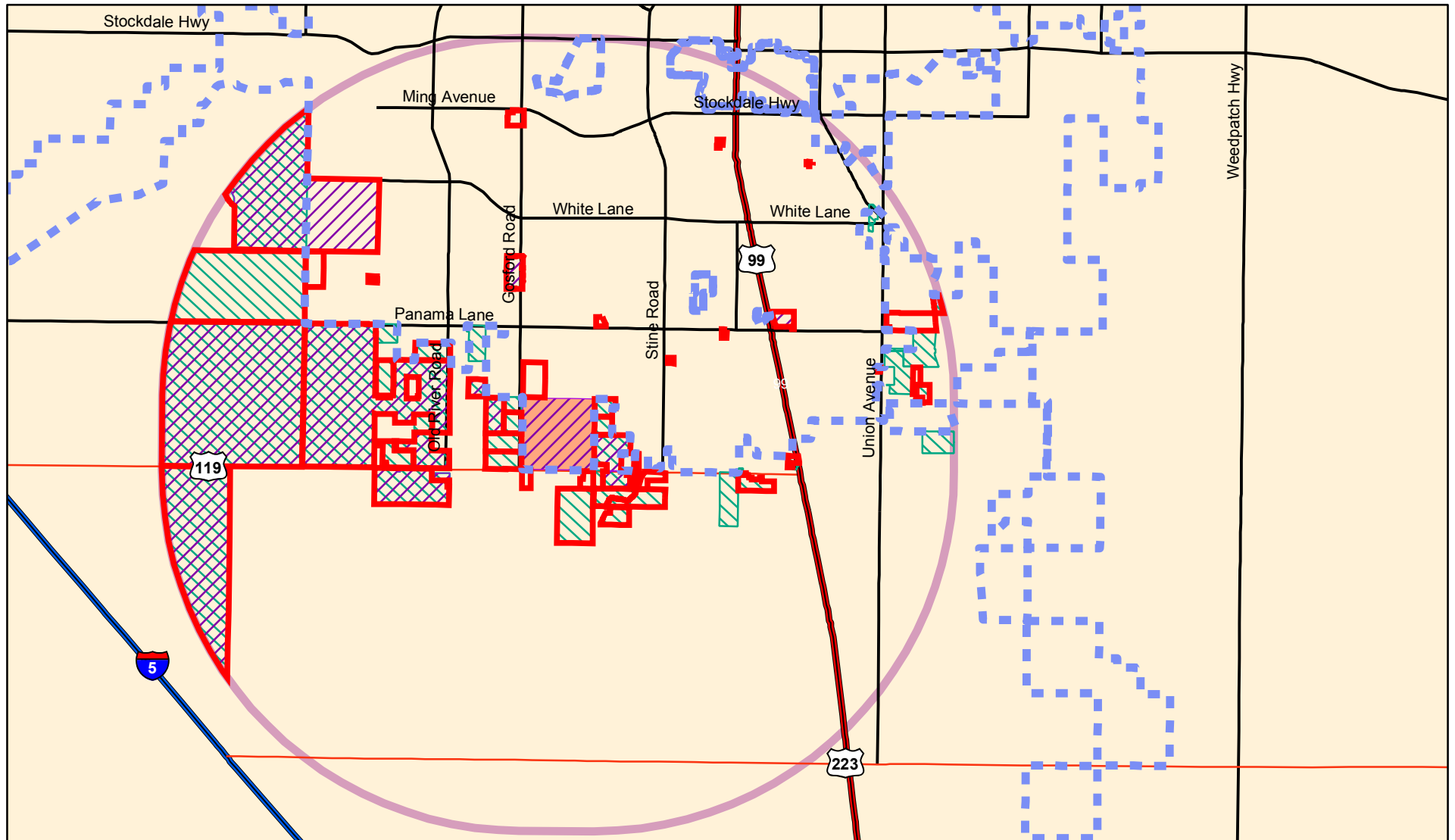
Table 4.2B
Cumulative Projects- GPA/ZC, Annexation, EIR

Annexation No.	Annexation Name	GPA/ZC No.	EIR Name	Acres
481	Panama No. 16	ZC 05-1507	NA	127.414
477	Ashe No. 3	GPA/ZC 04-1746	CENTEX EIR	188.853
468	McCutchen No. 3	GPA/ZC 04-1012	MC CUTCHEN EIR	122.879
488	McKee No. 5	ZC 05-0493	NA	16.695
496	McCutchen No. 4	GPA/ZC 05-1947	NA	45.173
500	Old River No. 4	GPA/ZC 05-0476	NA	76.635
502	Panama No. 17	NA	NA	46.975
493	Allen Rd. No. 13	GPA/ZC 03-1544	West Ming	1560.634
497	Union No. 12	NA	NA	104.692
518	McAllister Ranch	ZC 06-0321	NA	2039.252
514	Old River No. 5	GPA/ZC 03-1528	NA	84.706
508	McCutchen No. 5	GPA/ZC 04-1765	NA	43.134
506	Wible No. 13	GPA/ZC 05-0425	NA	182.841
503	Ashe No. 4	GPA/ZC 05-0519	NA	457.171
505	Panama No. 18	GPA/ZC 05-0940	NA	54.211
511	Ashe No. 6	GPA/ZC 05-0942	NA	79.062
509	Ashe No. 5	GPA/ZC 05-0945	NA	40.272
515	Ashe No. 7	NA	NA	11.599
507	Hosking No. 9	NA	NA	91.561
517	Panama No. 18	NA	NA	74.924
520	McCutchen No. 6	NA	NA	32.560
521	Stine No. 13	GPA/ZC 05-1479	NA	9.828
525	Ashe No. 8	NA	NA	20.621
527	Gosford No. 1	NA	NA	85.664
528	White No. 10	NA	NA	21.581
530	Gosford No. 2	NA	NA	83.122
523	Hosking No. 10	GPA/ZC 05-1280	NA	26.032
544	Old River No. 6	NA	NA	39.006
498	Old River No. 3	GPA/ZC 03-1528	Old River Ranch	1841.320
561	Renfro No. 1	GPA/ZC 06-0462	Gateway	3971.218
569	Panama No. 22	GPA/ZC 05-1692	Flying 7 Ventures	2558.311

559	Old River No. 8	GPA/ZC 05-1420	Old River 8	304.859
NA	NA	GPA/ZC 05-0938	NA	80.094
NA	NA	GPA/ZC 05-0926	NA	20.420
NA	NA	GPA/ZC 05-0872	NA	1.097
NA	NA	GPA/ZC 05-0426	NA	32.709
NA	NA	GPA/ZC 02-0030	Walmart-Gosford	66.542
NA	NA	GPA/ZC 02-0193	Walmart-Panama	37.428
NA	NA	ZC 03-1514	NA	6.070
NA	NA	GPA/ZC 05-0743	NA	82.780
NA	NA	GPA/ZC 05-1455	NA	3.834
NA	NA	GPA/ZC 05-1452	NA	77.822
NA	NA	GPA/ZC 05-1445	NA	9.823
NA	NA	GPA/ZC 05-1442	NA	5.498
NA	NA	GPA/ZC 05-1257	NA	77.887
NA	NA	GPA/ZC 05-1358	NA	6.008
NA	NA	GPA/ZC 05-0423	NA	95.133
NA	NA	ZC 05-1507	NA	106.134
NA	NA	ZC 05-1921	NA	0.165
NA	NA	GPA/ZC 05-1918	NA	18.850
NA	NA	GPA/ZC 05-1917	NA	25.443
NA	NA	GPA/ZC 06-0104	NA	1.514
NA	NA	ZC 06-0332	NA	29.507
NA	NA	NA	Treatment Plant Expansion	628.114

WWTP No. 3 - Expansion & Upgrade

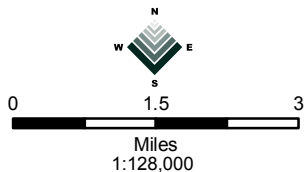
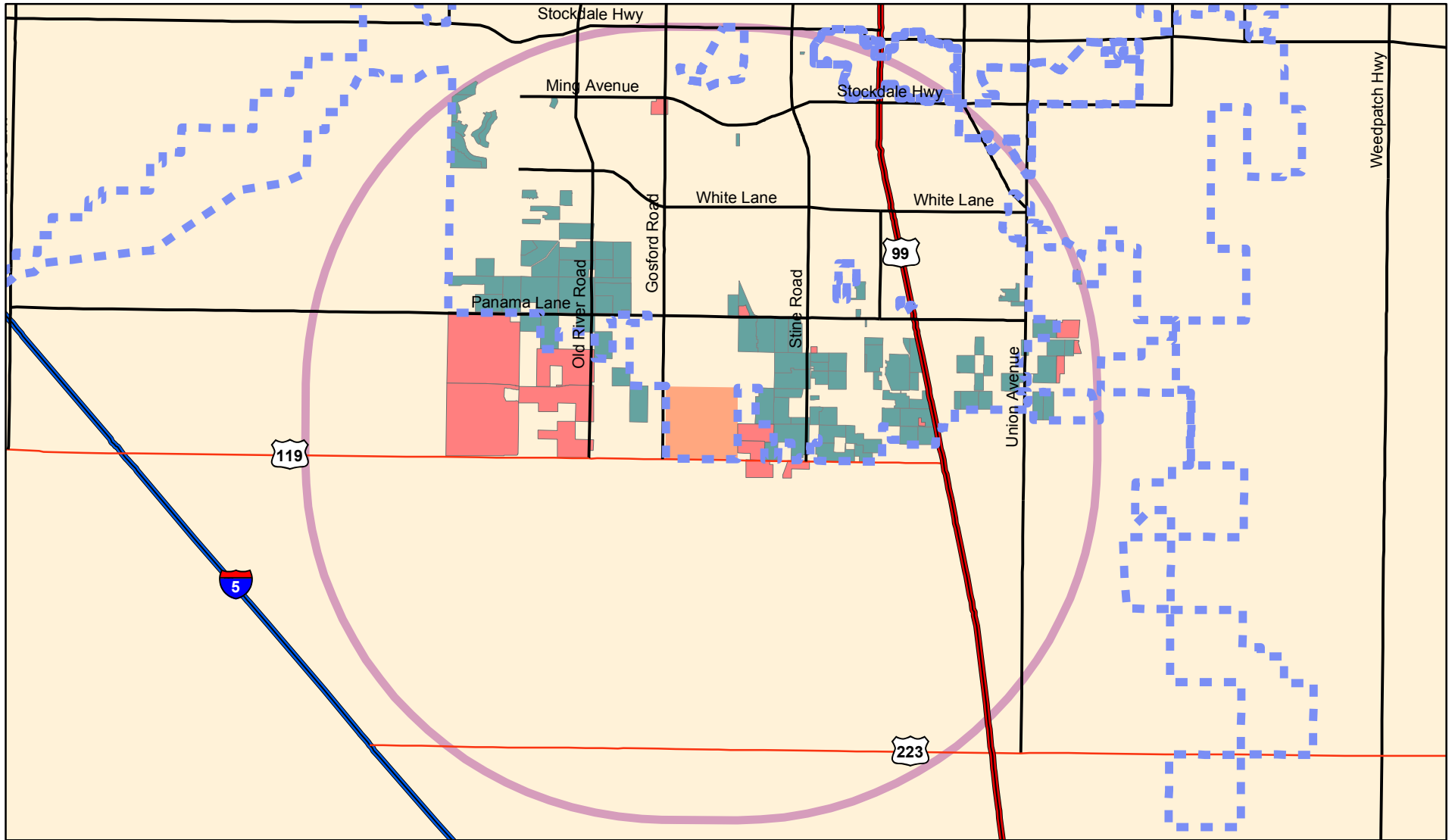
Cumulative Projects- GPA/ZC, Annexation, EIR




- | | | | |
|---------------------|---------------|---------|----------------|
| GPA/ZC | City limit | Road | State Route 99 |
| EIRs | WWTP No. 3 | Highway | Interstate 5 |
| Pending Annexations | 5 Mile Radius | | |

WWTP No. 3 - Expansion & Upgrade

Cumulative Projects Map- Tract Maps



-  City limit
-  Active Tract
-  5 Mile Radius
-  Road
-  State Route 99
-  WWTP No. 3
-  Pending Tract
-  Highway
-  Interstate 5

5.0 ENVIRONMENTAL EVALUATION

5.1 AESTHETICS

Information for this section was compiled from surveys, and other reference data from the City of Bakersfield, the County of Kern, and the Metropolitan Bakersfield General Plan (MBGP). The purpose of this section is to provide information on the project's regulatory and environmental issue settings, project related impacts, potential mitigation measures, potential cumulative impacts, and any residual impacts upon implementation of mitigation measures in order to provide any overall assessment of the project's aesthetic resources issues. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study.. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1.

5.1.1 AESTHETIC SETTING

The project site is currently a wastewater treatment plant and is generally surrounded on all sides by agricultural lands. Two industrial properties are located near the northwest corner of the project area. As such, the current light and glare from the project does not significantly impact a significant number of sensitive receptors (people). The project vicinity is consists of primarily agricultural activities with newer encroaching residential development. As indicated in the project description, this project is being proposed due to the housing boom of the last five years. Much of this development has occurred in the southwest portion of the City. Therefore, land in the southwest has been rapidly changing from agricultural production to residential development. Conflicts between residential development and industrial uses in the project vicinity have already been encountered and have been mitigated by the use of setbacks, enhanced project design measures and project screening. Currently the wastewater treatment plant provides some visual screening along the adjacent roadways. Further, the proposed project does not lie within any state scenic highway corridors nor does the project area meet any aesthetic resource requirements for protection. As indicated previously, the proposed project will occur on an already existing wastewater treatment plant site.

5.1.2 REGULATORY SETTING

The project area is governed by the City of Bakersfield Municipal code which through its various chapters and subsequent design manuals, specifications, and standards prescribes requirements for development which help minimize aesthetic impacts and/or enhance identified and un-identified aesthetic resources.

The project area is also governed by the goals and policies contained in the Metropolitan Bakersfield General Plan (City of Bakersfield, 2002). Such goals, policies and implementation measures include the coordination of land uses for maximization of visual resources, development which is compatible with existing environmental settings, location of development such that it does not interfere with visual resources, and the capitalization on existing visual resources for visual continuity and recreation.

5.1.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to aesthetic resources. The questions posed in the Checklist have been used as thresholds of significance for this section.

Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- The project has a substantial effect on a scenic vista.
- The project substantially damages scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway.
- The project substantially degrades the existing visual character or quality of the site and its surroundings.
- The project creates a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.1.4 PROJECT IMPACTS

Long-Term Operational Impacts

Impact 5.1a

The project may generate additional light and glare beyond existing conditions from existing treatment plant facilities, street lighting, and vehicular traffic.

Impact Discussion

The project site is currently surrounded by agricultural development which creates little to no light or glare. Other uses which create light or glare in the immediate project vicinity are two industrial users located to the west of the project. The project will create some additional lighting that does not already exist on site or in the immediate project vicinity. Although this will not substantially affect day or night-time views, the project will adhere to all development standards, as required by the City's zoning ordinance, which requires shielded lighting to avoid the direction of project light off of the project site onto adjacent areas. The proposed project will enhance existing screening to minimize any impacts on residential properties planned for development in the immediate vicinity. The proposed project will include perimeter berms and landscaping around the active facility area (See Figure 9). These project design features will be constructed as part of the construction activities for the new plant facilities in order to visually screen the plant from adjacent uses and traffic. Implementation of the above described design features will cause any light and glare impacts to be less than significant.

5.1.5 CUMULATIVE IMPACTS

Impact 5.1b

The proposed project in conjunction with rapidly urbanizing areas in southwest Bakersfield have the potential to create significant cumulative light and glare impacts

Impact Discussion

As indicated in Section 4.2, development in the proposed project area is rapidly turning from agricultural uses to residential uses. Such changes in land uses come with increased light and glare. These changes in uses in southwest Bakersfield combined with the proposed project have the potential to create cumulative light and glare impacts. The City of Bakersfield has created zoning ordinances which prescribe several requirements for shielding of light on project sites in order to combat light and glare impacts. Due to the proposed project's design features such as perimeter berms and landscaping as well as City required shielded and directed lighting, which will be located primarily within the interior of the plant, the ability for the proposed project to physically contribute to any cumulative light and glare impacts from surrounding development is

minimal. Moreover, it should be noted that all new development undergoes individual development review which requires integration of lighting requirements into the design process. Therefore, the project's contribution to any potential cumulative light and glare impacts in the project vicinity is less than significant.

Impact 5.1c

The proposed project has the potential to contribute to cumulatively considerable impacts to aesthetic resources derived from the change of aesthetic character of the surrounding area from rural to urban.

Impact Discussion

The proposed project will provide needed public services for a growing southwest Bakersfield, which could remove barriers to development of this area resulting in a change from a rural aesthetic character to an urban aesthetic character thereby having a cumulative impact on aesthetic resources. According to an evaluation completed by Quad Knopf, Inc. (2006) which reviewed eight of the largest proposed projects within the Wastewater Treatment Plant 3 Service Area, the total net demand in gallons per day of these eight large projects was approximately 16 MGD. Such a demand would consume all of the proposed increase in sewer treatment capacity. Consequently, the proposed project is not facilitating the growth in southwest Bakersfield but is rather responding to a public service need. Moreover, it should be noted that all new development undergoes individual environmental review which requires review of aesthetic resources. As the WWTP No.3 currently exists within the project area and is consistent with its CUP, its potential to contribute to the changing of the southwest from a rural landscape to an urban landscape is minimal and therefore, does not constitute a cumulatively considerable impact to aesthetic resources. Therefore, the project is considered to have a less than significant cumulative impact on aesthetic character in the project vicinity.

5.1.6 MITIGATION MEASURES

As indicated in the impact discussion, implementation of design features which reduce potential aesthetic impacts and compliance with existing regulatory requirements would prevent significant environmental impacts. Therefore, no mitigation measures are necessary, and impacts will remain less than significant.

5.1.7 SIGNIFICANCE AFTER MITIGATION

Long-Term Operational Impacts

As indicated in the impact section above, no impacts were identified to be above a level of less than significant. Therefore, no mitigation is required for Aesthetic Resources. As a result, impacts remain less than significant.

Cumulative Impacts

As indicated in the cumulative impacts section above, no cumulatively considerable impacts were identified. Therefore, any impacts from the proposed project in combination with past, present and potential future projects are not considered cumulatively significant.

5.2 AIR QUALITY

This section discusses the existing regional air quality conditions in the southern San Joaquin Valley, and evaluates the potential air quality impacts associated with the implementation of the proposed project. In addition, the air quality impacts associated with the proposed project are compared with significance criteria established by the San Joaquin Valley Air Pollution Control District (SJVAPCD). A discussion of applicable federal, state, and local agencies and regulations is also provided below. This report has been prepared in accordance with the California Environmental Quality Act (CEQA) Statutes and Guidelines, and the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). In addition, discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1.

5.2.1 AIR QUALITY SETTING

The proposed project is located in the City of Bakersfield, in Kern County, which is part of the San Joaquin Valley Air Basin (SJVAB). Air quality within the SJVAB is regulated by the SJVAPCD.

Regional Climate and Meteorology

The City of Bakersfield is located in the San Joaquin Valley. The area's climate is characterized as an "inland Mediterranean climate" with hot and dry summers and cool winters. The average maximum temperature is 99°F in July, and the average minimum temperature is 38°F in January. The climate around the City is prone to large diurnal fluxes due to its inland location. Bakersfield receives an average precipitation of 5.72 inches per year, most of which falls between November and April. The Valley is dominated by dry and hot weather throughout the summer months. Typical summer weather can augment the ozone problem within the Valley by providing ideal conditions for photochemical reactions that generate ozone.

The meteorology of the Valley is heavily influenced by the presence of the Pacific High Pressure Cell. In the spring, summer, and fall, when the Pacific High is dominant along the central California coast, winds are northwesterly and flow through the SJVAB and Tehachapi Pass into the Mojave Desert Air Basin (MDAB). During the winter, when the Pacific High Pressure Cell migrates south, winds originate from the south end of the San Joaquin Valley and flow toward the north-northwest. Wind speeds range from 5 miles per hour to 10 miles per hour throughout the year. The SJVAB has light, variable winds (less than 10 miles per hour) during the winter months. Inversion layers are more likely to occur during the winter months when air dispersion in the region is low. The southern San Joaquin Valley experiences more radiation inversions due to the lack of marine air intrusion. Radiation inversions occur when air closer to the ground is cooled faster than the air above. The result is an inversion layer where warmer air sits at the top of the air column, trapping the cooler and denser air below. Pollutants, especially particulate matter, can then accumulate in the inversion layer with little dispersion. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of pollutants.

Criteria Pollutants and Local Air Quality- Description of Pollutants

The federal and state governments have established ambient air quality standards for seven pollutants called "criteria" pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 microns in diameter (PM₁₀), particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead (see Table 5.2A). These standards were established to protect sensitive receptors from adverse health effects with an adequate margin of safety. California has also established ambient air quality standards (CAAQS) for lead, hydrogen

sulfide (H₂S), vinyl chloride, sulfates, and visibility reducing particles. Ozone and NO₂ are considered regional pollutants because they or their precursors affect air quality on a regional scale: NO₂ reacts photochemically with reactive organic gases (ROG) to form ozone, and this reaction occurs at some distance downwind of the source of pollutants. Pollutants such as CO, PM₁₀, and PM_{2.5} are considered local pollutants because they tend to disperse rapidly with distance from the source, although PM₁₀ and PM_{2.5} also are regional in nature due to chemical reactions in the atmosphere that contribute to their formation. The health effects of the pollutants of concern in the SJVAB are discussed below. The ambient air quality standards are summarized in Table 5.2A.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Ozone is a severe eye, nose, and throat irritant. Ozone also attacks synthetic rubber, textiles, plants, and other materials. Ozone causes extensive damage to plants by leaf discoloration and cell damage. Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include ROG and nitrogen oxides (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. The ozone precursors, ROG and NO_x, are emitted by mobile sources and by stationary equipment and processes. The state 1-hour ozone standard is 0.09 parts per million (ppm), not to be exceeded. On April 17, 2006, the Office of Administrative Law (OAL) approved a new state 8-hour ozone standard of 0.070 ppm, which became effective May 17, 2006. The federal 8-hour ozone standard is 0.08 ppm and is based on a three-year average of the annual fourth highest daily maximum value. The Environmental Protection Agency (EPA) revoked the 1-hour ozone standard of 0.12 ppm in place of the 8-hour standard on June 15, 2005.

Carbon Monoxide

CO is essentially inert to plants and materials but can have significant effects on human health. CO combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 ppm and the federal 1-hour standard is 35 ppm. The state standard is 9.0 ppm for the 8-hour averaging period, while the federal 8-hour standard is 9 ppm.

Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials. The federal and state ambient air quality standards for particulate matter apply to two classes of particulates: PM_{2.5} and PM₁₀. The state PM₁₀ standards are 50 micrograms per cubic meter (µg/m³) as a 24-hour average and 20 µg/m³ as an annual arithmetic mean. The federal PM₁₀ standards are 150 µg/m³ as a 24-hour average and 50 µg/m³ as an annual arithmetic mean. On September 21, 2006, the EPA announced that it would revoke the annual standard because health data do not indicate long-term effects due to PM₁₀ pollution. The federal PM_{2.5} standards are 15 µg/m³ for the annual average and 65 µg/m³ for the 24-hour average. On September 21, 2006, the EPA also announced its intent to revise the 24-hour PM_{2.5} standard from 65 to 35 µg/m³ and retain the annual standard. Both of the proposed revisions will be subject to public review over the coming months. On June 20, 2002, the CARB adopted a new annual average PM_{2.5} standard of 12 µg/m³.

Sulfur Dioxides

Sulfur oxide gases (SO_x) are a family of colorless, pungent gases, which include SO₂, and are formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), and during metal smelting and other industrial processes. Sulfur oxides can react to form sulfates, which significantly reduce visibility. The major health concerns associated with exposure to high concentrations of SO₂ include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Sulfur dioxide can also damage foliage of trees and agricultural crops. Together, SO_x and NO_x are the major precursors to acid rain, which is associated with the acidification of lakes, streams, and accelerated corrosion of buildings and monuments. The state standards are 0.04 ppm for a 24-hour average and 0.25 ppm for a 1-hour average. The federal standards are 0.14 ppm for a 24-hour average and 0.03 ppm for an annual average.

Vinyl Chloride

Vinyl chloride is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers. The state standard for vinyl chloride is 0.010 ppm for a 24-hour average. There is no federal standard for vinyl chloride.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used several decades ago to increase the octane rating in motor vehicle fuel. Since gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels, the use of leaded fuel has been mostly phased out, and the ambient concentrations of lead have dropped dramatically. Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of lead can be harmful, especially to infants, young children, and pregnant women. The state standard for lead is 1.5 µg/m³ for a 30-day average. The federal standard for lead is 1.5 µg/m³ on a quarterly average basis.

Hydrogen Sulfide

H₂S gas is colorless, with a characteristic odor of rotten eggs. Atmospheric H₂S is primarily oxidized to SO₂, which is eventually converted into sulfate, then sulfuric acid. H₂S is primarily associated with geothermal activity, confined animal facilities, and oil production activities. It is no longer monitored in the SJVAB because H₂S is no longer considered a problem in the SJVAB. H₂S can cause dizziness; irritation to eyes, mucous membranes, and the respiratory tract; nausea; and headaches at low concentrations. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. The state standard for H₂S is 0.03 ppm for a 1-hour average. There is no federal standard.

Toxic Air Contaminants

Toxic air contaminants (TACs) are pollutants that may result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's immune system, and diseases that lead to death. The Toxic Air Contaminant Identification and Control Act (AB 1807) and the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) provide the methodology by which the ARB assesses and controls air toxics. AB 1807 sets criteria the ARB must use to prioritize the identification and control of air toxics. AB 2588 supplements AB 1807 by requiring the ARB to conduct statewide air toxics inventories, notify people exposed to significant health risks, and develop plans to reduce risk from air toxics. AB 1807 requires the

ARB to use information gathered from the AB 2588 program to prioritize potential TAC. In 1993, AB 1807 was amended for the identification and control of TACs. As part of the amendments, the 189 federal hazardous air pollutants were designated as TACs, currently there are over 244 compounds designated by the ARB as a TAC. Air districts are required to compile an inventory of all point sources that emit any TACs. Current air toxic programs cover a variety of approaches such as a more complete air toxics inventory, expanding TAC monitoring programs, evaluating residual risk after emission limits, TAC deposition into biota and the environment, and reducing TAC exposure in urban areas.

**Table 5.2A
Ambient Air Quality Standards¹**

Air Pollutant	Concentration/Averaging Time	
	State Standard	Federal Primary Standard
Ozone	0.070 ppm, 8-hr. avg. 0.09 ppm, 1-hr. avg.	0.08 ppm, 8-hr avg. (3-year average of annual 4th-highest daily maximum)
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.
Nitrogen Dioxide	0.25 ppm, 1-hr avg.	0.053 ppm, annual arithmetic mean
Sulfur Dioxide	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	0.030 ppm, annual arithmetic mean 0.14 ppm, 24-hr avg.
Suspended Particulate Matter (PM ₁₀)	20 µg/m ³ , annual arithmetic mean 50 µg/m ³ , 24-hr avg.	50 µg/m ³ , annual arithmetic mean 150 µg/m ³ , 24-hr avg.
Suspended Particulate Matter (PM _{2.5})	12 µg/m ³ , annual arithmetic mean	15 µg/m ³ , annual arithmetic mean (3-year average) 65 µg/m ³ , 24-hr avg. (3-year average of 98th percentile)
Sulfates	25 µg/m ³ , 24-hr avg.	None
Lead*	1.5 µg/m ³ , 30-day avg.	1.5 µg/m ³ , calendar quarterly average
Visibility-Reducing Particles	In sufficient amount to produce extinction of 0.23 per kilometer due to particles when relative humidity is less than 70%, 8-hour average (10 AM – 6 PM)	None
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	None
Vinyl Chloride*	0.01 ppm, 24-hr avg.	None

Source:

¹ California Air Resources Board. "Air Quality Standards." [Online] [May 15, 2003]. <<http://www.arb.ca.gov/aqs/aqs.htm>>.

µg/m³ = microgram per cubic meter.

ppm = parts per million by volume.

* The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Existing Air Quality Conditions

Local air quality monitoring data are summarized in Table 5.2B. Air monitoring data is based on the closest air monitoring station to the proposed project site. The monitoring site is located at 5558 California Avenue in Bakersfield, approximately 5.3 miles northeast of the proposed project site (See Figure 12 for monitoring station location). These data are from the 2001–2005 monitoring period. The federal and state CO standards have not been exceeded for the past five

years (from 2001-2005). As shown in Table 5.2B, the state and federal 1-hour ozone standards were exceeded at least once throughout the five-year period. The federal 1-hour ozone standard was revoked for a new 8-hour standard as shown in Table 5.2B; however, the 8-hour standard was exceeded multiple times in each of the past five years (2001-2005). The state and federal 24 hour PM10 standards were exceeded within the five-year period; however, the federal 24-hour PM10 standard has not been exceeded for four years since 2001. The federal 24-hour standard for PM2.5 was also exceeded during the monitoring period (there is no state 24-hour PM2.5 standard). However, the number of exceedances of the federal 24-hour PM2.5 standard dropped from 2002 to 2004, and there were no recorded exceedances in 2003 or 2005 at the monitoring station. Both PM10 and PM2.5 show a declining trend in AAQS exceedances; however, recent exceedances indicate both pollutants still pose an air quality problem. Monitoring for sulfur dioxide, H₂S, lead, vinyl chloride, and sulfates is either limited or has been discontinued due to the very low ambient concentrations of these compounds.

If a pollutant concentration is lower than the state or federal standard, the area is classified as “attainment” for that pollutant. If a pollutant violates the standard, the area is considered a “nonattainment” area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as “unclassified.” The CARB has designated the SJVAB as being a severe nonattainment area for ozone and a nonattainment area for PM10. The EPA has designated the SJVAB as being a serious nonattainment area for ozone and a serious nonattainment area for PM10. The SJVAB is in attainment for the state and federal CO, NO₂, and SO₂ standards. Table 5.2B, Ambient Pollutant Concentrations Registered at 5558 California Avenue Monitoring Station in Bakersfield, summarizes the criteria pollutant air quality data monitored at the 5558 California Avenue station for the period 2001 through 2005.

Table 5.2B
Ambient Pollutant Concentrations Registered at 5558 California Avenue Monitoring Station in Bakersfield

Pollutant	Standards ¹	Year				
		2001	2002	2003	2004	2005
OZONE (O₃)						
Maximum 1-hr concentration (ppm)		0.129	0.119	0.120	0.110	0.117
Maximum 8-hr concentration (ppm)		0.115	0.105	0.106	0.100	0.103
Number of days exceeding state 1-hr standard	0.09 ppm	46	28	44	10	28
Number of days exceeding federal 8-hr standard	0.08 ppm	47	35	48	13	33
CARBON MONOXIDE (CO)						
Maximum 1-hr concentration (ppm)		5.8	4.4	3.3	3.1	3.1
Maximum 8-hr concentration (ppm)		3.41	2.51	2.29	1.83	2.20
Number of days exceeding federal 8-hr standard	9 ppm	0	0	0	0	0
Number of days exceeding state 8-hr standard	9.0 ppm	0	0	0	0	0
NITROGEN DIOXIDE (NO₂)						
Maximum 1-hr concentration (ppm)		0.115	0.107	0.085	0.083	0.074
Annual arithmetic mean concentration (ppm)		0.022	0.021	0.020	0.019	0.018
Number of days exceeding state 1-hr standard	0.25 ppm	0	0	0	0	0
SULFUR DIOXIDE (SO₂)³						
Maximum 1-hr concentration (ppm)		0.030	na	na	na	na
Maximum 24-hr concentration (ppm)		0.005	na	na	na	na
Annual arithmetic mean concentration (ppm)		0.002	na	na	na	na
Number of days exceeding state 1-hr standard	0.25 ppm	0	na	na	na	na
Number of days exceeding state 24-hr standard	0.04 ppm	0	na	na	na	na
Number of days exceeding federal 24-hr standard	0.14 ppm	0	na	na	na	na
PARTICULATE MATTER (PM₁₀)						
Maximum 24-hr concentration (µg/m ³) (using state methods for sampling)		204.0	134.0	116.0	93.0	108.0
Maximum 24-hr concentration (µg/m ³) (using federal methods for sampling)		190.0	100.0	110.0	83.0	102.0
Annual arithmetic mean concentration (µg/m ³) (using federal methods for sampling)		47.7	49.0	47.7	na	39.6

Table 5.2B

Ambient Pollutant Concentrations Registered at 5558 California Avenue Monitoring Station in Bakersfield

Pollutant	Standards ¹	Year				
		2001	2002	2003	2004	2005
Number of samples exceeding federal 24-hr std.	150 µg/m ³	3	0	0	0	0
Number of samples exceeding state 24-hr std.	50 µg/m ³	26	33	30	22	14
PARTICULATE MATTER (PM_{2.5})						
Maximum 24-hr concentration (µg/m ³)		154.7	89.6	59.3	70.0	54.7
Annual arithmetic mean concentration (µg/m ³)		21.2	22.8	17.2	18.9	Na
Number of samples exceeding federal 24-hr std.	65 µg/m ³	19	14	0	3	0

na = not available

Sources:

- (i) California Air Resources Board Air Quality Database <http://www.arb.ca.gov/adam/welcome.html>.
- (ii) U.S Environmental Protection Agency Air Quality Database <http://www.epa.gov/air/data/>.

¹ Parts per million of air by volume (ppm), micrograms per cubic meter of air (µg/m³), or annual arithmetic mean (aam).

Existing Wastewater Treatment Plant No. 3 Emissions

The existing Wastewater Treatment Plant (WWTP) No. 3, which operates at nearly 16 MGD, generates emissions associated with the wastewater treatment processes, combustion devices and engines, and motor vehicle use. The existing emissions were estimated using the methodologies and sources described below.

Existing Wastewater Treatment Plant No. 3 Mobile Source Emissions

Current operation of the WWTP No.3 generates mobile source emissions as a result of its daily operational activities (i.e., material import and export). Emission factors for operational wastewater trucks and employee vehicles were generated using the CARB motor vehicle emissions inventory program, EMFAC2002. EMFAC2002 can generate an inventory of pollutants for a specific vehicle class in a given air basin for a specific year. EMFAC2002 can also generate total vehicle miles traveled for a specific vehicle class in a given air basin. Emission factors were calculated by dividing the total daily emissions by the total daily vehicle mile traveled (VMT) to generate an emission factor expressed in grams per mile. Sludge trucks were represented with the heavy-heavy-duty truck vehicle class in EMFAC2002. The remaining trucks (grit and screening) were represented using the medium heavy duty truck vehicle class. Employee vehicles were represented using a mix of light-duty automobiles and light-heavy-duty trucks.

As provided by the WWTP No.3 staff, current mobile operations include the export of screenings, grit material, and sludge. Screenings and grit material are hauled away every other day with the exception of weekends. A refuse truck (medium-heavy-duty truck) would pick up either screenings or grit material on a given day. Solids collected from bar screens are hauled to the Bena Landfill, a distance of 25.2 miles. Grit materials from grit chambers are hauled to Mount Vernon Recycling Facility for composting, a distance of 12.2 miles. The average of the distances traveled for screening and grit material exportation was used to represent a typical daily trip. Annual grit and screening truck emissions were calculated assuming 156 days of operation (52 weeks 3 days per week). Dewatered sludge, which is reused for fertilizing non-food crops, is hauled to Wastewater Treatment Plant No. 2, a distance of 13.6 miles. Sludge hauling operations occur for one week per year. During this week, the WWTP No.3 generates 21 haul truck trips per day. Annual sludge truck emissions were calculated assuming seven days of operation. Under current operations, the WWTP No.3 has 15 employees. Employees were assumed to travel 24.7 miles one way to the WWTP No.3, a weighted average of employee home origin distribution. A detailed summary of the mobile source emissions generated under the current activity level is presented in Table 5.2C, Existing WWTP No.3 Mobile Source Emissions.

Table 5.2C
Existing WWTP No. 3 Mobile Source Emissions

Mobile Source (# of trips/day)	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Sludge Trucks (21)	0.01	0.07	0.03	0.00	0.00
Screening/Grit Trucks (1)	0.01	0.06	0.09	0.00	0.00
Employee Vehicles (15)	0.04	0.08	0.83	0.00	0.00
Total Mobile Source Emissions	0.06	0.21	0.95	0.00	0.01

Source: Impact Sciences, Inc. Calculations can be found in **Appendix 15.3b**.

Note: Emissions may differ slightly from those in **Appendix 15.3** due to rounding values.

Existing Wastewater Treatment Plant No. 3 Operational Emissions

Table 5.2D, Existing Wastewater Treatment Emissions, summarizes the current annual emissions generated by the WWTP No.3. The most current emissions inventory reported by the CARB for WWTP No.3 is from 2004 and only includes combustion sources. In 2004, the WWTP No.3 was only processing 15 MGD out of its full 16 MGD capacity. The WWTP No.3 currently operates at full capacity; therefore, combustion emissions were multiplied by 16/15 to represent the existing emission levels. Currently, the wastewater treatment process sources are not permitted and are reported by the CARB. Emission factors used to calculate wastewater treatment processes emissions were obtained from the Joint Emissions Inventory Report (JEIP) submitted to the South Coast Air Quality Management District (SCAQMD) per Rule 1179 (CH2M Hill, 1993). The wastewater process emission calculations are found in Appendix 15.3c.

Table 5.2D
Existing Wastewater Treatment Emissions

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Preliminary/Primary Treatment	1.69	—	—	—	—
Biological Treatment	0.89	—	—	—	—
Post-Biological Treatment	0.62	—	—	—	—
Solids Handling	0.12	—	—	—	—
Combustion Sources	10.51	5.38	48.53	10.92	0.04
Mobile Sources	0.06	0.21	0.95	0.00	0.01
Existing Wastewater Treatment Plant Emissions	13.89	5.59	49.48	10.92	0.05

Source: Impact Sciences, Inc. Calculations can be found in **Appendix 15.3c**.

Source: http://www.arb.ca.gov/app/emsinv/facinfo/facdet.php?co=15&ab_=SJV&facid_=3103&dis_=SJU&dbyr=2004&dd=

Existing Odor Setting at Wastewater Treatment Plant No. 3

As described in Section 3.0, Project Description, the existing facilities at the WWTP No. 3 provide primary and secondary treatment of incoming wastewater. The wastewater treatment plant is generally comprised of plant components such as clarifiers, solids processing, trickling filters, digesters, digester gas recovery, a cogeneration facility, four secondary treated effluent storage ponds, and sludge drying beds. The current odor control systems utilized at the wastewater treatment plant consist of removing foul air above some of the plant components through air ducts and forcing the air through a chemical odor scrubber. The trickling filters and solar sludge drying beds have no odor controls in place.

The City of Bakersfield has established a one-quarter-mile odor buffer zone around the existing wastewater treatment plant. Current City Policy does not allow residential development within this one-quarter-mile odor buffer zone due to potential odor concerns (City of Bakersfield, Public Works Memorandum, 2004). Figure 4 delineates the one-quarter-mile buffer zone around the northeast portion of the WWTP No. 3. All nearby landowners within the odor buffer zone have

been previously notified by the City. Recently approved development projects in the vicinity of the odor buffer zone have been designed to accommodate the one quarter mile odor buffer zone.

An odor analysis of the potential impacts of the existing wastewater treatment plant was completed for one of the previously approved development projects adjacent to the western boundary of the WWTP No. 3 (City of Bakersfield 2005). In the Final Environmental Impact Report for the Gosford-Panama Annexation (GPA/ZC No. 04-0057), it was concluded that odor concentrations from the wastewater treatment plant would not exceed the odor thresholds established by the San Joaquin Valley Air Pollution Control District (SJVAPCD) in their Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) [FEIR, pp 5.7-25, 26].

The GAMAQI suggests an odor complaint threshold as being more than one confirmed odor complaint per year, averaged over a three-year period. According to the SJVAPCD's records, until just recently, the last confirmed odor complaint of odiferous compounds originating at the WWTP No. 3 occurred on October 19, 2001. Just recently, another complaint regarding odor from the WWTP No. 3 occurred on September 5, 2006. The cause of the odor was a mechanical problem with the chemical odor scrubber. The scrubber was shut off as a result, and the odor complaint ensued later that day. The wastewater treatment plant has since implemented a corrective action plan in the event of future malfunctions in the chemical odor scrubber in order to prevent odor impacts from scrubber shutdown. This plan would use additional ferric chloride, utilized in the existing treatment processes, would be injected into the wastewater being treated to reduce hydrogen sulfide concentrations until the problem can be repaired or corrected. The cause of and subsequent corrective action for the odor complaint was coordinated with the staff at the SJVAPCD.

5.2.2 REGULATORY SETTING

The proposed project is located in southwest Bakersfield, Kern County, California which is located in the San Joaquin Valley Air Basin, and therefore, is overseen by the San Joaquin Valley Air Pollution Control District (SJVAPCD). This air district administers air quality regulations developed at the federal, state, and local levels. Such regulations are discussed in detail below.

Federal Regulations

The federal Clean Air Act (CAA) and its 1990 amendments establish the framework for modern air pollution control. The CAA requires the EPA to oversee state air quality programs, provide research and guidance for air pollution control programs, and set standards for vehicle and stationary source emissions. The EPA established national ambient air quality standards (NAAQS) for criteria pollutants (Table 5.2A). Criteria pollutants, discussed previously, include CO, NO₂, SO₂, O₃, PM₁₀, PM_{2.5}, and lead. Each pollutant has a primary standard set to protect public health. For some pollutants, secondary standards have been set based on other criterion such as protection of crops, protection of materials, or avoidance of nuisance conditions.

The EPA designates air basins as being in "attainment" or "nonattainment" of NAAQS for each of the seven "criteria" pollutants. The state, with input from the air district, is then required to submit a State Implementation Plan (SIP) that describes how federal standards will be achieved by specified dates. The extent of a given SIP depends on the severity of air quality in the air basin. The SJVAB is currently classified as "serious" nonattainment with respect to the 8-hour ozone standard. With respect to the PM standards; the SJVAB is "serious" nonattainment for PM₁₀ and nonattainment with the PM_{2.5} standard. While the EPA proposed to determine that the SJVAB had attained the federal PM₁₀ standards on July 19, 2006, the PM₁₀ designation will remain "serious" until EPA approves a PM₁₀ maintenance plan. The respective plan for each of the nonattainment pollutants is discussed below. Table 5.2E, National Ambient Air Quality Standards and Status San Joaquin Valley Air Basin, shows the attainment status of the SJVAB with respect to the NAAQS.

**Table 5.2E
National Ambient Air Quality Standards and Status
San Joaquin Valley Air Basin**

Pollutant	Averaging Time	Designation/Classification
Ozone (O ₃)	8 Hour	Nonattainment/Serious
Carbon Monoxide (CO)	8 Hour	Attainment/Unclassifiable
	1 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	Attainment/Unclassifiable
	24 Hour	Attainment
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Nonattainment/Serious
	24 Hour	Nonattainment/Serious
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	Nonattainment
	24 Hour	Nonattainment
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [March 17, 2006]. <http://www.epa.gov/region9/air/maps/maps_top.html>.

State Regulations

The CARB is primarily responsible for ensuring the implementation of the California Clean Air Act (CCAA), responding to federal CAA requirements, and regulating motor vehicle emissions and consumer products within the state. In addition, the CARB is responsible for setting health-based California ambient air quality standards (CAAQS), which are more stringent than federal standards. State standards are to be achieved through district-level air quality management plans, called clean air plans (CAP). These CAPs are to be updated triennially, and outline the state's strategy for attaining the CAAQS. The CCAA requires local and regional air pollution control districts (APCD) and air quality management districts (AQMD) that are nonattainment for one or more of the CAAQS for ozone, CO, SO₂, or NO₂ to adopt plans specifically designed to attain these standards. Each plan must be designed to achieve an annual five percent reduction in district-wide emissions of each nonattainment pollutant or its precursors. Although there are state ambient standards for lead, sulfates, vinyl chloride, and H₂S, the CCAA does not require that a plan be developed for them because these pollutants have not been a problem in the state. Table 5.2F, California Ambient Air Quality Standards and Status San Joaquin Valley Air Basin, shows the attainment status of the SJVAB with respect to the CAAQS.

**Table 5.2F
California Ambient Air Quality Standards and Status
San Joaquin Valley Air Basin**

Pollutant	Averaging Time	Designation/Classification
Ozone (O ₃)	1 Hour	Nonattainment/Severe
Carbon Monoxide (CO)	8 Hour	Attainment
	1 Hour	Attainment
Nitrogen Dioxide (NO ₂)	1 Hour	Attainment
Sulfur Dioxide (SO ₂)	24 Hour	Attainment
	1 Hour	Attainment
Suspended Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Nonattainment
	24 Hour	Nonattainment
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	Nonattainment
Lead (Pb) ¹	30 Day Average	Attainment
Sulfates (SO ₄)	24 Hour	Attainment
Hydrogen Sulfide (H ₂ S)	1 Hour	Unclassified
Vinyl Chloride ¹	24 Hour	Unclassified
Visibility Reducing Particles	8 Hour	Unclassified

Source: California Air Resources Board. "Area Designations (Activities and Maps)." [Online] [(August 18, 2006)]. <<http://www.arb.ca.gov/deg/deg.htm>>.

¹ The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.

The CARB oversees the activities of the local air districts, but does not issue permits for stationary sources of air pollutants, which is the responsibility of the districts. The CARB has the authority to set vehicle emissions standards for on-road vehicles and for some off-road vehicles. In addition, the CARB identifies and sets control measures for toxic air contaminants (TAC).

Local and Regional Implementation of Federal Requirements

The SJVAPCD is responsible for maintaining air quality in San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the Valley portion of Kern county. At the local level, responsibilities of the SJVAPCD include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

Air quality is also managed through land use and development planning practices. These practices are implemented in Kern County through the general planning process primarily by the municipalities and Kern County. The SJVAPCD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws, but does not have any land use or development planning authority. As well, the SJVAPCD is responsible for developing plans and implementing control measures that will help the region achieve attainment with state and federal air quality standards.

Air Quality Planning

Due to ongoing violations of the NAAQS and CAAQS for ozone and PM10, these pollutants are the most relevant to air quality planning and regulation in the SJVAB. The SJVAPCD manages these pollutants through a long-term attainment planning process that forecasts future emissions depending on changes in source activity, regulatory programs, and meteorological conditions. The air quality plans for demonstrating attainment (one each for ozone and PM10) are evolving documents that are updated triennially to reflect the changing population, economic, land use, and transportation conditions in the SJVAB. The local transportation planning agencies (in this

area, Kern Council of Governments) and CARB provide the information needed to predict future on-road mobile source emissions that are used in the air quality planning process. These forecasts are based on population and employment projections, as well as City and Kern County general plans.

Ozone Planning

The most recent SJVAPCD ozone plan is the 2004 Extreme Ozone Attainment Demonstration Plan (OADP), adopted October 2004, which was developed for attainment of the previous federal 1-hour ozone standard. Through 2002 and 2003, the SJVAPCD Governing Board had been considering voluntarily downgrading the district from its "severe" federal nonattainment status for ozone to "extreme." The EPA issued a final rule classifying the SJVAB as extreme nonattainment, effective May 17, 2004 (SJVAPCD, 2004). Downgrading the nonattainment status allowed the SJVAPCD more time to attain the ozone standard before incurring federal penalties. An OADP is required to contain emission inventories for baseline, present, and future years, control measures to reduce emissions, and photochemical modeling that demonstrates attainment by the deadline date. The SJVAPCD revised the plan to address the "extreme" designation during 2004, and the plan recommends more stringent stationary source controls. Control measures in the OADP to reduce emissions will be implemented by the SJVAPCD and the CARB. As specified in the Plan, the SJVAPCD is set to achieve the 1 hour federal ozone standard by November 15, 2010.

On April 15, 2004, the EPA promulgated the revocation of the 1-hour ozone standard for a newer and more stringent 8-hour standard. The 1 hour standard was subsequently revoked as of June 15, 2005. The SJVAB was designated as nonattainment for this new 8-hour standard on April 15, 2004. As is the case with all air basins in nonattainment with the new standard, the SJVAPCD has three years (June 15, 2007) to submit an 8-hour OADP to the EPA. In addition, the CARB must adopt a State Implementation Plan (SIP) by that same time for submittal to the EPA. The SJVAB must achieve attainment with the new 8-hour ozone standard by June 15, 2013.

Particulate Matter Planning

The 2006 PM10 Attainment Demonstration Plan was adopted February 2006. The new plan is a SIP revision required as part of the 2003 PM10 Plan approval. As required by the EPA, the 5 percent annual reduction and milestones for reasonable further progress (RFP) were evaluated for completion. As well, the 2006 Plan evaluates modeling from California Regional Particulate Air Quality Study (CRPAQS), new emissions inventories, and modeling data results associated with the updated inventories. Updated inventories used for the 2006 Plan were completed by the CARB and SJVAPCD, and reflect controls implemented up to April 2005. In the previous 2003 Plan, aggressive steps were identified that the SJVAPCD must implement in order to achieve attainment with the federal standards. Some of the control strategies evaluated include more stringent control measures for agricultural dust, road dust, and dust from construction activities. The 2006 Plan includes all controls necessary to achieve NAAQS by the earliest possible date. The Plan also evaluates measures to be implemented to meet the Best Available Control Measures/Best Available Control Technology (BACM/BACT) requirements; however, most of the District's regulations were found to have already met the BACM/BACT requirements. The CRPAQS further indicates that the 2006 Plan will meet RFP milestones and will achieve attainment with NAAQS through control strategies implemented in the previous 2003 PM10 Plan.

The SJVAB is also designated as nonattainment for the state and federal PM2.5 standard. Currently, the SJVAPCD is developing a PM2.5 Plan, which is due to the EPA by April 2008.

Guide for Assessing and Mitigating Air Quality Impacts

In August of 1998, the SJVAPCD prepared its Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). The GAMAQI is an advisory document that provides lead agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality in environmental documents. Local jurisdictions are not required to utilize the

methodology outlined therein. This document describes the criteria the SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on January 10, 2002. The methodology and analysis contained in this section is largely based on the guidance offered by the GAMAQI.

Applicable SJVAPCD Rules

The proposed project would be subject to the SJVAPCD rules discussed below. These rules have been adopted by the SJVAPCD to reduce emissions throughout the San Joaquin Valley, and the proposed project is required to comply with them.

Rule 2010 (Permits Required): This rule requires that any project constructing, altering, replacing, or operating any source operation, the use of which emits, may emit, or may reduce emissions to obtain an Authority to Construct (ATC) and a Permit to Operate (PTO). This rule applies to the construction of the proposed renovations and operation of the new processes and equipment to be installed.

Rule 2201 (New and Modified Stationary Source Review): This rule applies to all new and modified stationary sources that would emit, after construction, a criteria pollutant for which there is an established national or California Ambient Air Quality Standard (AAQS). The rule provides mechanisms by which an Authority to Construct (ATC) can be granted without interfering with the Basin's attainment with ambient air quality standards. These mechanisms offer methods to generate no net increases in emissions of nonattainment pollutants over specific thresholds as detailed in the rule.

Rule 3135 (Dust Control Plan Fee): This fee applies to any owner or operator that is subject to the Dust Control Plan requirements of District Rule 8021. A fee is applied for the filing of a Dust Control Plan, any requested modifications to an existing Dust Control Plan, and to any owner or operator that does not pay the fees within 60 days of submitting their Dust Control Plan.

Rule 4002 (National Emission Standards for Hazardous Air Pollutants): This rule requires sources that may emit hazardous air pollutants (HAP) above specified levels to comply with the National Emission Standards for Hazardous Air Pollutants (NESHAP) and National Emission Standards for Hazardous Air Pollutants for Source Categories. Two NESHAPs may apply to Wastewater Treatment Plant No. 3 after it is expanded:

- 40 CFR 63, Subpart VVV – National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works
- 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines

The applicability of these regulations would be evaluated during the permitting of the expanded WWTP No.3 by the SJVAPCD.

Rule 4102 (Nuisance): This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the proposed project or construction of the proposed project creates a public nuisance such that the SJVAPCD receives complaints, it could be in violation and be subject to SJVAPCD enforcement action.

Rule 4308 (Boilers, Steam Generators, and Process Heater): This rule limits the NO_x and CO emissions from boilers, steam generators, and process heaters with heat input ratings between

0.075 million Btu per hour (MMBtu/hr) and 2.0 MMBtu/hr. The source must also comply with the reporting requirements specified in the rule.

Rule 4601 (Architectural Coatings): This rule limits the amount of volatile organic compounds from architectural coatings. This rule specifies architectural coatings storage, clean up, and labeling requirements.

Rule 4702 (Internal Combustion Engines – Phase 2): This rule limits the emissions of oxides of nitrogen, carbon monoxide, and volatile organic compounds emitted from internal combustion engines. The rule is applicable to any internal combustion engine with a rated brake horsepower greater than 50 horsepower. Emission standards for the three pollutants are specified for each category of engine along with compliance dates for each standard. The source must also comply with the monitoring methods and other requirements specified in the rule.

Regulation VIII (Fugitive PM10 Prohibitions): The purpose of Regulation VIII is to reduce ambient concentrations of fine particulate matter (PM10) by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions. Regulation VIII contains the following rules that would be applicable to the proposed project:

- Rule 8021: Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.
- Rule 8031: Bulk Materials
- Rule 8041: Carryout and Trackout
- Rule 8051: Open Areas
- Rule 8061: Paved and Unpaved Roads
- Rule 8071: Unpaved Vehicle/Equipment Traffic Areas

5.2.3 STANDARDS OF SIGNIFICANCE

For this analysis, air quality impacts were considered significant if the project would result in any of the following, which are based on State CEQA Guidelines Appendix G (14 CCR 15000 et seq.):

- Conflict with or obstruct implementation of the applicable air quality management plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

In addition to the above significance criteria, emission thresholds are contained in the GAMAQI published by the SJVAPCD (SJVAPCD, 2002). The SJVAPCD's thresholds of significance are summarized below.

- Produce greater than 10 tons/year of ROG.
- Produce greater than 10 tons/year of NOx.
- Exposing sensitive receptors to offensive odors within the distance limits as proposed by Table 4-2 in the GAMAQI.
- More than one confirmed odor complaint per year averaged over a three year period or three unconfirmed complaints per year averaged over a three-year period.

- Exceed National or California Ambient Air Quality Standards for CO (9 ppm 8-hr average; 20 ppm 1-hr average).
- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million.
- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.

5.2.4 PROJECT IMPACTS

This section describes the proposed project's impacts to regional air quality. First, the section presents the methodology used to estimate the emissions (e.g., construction or operation). Second, the thresholds used to evaluate whether an impact is significant are stated. Third, the impacts from the proposed project are presented, followed by a discussion of the feasible mitigation measures. Mitigation measures are required only if the impact is determined to be significant.

Methodology

Construction-Related Emissions

Construction-related emissions would be generated as a result of the expansion of WWTP No. 3 facilities, roadway improvements adjacent to the WWTP, paving interior roadways, and renovation of existing WWTP No.3 structures. During construction of the proposed project, construction-related emissions would occur from heavy-duty construction equipment, construction worker vehicles, grading operations, architectural coatings, and asphalt paving. Construction emissions were estimated using the CARB approved land-use and construction model, URBEMIS 2002 version 8.7.0. Emissions associated with construction activities were compared to the SJVAPCD's thresholds of significance for construction.

The PM10 emissions associated with construction can vary greatly depending on the level of activity, specific operations taking place, equipment being operated, local soils, weather conditions, and other factors making quantification difficult. The SJVAPCD has determined that compliance with its Regulation VIII Fugitive PM10 Prohibitions, including implementation of all feasible control measures specified in its GAMAQI, would constitute sufficient mitigation to reduce impacts of fugitive dust to a less than significant level .

Stationary Source and Vehicular Emissions from Project Operation

The WWTP No.3 would generate air emissions as a result of its operational activities (e.g., material import and export, digester gas engines, dual fuel heaters, and wastewater treatment). Emission factors for wastewater operational trucks (sludge, grit, and screenings) and employee vehicles were generated using the same methods described above for existing operations. The upgraded WWTP No.3 would also include septage and grease trucks, which were represented as medium-heavy-duty trucks. Activity levels for sludge, grit, and screening trucks would increase following completion of improvements and upgrades. Wastewater treatment processes and their emission estimate methodology are described below. A detailed summary of wastewater treatment emissions estimates is provided in Appendix 15.3.

Impact Analysis

Development of the proposed project would generate air emissions from stationary, area, and mobile sources. Construction activities associated with grading and construction of new facilities would generate PM10 emissions. Mobile source emissions, such as NOx and ROG, would be generated by heavy-duty construction equipment during construction of the proposed project as well as incoming and outgoing haul trucks associated with the operation of the proposed project. The proposed project would also generate stationary and area source emissions once

renovations have been completed due to wastewater treatment processes and combustion equipment. The wastewater treatment processes would generate ROG emissions, while combustion sources would generate NO_x, ROG, and to a lesser extent, PM₁₀. An assessment of construction and operational emissions are presented below based on the methodologies recommended in the SJVAPCD's GAMAQI and methodologies developed by the EPA, the CARB, and others.

Short-Term Construction Impacts

Impact 5.2a

The proposed project has the potential to significantly impact air quality due to emissions from construction of the proposed project

Impact Discussion

Construction of the proposed project would occur in multiple phases and areas depending on the day of construction. Currently, the construction schedule is tentative with possible changes to occur. For purposes of this analysis, six representative scenarios were evaluated using the land use and construction model URBEMIS2002, Version 8.7.0. The SJVAPCD indicates heavy-duty equipment as being the primary concern regarding construction emissions. The impact from fugitive dust (i.e., PM₁₀) is considered mitigated to a less-than-significant level, if all feasible mitigation measures in Regulation VIII are applied. Emissions were estimated for the following construction scenarios:

- Site Grading;
- Construction of the percolation ponds;
- Demolition of asphalt concrete on the existing WWTP No.3;
- Installation of new asphalt concrete paving on site at the WWTP No.3;
- Installation of asphalt concrete paving associated with roadway improvements on Ashe, McCutchen, and Gosford Roads; and
- Construction of new wastewater process equipment.

The estimated construction equipment was determined using *Means Heavy Duty Construction Cost Data* (20th Edition). The results of these emission calculations are shown in Table 8, Estimated Unmitigated Construction Emissions.

While the significance thresholds for ROG and NO_x are annual emission rates, the construction schedule is not known at this time in order to estimate the annual emissions. Thus, the annual emission rates of 10 tons/year were converted to daily emission rates of 55 lb/day, and the estimated construction emissions were compared with the daily threshold. Additional details of the construction emission calculations are found in Appendix 15.3a. Please note that the table below does not contain a total line because the calculated construction emissions assume that the construction activities would occur on different days. Thus, the daily emissions for each of the six construction scenarios are shown and compared to the SJVAPCD significance thresholds.

**Table 5.2G
Estimated Unmitigated Construction Emissions**

Construction Scenario	Maximum Daily Emissions (lb/day)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Site Grading	7.65	46.78	65.92	0.00	6.80
Construction of Percolation Ponds	27.18	170.65	230.87	0.00	266.51
Demolition	5.56	34.98	47.18	0.00	3.87
On-site Paving	7.26	42.22	59.31	0.00	1.34
Off-Site Paving	13.68	69.82	91.63	0.02	2.16
Construction of Wastewater Processes	10.56	69.52	85.51	0.00	2.69
SJVAPCD Thresholds	55	55	—	—	—
Exceeds Thresholds?	NO	YES	—	—	—

Source: Impact Sciences, Inc. Calculations can be found in **Appendix 15.3a**.

Note: Assumes compliance with Regulation VIII for site grading and construction of the percolation ponds.

The annual significance thresholds of 10 tons/yr for ROG and NO_x have been converted to 55 lbs/day because insufficient detail regarding the construction schedule is known to estimate the annual emissions.

As shown in Table 5.2G, the NO_x emissions would exceed the significance threshold of 55 lb/day during most construction periods. The ROG emissions would likely be less than the significance threshold. Accordingly, air quality impacts during construction would be significant.

Long-Term Operational Impacts

Impact 5.2b

The proposed project has the potential to significantly impact air quality due emissions from the operation of the proposed project

Impact Discussion

The WWTP No.3 would generate air emissions as a result of its daily operations. Complete details of operation and specific equipment have not been finalized at this moment. However, the WWTP No.3 would comply with certain Best Available Control Technology (BACT) requirements for combustion equipment. Operational emission estimates for the WWTP No.3 were performed using BACT guidelines and information provided by the Parsons Corporation, who is preparing the air permit application for the expansion of the WWTP No.3. A description of each of the WWTP No.3 emission sources and potential emissions is presented below.

Wastewater Treatment Emissions

Wastewater treatment processes would generate ROG emissions as a result of preliminary/primary treatment, biological treatment, and post biological treatment and disposal. Emission estimates for preliminary/primary treatment were calculated assuming 90% control efficiency due to the addition of two biofilters to control odors. The biofilters will also control ROG emissions. Emission factors for wastewater treatment processes were obtained from a Joint Emissions Inventory Report (JEIP) submitted to the SCAQMD per Rule 1179. Emission factors, expressed in pounds per year per mgd (lb/yr/mgd), for each preliminary/primary treatment process were multiplied by the proposed WWTP No.3 capacity (32 MGD) to calculate uncontrolled emissions. A control efficiency of 90% was then applied to all preliminary/primary treatment processes. Biological and post biological processes would not include any control devices; therefore, emissions for biological and post-biological processes were calculated by multiplying the emission factor, also expressed in lb/yr/mgd, by the proposed WWTP No.3 capacity. The annual emissions generated from the proposed wastewater treatment processes are presented below in Table 5.2H, Proposed Wastewater Treatment Emissions.

**Table 5.2H
Proposed Wastewater Treatment Emissions**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Preliminary/Primary Treatment	0.37	—	—	—	—
Biological Treatment	4.76	—	—	—	—
Post-Biological Treatment	4.39	—	—	—	—
Proposed Total	9.52	—	—	—	—

Source: Parsons Corporation. Calculations can be found in *Appendix 15.3c*.

Solids Handling Emissions

Treatment, dewatering, and handling of solids generated from wastewater treatment processes would generate ROG emissions. A majority of the solids handling processes would be controlled using biofilters. Emissions presented below represent ROG emissions from solids handling processes within the WWTP No.3. Haul trucks would be equipped with sealed compartments to prevent further ROG emissions once solids have been loaded for transport to Wastewater Treatment Plant No. 2. The vehicular source emissions from solids hauling are presented in the Operational Mobile Source section. Emissions from solids handling processes within WWTP No.3 were calculated by multiplying emission factors, expressed in lb/yr/mgd, by the proposed WWTP No.3 capacity (32 MGD). Biofilters would achieve 90% ROG control efficiency in the dissolved air flotation units, sludge cake handling (conveyor belts), and sludge cake truck loading operations. Table 5.2I, Proposed Solids Handling Emissions, presents the annual emissions generated from solids handling processes within the WWTP No.3.

**Table 5.2I
Proposed Solids Handling Emissions**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Solids Handling	0.13	—	—	—	—

Source: Parsons Corporation. Calculations can be found in *Appendix 15.3c*.

Internal Combustion Engines

The proposed WWTP No.3 upgrades would include the removal of the existing cogeneration engine and installation of two new cogeneration (internal combustion) engines. The two new cogeneration engines would be digester gas-fired; however, the exact engine specifications or model are not yet known. Therefore, emission estimates for NO_x, CO, and ROG are based on SJVAPCD's BACT Guideline 3.3.13 (in g/bhp-hr) for digester gas engines. Engines are assumed to be 1607 horsepower engines and operate 8760 hours per year. The PM10 emission estimate is based on a source test of the digester gas-fired engine performed at the Inland Empire Utility Agency. Finally, the SO_x emissions estimate is based on a fuel sulfur limit of 20 ppmv, which would result in emissions per unit of less than 2 lb/day. Under SJVAPCD Rule 2201, the SO_x BACT sulfur requirement of 99% control (for dry absorption of H₂S from fuel gas) from BACT Guideline 3.3.13 would not apply. Based on operational experience with the Sulfatreat system at WWTP No. 2, which controls the sulfur content of the digester gas, the 20 ppmv limit is expected to be met easily. Table 5.2J, Proposed Internal Combustion Engines Emissions, presents the annual emissions generated from the proposed cogeneration digester gas engines.

**Table 5.2J
Proposed Internal Combustion Engines Emissions**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Internal Combustion Engine	7.80	18.66	77.61	1.05	1.40

Source: Parson Corporation. Calculations can be found in *Appendix 15.3c*.

Dual Fuel Heater Emissions

Dual fuel heaters would generate air emissions as a result of natural gas and digester gas combustion. Digester gas would only be used for the dual fuel heaters during the downtime of digester gas engines, when digester gas would be routed to the heaters. Emission estimates for dual fuel heaters were therefore developed using natural gas emission factors. The proposed WWTP No.3 improvements would include the addition of six new heaters and the replacement of heaters at Digesters 1 and 2 with heaters from Digesters 5 and 6. Heaters would operate continuously throughout the year. All process heaters would be in the range of 0.075 million Btu per hour (MMBtu/hr) to 2.0 MMBtu/hr, which are subject to the requirements of Rule 4308. Rule 4308 specifies a NO_x limit of 30 ppm, corrected to 3% oxygen (O₂) for boilers in this size range. NO_x BACT limits from Guideline 1.1.1 will not apply because emissions from each heater will not exceed 2 lbs/day. Because the emissions from the largest heater (1.53 MMBtu/hr x 0.036 lb/MMBtu x 24 hr/day = 1.3 lbs/day) will be less than 2 lbs/day, the emissions from all other heaters individually would not exceed 2 lbs/day. Therefore, low-NO_x burners will not be required for any of the eight heaters designed for the plant. Rule 4308 also specifies a CO limit of 400 ppm at 3% O₂, which is equivalent to 0.296 lb/MMBtu. The emission estimates for ROG, PM₁₀, and SO_x are based on pounds per million standard cubic feet (lb/MMscf) emission factors from Table 1.4-1 of the EPA's Compilation of Air Pollutant Emission Factors (AP-42). Table 5.2K, Proposed Dual Fuel Heater Emissions, presents the annual emissions generated from dual fuel heaters.

**Table 5.2K
Proposed Dual Fuel Heater Emissions**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Dual Fuel Heater	0.22	1.36	11.17	0.00	0.26

Source: Parsons Corporation. Calculations can be found in *Appendix 15.3c*.

Emergency Flare Emissions

The existing flare would be replaced with a new emergency digester gas flare. In case of an emergency, untreated digester gas would be routed to the flare for combustion. The flare manufacturer is not yet known; therefore, emission estimates of NO_x, CO, ROG, and PM₁₀ are based on the SJVAPCD's BACT Guideline 1.4.4A (in lb/MMBtu) for a municipal flare. Emission estimates were performed assuming the emergency flare would operate for 200 hours on an annual basis. Emissions would exceed 2 lbs/day over a 24-hour emergency period; therefore, the flare will be subject to BACT requirements. The limits from BACT Guideline 1.4.4A (a BACT evaluation for a City of Stockton digester gas flare) were used only for emission calculation purposes; the applicable BACT requirements would be those from Guideline 1.4.4. Emissions for SO_x were calculated for a sulfur concentration of 1000 ppm that was measured during a source test of untreated digester gas. Table 5.2L, Proposed Emergency Flare Emissions, presents the annual emissions generated from the proposed emergency flare.

**Table 5.2L
Proposed Emergency Flare Emissions**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Emergency Flares	0.12	0.11	0.25	0.51	0.03

Source: *Impact Sciences, Inc.* Calculations can be found in **Appendix 15.3c**.

Emergency Diesel Engines Emissions

The WWTP No.3 would retain the existing emergency generator and add four new emergency generators as part of the proposed improvements. Two new emergency generators would be installed in the vicinity of the aeration basin and the headworks, and two generators would be installed in the air blower building. Emergency generators are assumed to operate for 200 hours on an annual basis. Emission estimates for NO_x, CO, ROG, and PM₁₀ are based on EPA Nonroad Engine Regulations. In the Nonroad Engine Regulations, the g/bhp-hr limit for NO_x and hydrocarbon (HC) is specified as a combined NO_x+HC limit. Individual NO_x and HC limits were determined from "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling Compression-Ignition, EPA420-P-04-009, April 2004." For SO₂, a fuel sulfur limit of 500 ppmv for low sulfur diesel was utilized to calculate emissions based on the fuel usage (in gallons per hour) and a mass balance calculation of the conversion of sulfur to SO_x. Since the manufacturer of the engines has not yet been finalized, fuel usage of Caterpillar engines in the proposed size range was used. Table 5.2M, Proposed Emergency Diesel Engines Emissions, presents the annual emissions generated from the proposed emergency engines.

**Table 5.2M
Proposed Emergency Diesel Engines Emissions**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Emergency Diesel Engines	0.50	7.50	4.50	0.10	0.30

Source: *Parsons Corporation.* Calculations can be found in **Appendix 15.3c**.
The diesel engine emissions include the existing emergency generator.

Operational Mobile Sources

Operational mobile source emissions would increase due to increased activity levels of haul trucks exporting sludge, grit, and waste generated from the wastewater treatment plant. The proposed daily operating conditions would include 10 sludge truck trips, four screening truck trips, and four grit truck trips. The proposed treatment capabilities would also allow for grease and septage trucks to deliver waste to the WWTP No.3. Both grease and septage delivery trucks could come to the WWTP No.3 from multiple locations; therefore, a distance of 20 miles was assumed to represent an average travel distance. The WWTP No.3 would accept waste from eight septage trucks and 12 grease trucks per day. In order to operate at a higher capacity, the number of employees per day would increase from 15 to 30 employees under the new operating conditions. Emission factors for operational trucks and employee vehicles were generated using the methods described above for the existing mobile source emissions. Table 5.2N, Proposed Mobile Source Wastewater Treatment Emissions, presents a detailed summary of the mobile source emissions generated as a result of the WWTP No.3 operations.

**Table 5.2N
Proposed Mobile Source Wastewater Treatment Emissions**

Mobile Source (# of trips/day)	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Sludge Trucks (10)	0.08	1.18	0.52	0.00	0.02
Screening Trucks (4)	0.06	0.56	0.72	0.00	0.02
Grit Trucks (4)	0.03	0.27	0.35	0.00	0.01
Septage Trucks (8)	0.09	1.39	0.61	0.00	0.03
Grease Trucks (12)	0.15	1.33	1.72	0.00	0.04
Employee Vehicles (30)	0.05	0.10	1.08	0.00	0.00
Total Mobile Source Emissions	0.46	4.83	5.00	0.01	0.12

Source: Impact Sciences, Inc. Calculations can be found in **Appendix 15.3b**.

For modified stationary sources, the net changes in emissions after modification are used to compare with the SJVAPCD's thresholds of significance. Table 5.2O, Net Change in Wastewater Treatment Operational Emissions, shows the existing and proposed operational emissions along with the net change following the proposed improvements.

**Table 5.2O
Net Change in Wastewater Treatment Operational Emissions**

Operational Status/Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Total Proposed Operational Emissions	18.75	32.46	98.53	1.67	2.11
Total Existing Operational Emissions	13.89	5.59	49.48	10.92	0.05
Net Change in Operational Emissions	4.86	26.87	49.05	(9.25)	2.06
SJVAPCD Thresholds	10	10	—	—	—
Exceeds Thresholds?	NO	YES	—	—	—

Source: Impact Sciences, Inc.
Values in parentheses indicate a reduction in the net emissions.

As indicated in Table 5.2O, the NO_x emissions would exceed the significance threshold, while the ROG emissions would be less than the threshold. Accordingly, the operational emissions would result in a significant air quality impact for NO_x.

Toxic Air Contaminant (TAC) Emissions

This section presents the emissions and the estimation methodology for TACs that would occur during the operation of the WWTP No.3. These emission estimates were developed by the Parsons Corporation, which is preparing the air permit applications for the expanded WWTP No.3.

Emissions from the wastewater, and flare and digester gas engines were quantified utilizing a spreadsheet that was provided by the SJVAPCD. To quantify emissions from wastewater, this spreadsheet requires the plant influent flow (in MGD) as an input. Inputs of 32 MGD and 8,760 hours of operation were utilized. Based on the influent flow, emission rates (in lb/year) of individual TACs were estimated based on programmed influent concentrations. Emissions for each TAC were then calculated for primary treatment, secondary treatment and sludge drying.

For the flares and digester gas engines, the spreadsheet requires the fuel input (in millions of standard cubic feet per hour [MMscf/hr]) and the hours of operation to be input. For the flares, the MMscf/hr and 200 hours were utilized with SJVAPCD's "external combustion" source emission factors, while for the digester gas engines, the total MMscf/hr for both engines and 8,760 annual hours were used with "internal combustion" source emission factors.

To estimate TAC emissions from the heaters and diesel engines, another spreadsheet provided by the SJVAPCD was utilized, which is based on Ventura County APCD emission factors. For the

heaters, the combined MMscf/hr for the eight heaters and 8,760 hours were utilized with “external combustion” source emission factors, while for the emergency diesel engines, the total 1,000 gal/hr for five engines and 200 annual hours were used with “internal combustion” source emission factors.

The summary of WWTP No.3’s TAC emissions are presented in Table 5.2P.

As part of the air permit evaluation, the SJVAPCD will evaluate whether the expansion of the WWTP No.3 would comply with the SJVAPCD’s Risk Management Policy for Permitting New and Modified Sources (SJVAPCD, 2001). The policy requires that new sources or modification projects must not result in a significant increase in cancer risk or noncancer risk. A significant increase in cancer risk is defined as “an increase in the Maximum Excess Cancer Risk of at least ten per million....” A significant increase in noncancer risk is defined as “an increase in the hazard index of at least one....” The SJVAPCD will evaluate compliance with this policy during its permit evaluation. According to the Risk Management Policy, the district shall deny an Authority to Construct for a new or modified stationary source that does not or will not comply with the requirements of this policy. Therefore, the project will not have a significant impact in this regard because it would not be approved if not in compliance with this policy and is thus regulatorily constrained.

**Table 5.2P
Toxic Air Contaminant Emissions**

Pollutant	Waste water (TPY)	Digester Gas Engines (TPY)	Heaters (TPY)	Flare (TPY)	Diesel Engines (TPY)	Total (TPY)
Ammonia	3.4234	0.0045	-	0.0000	-	3.428
Acetaldehyde	-	-	0.0001	-	0.0313	0.031
Acrolein	-	-	0.0001	-	0.0014	0.001
Arsenic	-	-	-	-	0.0001	0.000
Benzene	0.0079	0.0016	0.0003	0.0000	0.0074	0.017
Beryllium	-	-	-	-	0.0000	0.000
1,3-Butadiene	-	-	-	-	0.0087	0.009
Cadmium	-	-	-	-	0.0001	0.000
Chloroform	0.1146	-	-	-	-	0.115
Chlorobenzene	-	0.0004	-	0.0000	0.0000	0.000
Copper	-	-	-	-	0.0002	0.000
1,4-Dichlorobenzene	0.0650	-	-	-	-	0.065
Dioxins	-	-	-	-	0.0000	0.000
Ethyl Benzene	0.0307	0.0047	0.0003	0.0001	0.0004	0.036
Formaldehyde	-	0.0927	0.0006	0.0044	0.0689	0.167
Furans	-	-	-	-	0.0000	0.000
Hexane	-	-	0.0002	-	0.0011	0.001
Hex Chrome	-	-	-	-	0.0000	0.000
Hydrogen Chloride	-	0.5251	-	0.0000	0.0074	0.533
Hydrogen Sulfide	0.7038	0.1061	-	0.0035	-	0.813
Lead	-	-	-	-	0.0003	0.000
Manganese	-	-	-	-	0.0001	0.000
Mercury	-	-	-	-	0.0001	0.000
Methyl Chloroform	-	0.0008	-	0.0000	-	0.001
Methylene Chloride	0.1090	0.0158	-	0.0003	-	0.125
Naphthalene	-	-	-	-	0.0008	0.001
Nickel	-	-	-	-	0.0002	0.000
PAHs	-	-	-	-	0.0014	0.001
Perchloroethylene	-	0.0000	-	0.0000	-	0.000
Phenol	0.0334	-	-	-	-	0.033
Propylene	-	-	0.0252	-	-	0.025
Selenium	-	-	-	-	0.0001	0.000
Styrene	0.0683	-	-	-	-	0.068
Toluene	0.0669	0.0017	0.0013	0.0000	0.0042	0.074
Total Chrome	-	-	-	-	0.0000	0.000
1,1,1-Trichloroethane	0.0370	-	-	-	-	0.037
Trichloroethylene	0.0360	0.0000	-	0.0000	-	0.036
Vinyl Chloride	-	0.0012	-	0.0000	-	0.001
Vinylidene Chloride	-	0.0001	-	0.0000	-	0.000
Xylene	0.0800	0.0209	0.0009	0.0002	0.0017	0.104
Zinc	-	-	-	-	0.0009	0.001
Total, TPY						5.726

Source: Parsons Corporation. Calculations can be found in Appendix 15.3c

Impact 5.2c

The proposed project has the potential to conflict with or obstruct implementation of the applicable Air Quality Management Plan

Impact Discussion

The SJVAPCD's air quality management plan accounts for future population growth and the associated infrastructure required to support such growth. However, as stated in Section 5.8.1, the City would reach the projected population of 520,500 people as early as 2012. Population growth in the Bakersfield area would thus exceed the level projected in the MBGP, which has the potential to conflict with the implementation of the air quality management plan. However, expansion of the WWTP No.3 is intended to accommodate, rather than induce, the population growth in the City, as discussed in Section 5.8.4.

The project is consistent with the site's land use (P – Public Facilities) and zoning (A – Agriculture). The City currently has a conditional use permit to operate the WWTP No.3, and expansion of the WWTP No.3 will be consistent with the modified conditional use permit. Therefore, the project will not conflict with its zoning or general plan designation and would continue to operate in a manner consistent with these designations.

The expansion would also involve replacement of the older cogeneration engine with new engines, expand the WWTP No.3's capability to produce its own electricity, and put the digester gas to a beneficial use rather than flaring it. On-site electrical generation will reduce the dependency on power provided by outside utilities and the associated emissions. Furthermore, the increase in NOx emissions due to the cogeneration engines and other combustion equipment must be offset in accordance with SJVAPCD Rule 2201 (New and Modified Stationary Source Review) to mitigate the increase in NOx emissions. While the details of the offset analysis have not been determined, the intent of the offset requirements in this rule is that the permitting of a new or modified stationary source should result in no net increase in emissions.

As indicated above the implementation of design features and regulatory requirements will keep the project from obstructing or conflicting with implementation of the SJVAPCD air quality management plans, therefore, causing a less than significant impact.

Impact 5.2d

The proposed project has the potential to significantly impact air quality through violations of Air Quality Standards or by contributing substantially to existing or projected air quality violations

Impact Discussion

As discussed in the following section, project-related traffic would not result in local violations of the CO standard at nearby intersections. No other pollutant standards are expected to be exceeded as a result of direct project emissions.

As indicated in Section 5.2.1, the air basin is in nonattainment for the national 8 hour ozone, the state 1-hour ozone, and the national and state PM10, and PM2.5 standards. The construction and operation of the proposed project would generate net emissions that exceed the threshold of significance for NOx set forth in the GAMAQI. Ozone is a regional pollutant that forms when ROG and NOx interact in the presence of sunlight. Oxides of nitrogen also contribute to PM10 and PM2.5 in the SJVAB. Emissions of NOx from the proposed project would contribute to formation of ozone, PM10, and PM2.5 within the SJVAB. However, as stated in the previous section, emission offsets must be provided in accordance with Rule 2201 to mitigate the increase in NOx emissions. Thus, the project would not contribute substantially to existing violations of the ozone, PM10, and PM2.5 standards, causing any such impacts to be less than significant.

Impact 5.2e

The proposed project has the potential to expose sensitive receptors to substantial pollutant concentrations

Impact Discussion

As noted in the discussion of toxic air contaminants, the SJVAPCD's Risk Management Policy would preclude the district from issuing an Authority to Construct for the new and modified sources at the WWTP No.3 if they did not meet the risk criteria in the policy. These criteria are analogous to the health impact criteria listed as thresholds of significance in the GAMAQI. Accordingly, because the expansion of the WWTP No.3 would not be approved by the SJVAPCD if it does not comply with this policy, the health impacts would be less than significant if the WWTP No.3 modifications and improvements were to be constructed and operated.

In regards to carbon monoxide concentration levels at congested roadway intersections (CO Hot Spots) the proposed expansion of the WWTP No.3 would increase the daily traffic volume in the project's vicinity through minimal increase in truck traffic (from 22 to 38 truck trips per day) and employee commuting (from 15 to 30 car trips per day). Currently, all potentially impacted intersections operate at a Level of Service (LOS) C or above, except for the southbound direction of Ashe Road and Taft Highway. In 2010, the full build-out year of the proposed project, two intersections (Gosford Road at McCutchen Road and Ashe Road at Taft Highway) would operate at a LOS below C. Inclusion of the proposed project would not degrade any intersection operating at a LOS above C to a LOS E or F. Mitigation required before the full build-out of the proposed project would improve the LOS of all potentially impacted intersections to LOS C. According to the GAMAQI, if the LOS at an intersection is not reduced to LOS E or F or an intersection operating at a LOS F is not substantially worsened, the project can be said to have no potential to create a violation of the CO standard (See discussion under Impact 5.9b and MM 5.9-2 located in Section 5.9-Transportation and Traffic). Therefore, the project's impact on local CO concentrations at intersections would be less than significant, consequently, any impacts to sensitive receptors would be less than significant.

Impact 5.2f

The proposed project has the potential to expose sensitive receptors to offensive odors affecting a substantial number of people

Impact Discussion

Table 4-2 in the GAMAQI indicates that sensitive receptors located within 2 miles of a wastewater treatment facility constitute a potentially significant odor impact. The proposed project could therefore cause a nuisance to residents and violate Rule 4102 of the SJVAPCD's Rules and Regulations and the California Health and Safety Code Section 41700.

The GAMAQI suggests establishing a buffer zone as the main method for reducing odor impacts to a less than significant level. As discussed in Section 5.2.2, Existing Odor Setting at Wastewater Treatment Plant No. 3, the City of Bakersfield has established a one-quarter-mile odor buffer zone around the existing wastewater treatment plant (see Figure 4). There are currently two existing residences located within the one-quarter-mile odor buffer. The nearest concentration of other residential receptors are located approximately 0.6 miles south of the proposed project on Ashe Road. There are also residential communities to the north and east of the project site approximately one mile away. City Policy does not allow any new residential development within one quarter mile of any treatment facility due to potential odor concerns (City of Bakersfield, Public Works Memorandum, 2004). The upgrade and expansion of the WWTP No. 3 will not expand the existing footprint such that this one- quarter-mile buffer would encompass areas not already within the buffer zone. All nearby landowners within the buffer zone have previously been notified by the City. Recently approved development projects in the vicinity of the odor buffer zone have been designed to accommodate the one-quarter-mile odor buffer zone.

In addition, the GAMAQI also acknowledges that add-on control devices and/or process modifications implemented at the source of the odors, such as the newly proposed odor control systems, may also be feasible to reduce the dimensions of the buffer zone. The proposed upgrades to the wastewater treatment plant would include the addition of a separate odor control facility and removal of sludge drying beds. As discussed in the Project Description, Section 3.3, these odor control facilities would service the headworks, the primary clarifiers, the trickling filters, the septage and grease processing facilities, and the solids handling facilities. These facilities would provide for enhanced odor control pursuant to the project objectives in this regard. The new facility would remove hydrogen sulfide (the primary odiferous compound generated from wastewater treatment plants) by forcing foul air through natural biofilter beds made up of several forms of media. The sludge drying beds are the primary source of odors from the WWTP No.3 due to their necessary exposure to sunlight and the atmosphere. The GAMAQI also suggests an odor complaint threshold as being more than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. As discussed in Section 5.2.2, Existing Odor Setting at Wastewater Treatment Plant No. 3, according to the SJVAPCD's records, the last confirmed complaints regarding odor at the WWTP No. 3 occurred on September 5, 2006 and October 19, 2001. The recent odor complaint incident was due to problems with the chemical odor scrubber. Corrective action has been taken to reduce the impacts of future problems with the existing chemical odor scrubber while the plant expansion and upgrade is occurring. Therefore, with the addition of a new odor control facility, elimination of the sludge drying beds, a sufficient one-quarter-mile odor buffer zone, the corrective action implemented for future problems with the chemical odor scrubber, and the limited number of confirmed or unconfirmed complaints filed within the last three years, impacts due to odors will be considered less than significant.

5.2.5 CUMULATIVE IMPACTS

Impact 5.2g

The proposed project has the potential to have significant cumulative impacts on air quality from NOx emissions

Impact Discussion

According to the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), "Any proposed project that would individually have a significant air quality impact ... would also be considered to have a significant cumulative air quality impact." (SJVAPCD, 2002). As discussed in Section 5.2.1, the San Joaquin Valley Air Basin is nonattainment for the national 8 hour ozone, the state 1-hour ozone, and the national and state PM10, and PM2.5 standards. Thus, if the project's emissions would exceed the individual thresholds for ROG and NOx, which are ozone and PM precursors, then the project would result in a cumulatively considerable increase. As shown in Table 5.2G, Estimated Unmitigated Construction Emissions, and Table 5.2Q, Net Change in Wastewater Treatment Operational Emissions with Mitigation, the project's emissions after mitigation would still exceed the NOx threshold of 10 tons per year (55 pounds per day for the construction phase). Therefore, the project is considered to have a significant and unavoidable cumulative impact on air quality.

Impact 5.2h

The proposed project has the potential to have cumulatively considerable impacts on air quality from Particulate Matter (PM) emissions

Impact Discussion

While the air basin is in nonattainment with respect to the national and state PM10 standards, most of the PM10 emissions would occur during the construction phase. The SJVAPCD considers that compliance with the requirements of Regulation VIII is sufficient to reduce the

individual project impacts to less than significant. These requirements will be met during the construction phase and PM10 impacts will be reduced to the extent practicable. The GAMAQI also recommends that the potential for earthmoving activities associated with the project and any other nearby projects to expose sensitive individuals to PM10 be evaluated. Currently, there are few sensitive receptors in proximity to the project site (e.g., two residences within 1,000 feet). While there would likely be nearby residential projects under construction at the same time as the WWTP No.3 construction, most of the plant construction's dust-generating activities (e.g., grading and construction of the percolation ponds) would be completed before the adjacent residential projects are completed and occupied. Accordingly, it would not be likely for a substantial number of sensitive receptors to be impacted by simultaneous construction emissions from multiple projects. Furthermore, any neighboring projects would also be subject to the requirements of Regulation VIII. Thus, no cumulative impacts with respect to PM10 are anticipated.

5.2.6 MITIGATION MEASURES

According to CEQA, when a project has been determined to cause a significant impact, mitigation measures or alternatives must be identified to reduce the project's impacts. As shown in Table 5.2G, Estimated Unmitigated Construction Emissions, and Table 5.2O, Net Change in Wastewater Treatment Operational Emissions, emissions resulting from the construction and operation of the WWTP No.3 would exceed the threshold of significance for NOx. The section below discusses potential mitigation to reduce NOx emissions.

MM 5.2-1

During the construction phase of the proposed project, the contractor, shall implement, GAMAQI recommended mitigation measures that may be considered to reduce emissions from heavy-duty equipment. The applicable mitigation measures from Table 8-6 from the GAMAQI, as well as other feasible measures, are recommended to reduce NOx emissions, as well as other pollutants, as follows:

- Minimize idling time (e.g., 10-minute maximum for construction equipment, and 5-minute maximum for heavy-duty trucks per the CARB Airborne Toxics Control Measure for commercial truck idling);
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);
- Curtail construction during periods of high ambient pollutant concentrations;
- Implement activity management (e.g., rescheduling activities to reduce short-term impacts);
- Properly and routinely maintain all construction equipment, as recommended by the manufacturer; and
- Encourage ridesharing and use of transit for construction employees commuting to the project site.

Prior to commencement of construction activities, the contractor shall submit to the Public Works Department a written guarantee stating that during the construction phase, these measures will be utilized on all construction equipment.

MM 5.2-2

The proposed project would include installation of four new emergency diesel engines and retention of the existing emergency engine. Because all of the emergency diesel engines would have a brake horsepower rating over 50, they must comply with Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (California Code of Regulations §93115,

Title 17). The ATCM sets allowable maintenance and testing hours per year along with specific diesel PM emission standards. The proposed engines were assumed to operate at 0.15 g/bhp-hr, which is the current nonroad engine standard in the size range of the proposed engines. At this emission level, according to the ATCM, new emergency diesel engines would not be allowed to operate for over 50 hours per year (actual emergency operation is not limited). The emission estimates provided in Table 5.2M and Table 5.2O assumes emergency diesel engines are maintained and tested for 200 hours per year. Upon the issuance of the SJVAPCD air permits, compliance with the ATCM would limit maintenance and testing to 50 hours per year. Therefore, emissions from emergency diesel engines would be one quarter of those shown in Table 5.2M. The emissions based on the operational limits in the ATCM are shown below in Table 5.2Q, Proposed Emergency Diesel Engine Emissions with Mitigation.

**Table 5.2Q
Proposed Emergency Diesel Engines Emissions with Mitigation**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Emergency Diesel Engines	0.13	1.88	1.13	0.03	0.08

Source: Impact Sciences, Inc. Calculations can be found in **Appendix 15.3c**.

Note: Emissions assume compliance with the ATCM for Stationary Compression Ignition Engines to operate less than 50 hours per year for maintenance and testing.

MM 5.2-3

The proposed digester gas engines represent the largest contributor of NO_x to the operational emissions. Digester gas emissions were estimated assuming engines would meet current SJVAPCD BACT Guideline 3.3.13 for waste gas fired ignition combustion engines. Emission estimates in Table 5.2J are based on emission factors achieved in practice or contained in the SIP per Guideline 3.3.13. The digester gas engines would fulfill the BACT guidelines for meeting achieved in practice emission rates. However, as shown in the BACT Guideline 3.3.13, there are no technologically feasible methods to further reduce NO_x emissions from waste gas fired ignition combustion engines. Furthermore, the CARB's Guidance for the Permitting of Electrical Generation Technologies concluded that add-on control technologies are not appropriate for waste gas-fired internal combustion engines:

“Waste gas contains impurities that, if combusted will likely poison catalyst based post-combustion control systems. Consequently, the approach for combusting waste gas in either a reciprocating engine or gas turbine has focused on combustion processes that result in minimal NO_x being produced and noncatalytic control systems. For reciprocating engines, lean-burn engines have been the choice because these types of engines produce the lowest emission of NO_x without using post combustion treatment technologies” (CARB, 2001).

The City will install per the project design, lean-burn digester gas engines that comply with the BACT Guideline 3.3.13. Therefore, additional mitigation to reduce NO_x emissions to a less than significant level could not be feasibly accomplished.

5.2.7 SIGNIFICANCE AFTER MITIGATION

Short-Term Construction Impacts

Impact 5.2a

The recommended mitigation measure (5.2-1) would reduce the magnitude of construction-related emissions to some extent. The resultant benefit of most of the mitigation measures

cannot be determined because insufficient detail about the construction activities is known at this time to enable an exact calculation of emissions from specific construction activities that would be affected by the mitigation measures. Moreover, no feasible mitigation exists that would reduce these emissions to a sufficient degree (e.g., approximately 68 percent for NO_x emissions for the worst-case day) such that the mitigated emissions would be below the SJVAPCD's recommended thresholds of significance. Therefore, the construction-related emissions for the proposed project would be considered significant and unavoidable.

Long-Term Operational Impacts

Impact 5.2b

Mitigation Measures 5.2-2 and 5.2-3 for NO_x emissions described above would reduce the proposed project's emissions. However, NO_x emissions would not be reduced to a less than significant level as shown in Table 5.2R, Net Change in Wastewater Treatment Operational Emissions with Mitigation. Therefore, the operational impacts from the proposed project would remain significant and unavoidable.

Table 5.2R
Net Change in Wastewater Treatment Operational Emissions with Mitigation

Operational Status/Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Total Proposed Operational Emissions	18.38	26.84	79.70	1.60	1.89
Total Existing Operational Emissions	13.89	5.59	49.48	10.92	0.05
Net Change in Operational Emissions	4.49	21.25	30.22	(9.25)	1.84
SJVAPCD Thresholds	10	10	—	—	—
Exceeds Thresholds?	NO	YES	—	—	—

Source: Impact Sciences, Inc.
Values in parentheses indicate a reduction in the net emissions.

Impact 5.2c

As indicated in the impact discussion, compliance with existing regulatory requirements would prevent significant environmental impacts. Therefore, no mitigation measures are necessary and impacts will remain less than significant.

Impact 5.2d

As indicated in the impact discussion, compliance with existing regulatory requirements would prevent significant environmental impacts. Therefore, no mitigation measures are necessary and impacts will remain less than significant.

Impact 5.2e

As indicated in the impact discussion, compliance with existing regulatory requirements would prevent any significant environmental impacts to sensitive receptors for toxic air emissions. Further, adherence to the mitigation measures listed in Section 5.9 of this report will provide for LOS of C on nearby roadways, thus, reducing impacts to sensitive receptors from traffic related CO emissions to less than significant levels. Therefore, impacts to sensitive receptors will be less than significant.

Impact 5.2f

As indicated in the impact discussion, compliance with existing regulatory requirements would prevent any significant environmental impacts, therefore, no mitigation measures are necessary and impacts will remain less than significant.

Cumulative Impacts

Impact 5.2g

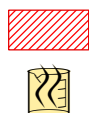
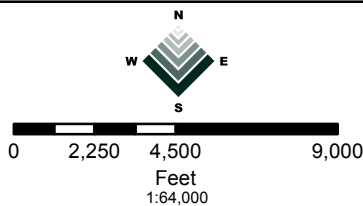
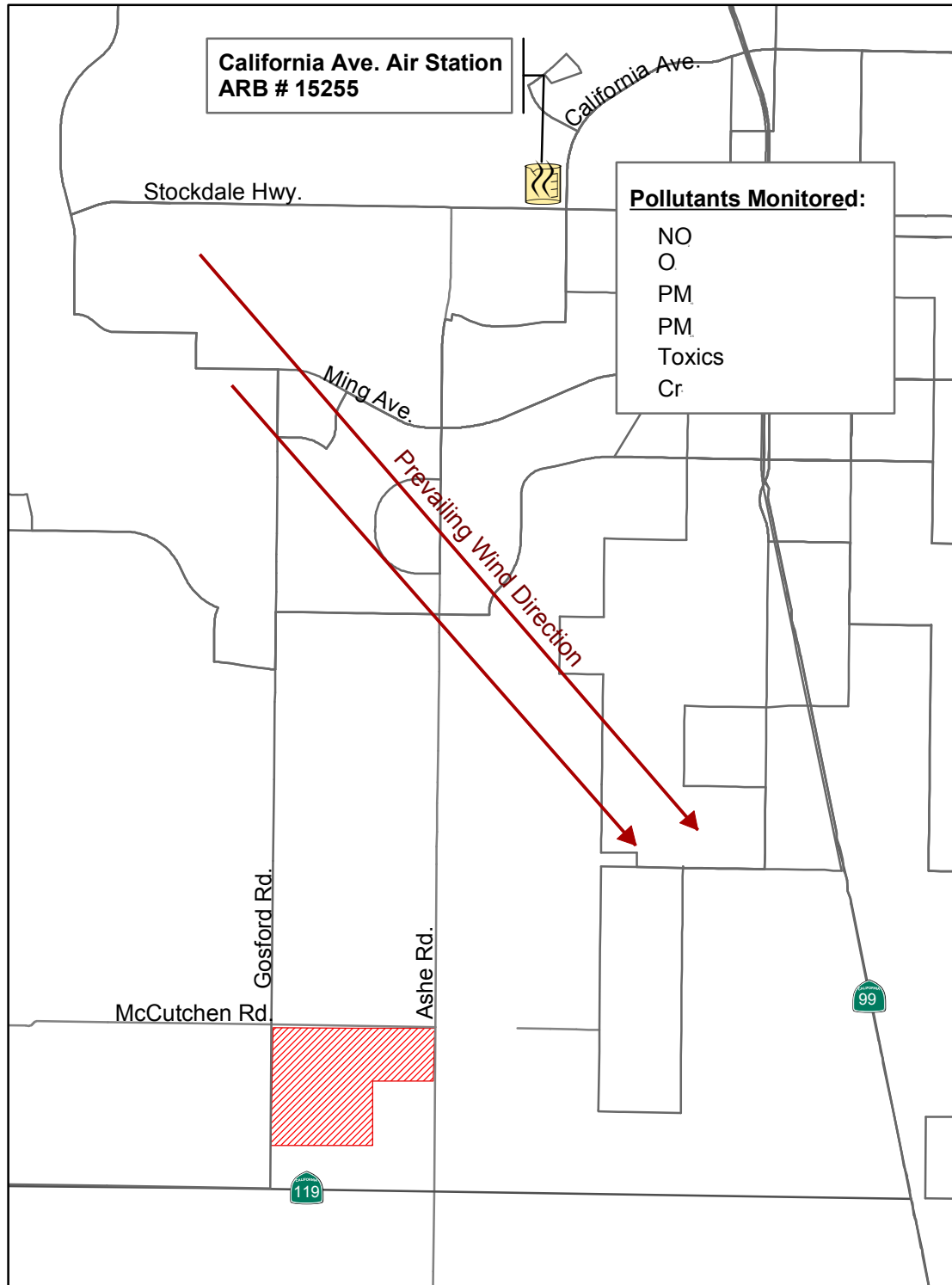
Implementation of Mitigation Measure 5.2-3 for NO_x emissions would reduce the proposed project's emissions. However, NO_x emissions would not be reduced to a less than significant level. Therefore, the NO_x emissions from construction and operational activities will cause cumulative impacts from the proposed project to remain significant and unavoidable.

Impact 5.2h

As indicated in the impact discussion for Impact 5.2h, cumulative impacts from particulate matter are considered less than significant; therefore, no mitigation measures were required to mitigate impacts to less than significant levels. As a result, PM impacts from the proposed project in combination with past, present and potential future projects are not considered cumulatively significant.

WWTP No. 3 Expansion & Upgrade

Air Monitoring Station



Project Area



Wind Direction



Air Monitoring Station



Quad Knopf
Figure 12

5.3 BIOLOGICAL RESOURCES

The purpose of this section is to identify existing biological resources on the project site and in the immediate vicinity, as well as evaluate any potential Project-related impacts on identified resources (including sensitive species) and recommend mitigation measures to reduce the significance of any such impacts. Information in this section is based on the Biological Survey for City of Bakersfield Wastewater Treatment Plant #3 Expansion Project, completed by Quad Knopf, Inc., dated July 10, 2006. The report, in its entirety, can be found in Appendix 15.4. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1.

The biological field survey of the proposed project area and a 200-foot buffer zone was conducted on April 19, 2006. The surveys consisted of walking transects, spaced at 50-foot intervals, over the entire site and buffer zone. Plant and animal species were recorded and photographs were taken to illustrate current site conditions. An additional survey at the southeast corner of Highway 119 and Ashe Road was also conducted on May 22, 2006, for the plant's proposed low pressure gas line.

Prior to conducting the field survey, queries of the California Department of Fish and Game Natural Diversity Data Base (CNDDB) (CDFG 2006) and the California Native Plant Society's Electronic Inventory (CNPS 2006) was conducted for the Gosford, Conner, Millux, Oil Center, Lamont, Weed Patch, Oildale, Rosedale, and Stevens USGS 7.5-minute quadrangles.

5.3.1 BIOLOGICAL SETTING

As indicated in the biological report completed by Quad Knopf, Inc (See Appendix 15.4), the following Special-Status Species were reported by the California Natural Diversity Database (CNDDB) and Online Inventory of Rare and Endangered Plants of California on the Gosford and eight Surrounding USGS 7.5-Minute Quadrangles:

Animals:

Agelaius tricolor (Tricolored blackbird), *Ammospermophilus nelsoni* (San Joaquin antelope squirrel), *Anniella pulchra pulchra* (Silvery legless lizard), *Ardea alba* (great egret), *Athene cunicularia* (Burrowing owl), *Buteo swainsoni* (Swainson's hawk), *Charadrius alexandrinus nivosus* (Western snowy plover), *Coccyzus americanus occidentalis* (Western yellow-billed cuckoo), *Danaus plexippus* (Monarch butterfly), *Dendrocygna bicolor* (Fulvous whistling duck), *Desmocerus californicus dimorphus* (Valley elderberry longhorn beetle), *Dipodomys ingens* (Giant kangaroo rat), *Dipodomys nitratooides nitratooides* (Tipton kangaroo rat), *Egretta thula* (snowy egret), *Emys (=Clemmys) marmorata pallida* (Southwestern pond turtle), *Gambelia sila* (Blunt-nosed leopard lizard), *Helminthoglypta callistoderma* (Kern shoulderband), *Onychomys torridus tularensis* (Tulare grasshopper mouse), *Perognathus inornatus inornatus* (San Joaquin pocket mouse), *Plegadis chihi* (White faced ibis), *Sorex ornatus relictus* (Buena Vista Lake shrew), *Spea (=Scaphiopus) hammondii* (Western spadefoot), *Taxidea taxus* (American badger), *Vulpes macrotis mutica* (San Joaquin kit fox), and *Xanthocephalus xanthocephalus* (Yellow-headed blackbird).

Plants:

Atriplex cordulata (Heartscale), *Atriplex tularensis* (Bakersfield smallscale), *Calochortus striatus* (Alkali mariposa lily), *Caulanthus californicus* (California jewel-flower), *Delphinium recurvatum* (Recurved larkspur), *Lasthenia glabrata ssp. Coulteri* (Coulter's goldfields), *Layia leucopappa* (Comanche Point layia), *Mimulus pictus* (Calico monkeyflower), *Monardella linoides ssp. Oblonga*

(Flax-like monardella), *Monolopia congdonii* (San Joaquin woollythreads), *Navarretia setiloba* (Piute Mountains navarretia), *Opuntia basilaris* var. *treleasei* (Bakersfield cactus), *Pterygoneurum californicum* (California chalk-moss), *Stylocline citroleum* (Oil neststraw), *Stylocline masonii* (Mason's neststraw), *Tortula californica* (California screw moss),

Natural Vegetation Communities of Concern:

Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, Valley Sacaton Grassland, Valley Saltbush Scrub, Valley Sink Scrub

The survey revealed that native habitats that once occupied the proposed project site and much of the surrounding area have been entirely replaced by human-created habitats, principally, agricultural. Because of the frequent disturbance from ongoing agricultural operations, vascular plants native to the region have been dramatically reduced or eliminated from the project site and the surrounding area. The majority of vegetation that remains consists of agricultural crops and weedy species associated with agricultural operations. Animal species that use the project site are likely limited to those species occurring in intensively farmed croplands of the Central Valley.

5.3.2 REGULATORY SETTING

Metropolitan Bakersfield Habitat Conservation Plan (MBHCP)

The City of Bakersfield and Kern County jointly developed the MBHCP to acquire permits that would allow for the incidental take of federally and state listed species included in the MBHCP area. The permits acquired include a permit under Section 10(a)(1)(B), hereafter referred to as a 10(a) permit, of the Federal Endangered Species Act (Incidental Take Permit PRT-786634) and a permit under Section 2081 (CESA 9322) of the California Endangered Species Act. The MBHCP is designed to offset impacts resulting from the incidental take of listed species and the loss of habitat incurred through the authorization of otherwise lawful activities. The goal of the MBHCP is to acquire, preserve, and enhance native habitats that support special status species while allowing development to proceed as set forth in the *Metropolitan Bakersfield General Plan (2002)*.

The proposed project area is located within the Bakersfield Metropolitan General Plan Area of the Metropolitan Bakersfield Habitat Conservation Plan (City of Bakersfield and County of Kern 1991); therefore, the collection of one-time mitigation fees is required, payable to either the City or County at the time building permits are issued. Within the City of Bakersfield limits, the MBHCP is implemented by Section 15.78 of the Bakersfield Municipal Code. Development impact fees, including the MBHCP fee, are calculated at \$1,240 per gross acre. Upon payment of the mitigation fee and receipt of City or County Project approval, the development permit applicant would be allowed the "incidental take" of special status species in accordance with State and Federal Endangered species laws¹. Collected mitigation fees are deposited into a trust fund, administered by the Implementation Trust, which is composed of representatives from the City of Bakersfield and Kern County Trustees, United States Fish and Wildlife Service, the California Department of Fish and Game, and members of the public as advisors. Mitigation fees provide for the acquisition and/or enhancement of natural lands and restorable lands for the purpose of creating preserves, and the MBHCP provides for reduction of take within the developed areas through relocation and displacement of individuals in areas affected by development.

5.3.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to biological resources. The

¹ Note, permit coverage does not provide state incidental take authority for blunt-nosed leopard lizards, a state fully protected species.

questions posed in the Checklist have been used as thresholds of significance for this section. Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- The project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- The project has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS.
- The project has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- The project interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites.
- The project conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- The project conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Further, Section 15065(a), Mandatory Findings of Significance, of the CEQA Guidelines states that a project could have a significant effect on the environment if "the project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species".

5.3.4 PROJECT IMPACTS

Short/Long-Term Construction and Operational Impacts

Impact 5.3a

The proposed project may have a substantial adverse effect, on species identified as candidate, sensitive, or special status as delineated in local or regional plans, policies or regulation, and/or the California Department of Fish and Game or US Fish and Wildlife.

Impact discussion

Burrowing owls as well as several associated ground burrows and loggerhead shrikes were observed during the biological survey completed for the project. Development of the currently vacant land could destroy and or prevent burrowing owls from returning to the project site. Moreover, during the construction period, there is a potential for owl entrapment within burrows located on site. Further, development of the project area could reduce the loggerhead shrikes availability of prey species which rely on such vacant land for habitat.

In addition, although no San Joaquin kit fox were reported on site nor any signs (scat, tracks, prey remain, etc.) identified in the project area or the buffer zone during the field survey, due to the valley wide range of the kit fox, kit fox may be present upon commencement of project

construction and/or during construction. Moreover the non-native grassland habitat identified on site may provide foraging habitat for the kit fox. Further, due to the inclination of kit fox for den-like structures such as pipes, culverts, or similar structures with a diameter of 4-inches or greater, entrapment of kit fox could occur. Therefore, impacts to candidate, sensitive, and special status species are considered potentially significant.

Impact 5.3b

The proposed project may interfere with the movement of native resident or migratory fish or wildlife species or with an established native resident or migratory fish or wildlife species or with an established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impact Discussion

The project is not within the Kern River flood plain or along a canal which has been identified by the United States Fish and Wildlife Service as a corridor for native resident wildlife species. However, a portion of the project area consists of vacant land that could be used by migratory bird species such as the Burrowing Owl, which was identified on site during the biological survey for the project area. Further, the project site has the potential to be used by the San Joaquin Kit fox, which is listed as a Federally Endangered species. Consequently, the project construction will permanently remove habitat used by migratory animals, causing potentially significant impacts.

5.3.5 CUMULATIVE IMPACTS

Impact 5.3c

The proposed project has the potential to remove land from the overall land balance for special status species

The proposed project in conjunction with other on-going development in southwest Bakersfield will permanently remove land from the overall land balance available for listed, protected, and special wildlife and vegetative communities. The removal of these lands constitutes a potentially cumulatively considerable impact to biological resources.

5.3.6 MITIGATION MEASURES

MM 5.3-1

Prior to ground-disturbing activities, the contractor shall provide a qualified biologist who shall conduct surveys for burrowing owls in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 1995) and the California Burrowing Owl Consortium Guidelines (Santa Cruz Predatory Bird Research Group 2005). The survey will be conducted over the entire site and, where possible, 150 feet around the project site. If no burrows or burrowing owls are identified, then no further action is required. If burrows or burrowing owls are identified, then the following mitigation should be implemented.

If possible, when burrowing owls are detected during the breeding season, impact should be avoided. A no-disturbance buffer zone should be delineated in a 75- meter radius around the occupied burrow. No ground disturbance would be permitted in the no-disturbance buffer zone until a qualified biologist has determined that the young have fledged. Otherwise, compliance with the CDFG passive relocation protocol during the non-nesting season will avoid any significant impacts to burrowing owls. The findings of the survey shall be included in a report submitted to the Public Works Department.

MM 5.3-2

To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, the contractor shall cover all excavated, steep-walled holes or trenches more than 2 feet deep at the close of each working day by plywood or similar materials, or provide one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under mitigation measures 5.3-3 & 5.3-4 of this section must be followed.

MM 5.3-3

Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected by the contractor for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

MM 5.3-4

The contractor shall provide qualified personnel to conduct preconstruction surveys for known dens according to the CDFG Region 4 Protocols, and implement appropriate take avoidance measures for the San Joaquin Kit Fox in accordance with MBHCP take avoidance measures. All agency guidelines regarding kit fox tracking and excavation to prevent entrapment of animals in potential dens shall be followed. The findings of the survey shall be included in a report submitted to the Public Works Department.

MM- 5.3-5

The project area is located within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and is required to pay Habitat Mitigation Impact Fees to off-set incidental take of wildlife species. These fees are collected into a trust for payment of mitigation activities as prescribed in the MBHCP implementation management agreement. Prior to the issuance of construction permits, the MBHCP impact fees for the undeveloped acreage to be disturbed by the project shall be paid by the City.

5.3.7 SIGNIFICANCE AFTER MITIGATION

Short/Long-Term Construction/Operational Impacts

Impact 5.3a

By providing steps listed in mitigation measures 5.3-1, 5.3-2, 5.3-3, and 5.3-4, the City will help to ensure that endangered, threatened or species of concern are not killed, harmed, or harassed. Further, by participating in the MBHCP the City is helping ensure that habitat for special status species is protected in areas of more suitable qualities than that which exists on site. Therefore, implementation of mitigation measures 5.3-1, 5.3-2, 5.3-3, 5.3-4, 5.3-5 should reduce any impacts associated with the project to less than significant levels.

Impact 5.3b

Although the mitigations listed above help protect special status species the project may still impact migratory animals in that the site will no longer provide land for migratory animals. Participation in the MBHCP will provide better quality habitat off-site, thus contributing to the overall betterment of these migratory species. Further, measures listed above which provide

protections for the kit fox, will ultimately protect them from the inadvertent entrapment, and harm associated with the proposed project. Therefore, the implementation of mitigation measures 5.3-1, 5.3-2, 5.3-3, 5.3-4, 5.3-5 will reduce any impacts to migratory species associated with the project to less than significant levels.

Cumulative Impacts

Impact 5.3c

Required participation in the MBHCP (MM 5.3-5) by the proposed project and nearby on-going development projects reduces any cumulatively considerable impacts to less than significant levels. Therefore, any impacts from the proposed project in combination with past, present and potential future projects are not considered cumulatively significant.

5.4 CULTURAL RESOURCES

The purpose of this section is to identify existing cultural resources on the project site and in the immediate vicinity, as well as evaluate any potential Project-related impacts on identified resources and recommend mitigation measures to reduce the significance of any such impacts. Information in this section is based on the *Cultural Resources Inventory For CUP 05-0669 Wastewater Treatment Plant #3 Expansion And Upgrade EIR* completed by Pacific Legacy, Inc. in July 2006. The report, in its entirety, can be found in Appendix 15.5. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1.

A survey of the project area was methodically conducted by walking 15 meter wide transects through the entire area. All exposed soils were inspected for the presence of cultural resources. Archaeological survey for the low pressure gas line and roads improvements was completed on July 20, 2006. The area surveyed for the gas line is a corridor 15 meters wide.

Prior to fieldwork, an in-house record and information search was conducted on April 21, 2006 at the Southern San Joaquin Valley Information Center of the California Historical Resources Inventory System at California State University, Bakersfield (Record Search #06-191) for known archaeological sites within ½ mile radius of the project area. Sources consulted include:

- Southern San Joaquin Valley Information Center site and study base maps;
- National Register of Historic Places (*Directory of Determinations of Eligibility*, California Office of Historic Preservation, Volumes I and II, 1990);
- Office of Historic Preservation Computer Listing 1990 and updates);
- *California Historic Resources Inventory* (State of California 1976);
- *California Historical Landmarks* (State of California 1990);
- *California Points of Historical Interest* listing (May 1992).

In addition, a request was submitted to the California Native American Heritage Commission to consult their Sacred Lands Files in order to identify other culturally significant properties. In a letter dated May 18, 2006 the Commission reported that no sacred lands were known to the Commission within the project area (see Appendix A of Appendix 15.5).

5.4.1 CULTURAL RESOURCES SETTING

As indicated in the cultural resources study conducted by Pacific Legacy, Inc. (See Appendix 15.5), “the San Joaquin Valley and adjacent foothills of the Coast Ranges and Sierra Nevadas were occupied by Yokuts, an ethno-linguistic group of more than 40 autonomous, linguistically and culturally related tribelets. [...] Ethnographic sources identify the Yowlumne (Yaelmani) Yokuts, who resided from present-day Bakersfield south to Tejón Ranch and the Hometwoli or Halaumne tribelet in the area between and to the north of Buena Vista and Kern Lakes (Kroeber 1925 and Latta 1999, respectively). A Yowlumne village, Woilu, is located on the old channels of the Kern River and within the city limits of Bakersfield, near the project area. Kuyo, another Yowlumne village is located on Old River Slough (Stine Canal). One of the main Halaumne villages was Halau, near the confluence of Old River and Kern Slough (Kroeber 1925 and Latta 1999, respectively). [...] During the American period, one of the important early outposts in the southern San Joaquin Valley was Fort Tejón. Fort Tejón was established in 1854 next to Grapevine Creek in the Tejón Pass area (Hoover et al. 1966:126).”

The study indicated that no prehistoric or historic archaeological sites or Native American cultural resources have been recorded within the project area; Four (4) cultural resources (P-15-5980, P-15-5981, P-15-5982, and P-15-11138) have been previously recorded within ½ mile of the project

area and sixteen (16) prior cultural resource surveys conducted within a ½ mile of the project area; and there are no cultural resources within the project area listed in the National Register of Historic Places, the California Register, California Points of Historical Interest, California Inventory of Historic Resources or the California State Historic Landmarks.

5.4.2 REGULATORY SETTING

As indicated in the Cultural Resources Evaluation completed by Pacific Legacy, Inc. (See Appendix 15.5) “A basis for defining the significance of historical resources under CEQA is found in Public Resources Code (PRC) 5024.1, Title 14 CCR Section 4850.3. A California Register of Historical Resources is established, “to identify the state’s historical resources and indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.” Historical resources may be listed in the California Register if they meet the eligibility criteria for listing in the California Register as defined at PRC 5024.1, Title 14 CCR Section 4850.3. According to CEQA Guidelines Section 15064.5(a) (3), “Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource has integrity and meets at least one of the criteria for listing in the California Register of Historic Resources as follows:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California’s history or the United States; or
2. It is associated with lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.”

Integrity, as defined for the California Register, is “the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance” (California Office of Historic Preservation 2006:2). This means that a historic resource must keep enough of its historic character or appearance to be recognizable as historic. In addition, that historic character must reflect the era in which the resource was historically important.

“[...] A historic resource can have lost sufficient integrity to be ineligible for listing in the National Register of Historic Places and still be eligible on a California Register level. In fact, a resource may have lost its historic character and still have integrity on a California Register level, if it has the potential to yield significant scientific or historic information or specific data (California Office of Historic Preservation 2006:2).

A project with an effect that may cause a substantial adverse change in the significance of an historical resource is considered to have a significant adverse impact on the environment (CEQA Guidelines Section 15064.5[4][b]). A substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5[4][b][1]).”

5.4.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to biological resources. The questions posed in the Checklist have been used as thresholds of significance for this section. Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- The project causes a substantial adverse change in the significance of a historical resource as defined in § 15064.5.
- The project causes a substantial adverse change in the significance of an archaeological resources pursuant to §15064.5.
- The project directly or indirectly destroys a unique paleontological resource or site or unique geologic feature.
- The project disturbs any human remain, including those interred outside of formal cemeteries.

5.4.4 PROJECT IMPACTS

Short-Term Construction Impacts - Archaeological/Historical Resources

Impact 5.4a

The project has the potential to disturb buried human remains and/or buried historical and archaeological resources.

Impact Discussion

An archaeological reconnaissance was conducted by Pacific Legacy, Inc. in July 2006. The reconnaissance indicated no cultural resources of significance located on site. Nonetheless, the potential for cultural resources to be disturbed or unearthed as a result of the grading and earthwork activities during construction of the proposed project remains. Mitigation is required.

5.4.5 CUMULATIVE IMPACTS

No cumulative impacts are expected as a result of the proposed project due to the absence of known resources within the project site and the minimal number of cultural resource sites located within the project vicinity. Further, any development off of the proposed project site will require its own environmental analysis and corresponding mitigation measures for cultural resource protection. Therefore, cumulative impacts are considered less than significant.

5.4.6 MITIGATION MEASURES

MM 5.4-1

If human remains of Native American origin are discovered during project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, the contractor shall cease all further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the coroner of Kern County has been informed and has determined that no investigation of the cause of death is required, and
- if the remains are of Native American origin,
 - a. the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, or
 - b. the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission.

Inadvertent discoveries of potential human remains shall be reported and monitored by the Public Works Department.

MM 5.4-2

If buried cultural resources, such as chipped or ground stone, historic bottles or ceramics, building foundations, or non-human bone are inadvertently discovered during ground-disturbing activities, the contractor shall stop all work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. Sites discovered having relevance to Native Americans shall be made known to the appropriate individuals/agencies/groups as determined by the archaeologist in consultation with the Lead Agency.

Inadvertent discoveries of potential buried cultural resources shall be reported and monitored by the Public Works Department.

5.4.7 SIGNIFICANCE AFTER MITIGATION

Short-Term Construction Impacts – Archaeological/Historical Resources

Project Impacts

Impact 5.4a

If potential cultural resources are unearthed on the project site, the above mitigation measures (MM 5.4-1 and 5.4-2) call for the immediate stoppage of work until a qualified professional can review the find and recommend proper actions for their protection and cataloguing. Implementation of these mitigation measures provide mechanisms to preserve any inadvertently discovered cultural resources. Consequently, impacts to cultural resources will no longer exist upon their implementation. Therefore, all impacts to cultural resources are expected to be less than significant after mitigation.

Cumulative Impacts

As indicated in Section 5.4.5 above, no cumulative impacts were identified for the project. Therefore, no mitigation measures were required and impacts from the proposed project in combination with past, present and potential future projects are not considered cumulatively significant.

5.5 HAZARDS AND HAZARDOUS MATERIALS

The purpose of this section is to identify existing hazards and hazardous conditions currently located on site and in the project vicinity as well as any significant environmental impacts associated with potential hazards or hazardous conditions that could arise out of the implementation of the proposed project. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1. Further, this section outlines mitigation measures to help alleviate any identified significant environmental impacts.

5.5.1 HAZARDS SETTING

Hazardous materials can include, but are not limited to, petroleum products, vehicular fluids, paint, solvents, cleaning fluids, and pesticides, as well as some associated constituent components, and can be transported by several mechanisms; train, truck, car, hand, personal vehicle, air. Hazards can be defined as “a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation” (UN/ISDR, 2004).

Agricultural Use

Agricultural uses have occurred on portions of the proposed project site as well as on adjacent agricultural land. Agricultural activities on the project site were discontinued in 2002. Agricultural activities continue on surrounding properties. Activities which occurred on the project site consisted of the spreading of water from a former yeast plant for water reclamation. Feed and fodder crops were grown on this land to help uptake the effluent spread on these lands.

Agricultural activities (primarily annual row crops such as alfalfa and cotton, and vineyards) occurring off site will generally include the use of chemical fertilizers, herbicides, and pesticides to yield higher production volumes. Residues of these constituents could potentially still exist on these surrounding properties. Further, these agricultural activities often employ aerial spraying and/or onsite spraying as a way of distributing the agents. These activities therefore have a potential to drift onto surrounding land uses.

Hazardous Materials

Currently located on site is a small laboratory used to perform necessary water quality and solids analysis. The laboratory currently contains small amounts of reagents and testing materials/standards/chemicals and generates small amounts of hazardous materials. All such chemicals and hazardous materials are stored, used, and disposed of according to all regulations and safety measures required by Local, Regional, State, and Federal Regulations. The existing laboratory currently utilizes a Hazardous Materials Business Plan per regulatory requirements.

Oil & Gas Well

The project site does not occur within the administrative boundary of a designated oil field. Currently there is an abandoned oil well located on the project site, approximately in the NE quarter of the section (See Figure 13). The well is identified as API number 02932204 with a depth of approximately 12,355 ft. The well was operated by Shell Western E&P, Inc, and abandoned in 1958.

Oil and Gas Pipelines

Currently located on the project site are a natural gas pipeline and an oil production pipeline. The natural gas pipeline located within the project area currently crosses the southwest corner of the existing storage ponds (See Figure 13) within a 15' right of way (ROW). It is a 36" high pressure

gas line (approx. 850 lbs of pressure) owned by Pacific Gas and Electric (PG&E). The pipeline is used for transmission only and not for domestic use through stub outs. The oil production line follows the same 15' ROW as the natural gas pipeline. It is a 10" oil pipeline owned by Shell Pipeline Corporation. The existing ROW is currently accommodated across the existing effluent storage ponds by an earthen berm surrounding the pipelines through the ponds.

5.5.2 REGULATORY SETTING

State

Government Code Section 65962.5 requires the compilation of a list of locations of hazardous materials release sites. This list is called the Hazardous Waste and Substances Sites (Cortese) List and is used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Every project subject to CEQA is required to determine whether it is located on one of the sites inventoried on this list.

Division of Oil, Gas, and Geothermal Resources (DOGGR) "oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells. The regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state through sound engineering practices that protect the environment, prevent pollution, and ensure public safety" (DOGGR [online], 2006). DOGGR derives its authority from Section 3000 et seq of the Public Resources Code and sets its regulatory oversight under Title 14, Division 2 Chapter 4 of the California Code of Regulations.

DOGGR recommends that buildings not occur over or near plugged and abandoned oil wells. If avoidance of the well is impossible, DOGGR may recommend the abandonment or re-abandonment of the well in compliance with current DOGGR specifications. Per Section 3208.1 of the California Public Resources Code, in order "to prevent, as far as possible, damage to life, health, and property, the supervisor or district deputy may order the re-abandonment of any previously abandoned well if the supervisor or the district deputy has reason to question the integrity of the previous abandonment."

The California Department of Toxic Substances Control (DTSC) is charged with the restoration, protection, and enhancement of public health and the environment through the regulation of hazardous waste/materials and toxic substances. The DTSC ensures these execution of these objectives through programs, regulations, oversight of, and educational activities regarding hazardous waste generation, disposal, and transport. DTSC oversees cleanups of hazardous and toxic materials, prevents spills through the enforcement of laws and imposition of sanctions for entities which improperly handle, store, or dispose of potentially hazardous materials and toxic substances, and educates the public about the proper handling, storage, and disposal of hazardous materials through public outreach programs and informational sessions.

Local

Kern County Environmental Health Services Department (EHSD) regulates all businesses and public agencies in unincorporated areas of Metropolitan Bakersfield that handle or store hazardous materials above the following threshold quantities 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases. All entities that handle or store hazardous materials above these thresholds must complete a Hazardous Materials Business Plan and Chemical Inventory with the Kern County Environmental Health Services Department.

Kern County Environmental Health Services Department conducts inspections to verify whether a Spill Prevention Control and Countermeasure (SPCC) Plan is in place for aboveground storage

tanks and upon completion of the inspection relays associated information to the governing RWQCB.

City of Bakersfield Fire Department (BFD) Environmental Services Department is the Certified Unified Program Agency (CUPA) and oversees the management and cleanup of hazardous materials within the City limits. As indicated in Section 8.60.020 of the Bakersfield Municipal Code, the CUPA is charged with enforcement and administration of the following programs:

- a. The requirements of Health and Safety Code Chapter 6.5 (commencing with Section 25100) applicable to hazardous waste generators and the sections dealing with permit-by-role, conditional authorization, and conditional exempt tiered permits.
- b. The requirements of subdivision (c) of Section 25270.5 of Chapter 6.67 of the Health and Safety Code for owners and operators of above ground storage tanks to prepare a spill prevention control and countermeasure plan.
- c. The requirements of Chapter 6.7 of the Health and Safety Codes concerning underground storage tanks.
- d. The requirements of Article I of Chapter 6.95 of the Health and Safety Code concerning hazardous materials release response plans and inventories.
- e. The requirements of Article 2 of Chapter 6.95 of the Health and Safety Code concerning acutely hazardous materials.
- f. The requirements of subdivisions b and c of Section 80.103 of the Uniform Fire Code, concerning hazardous materials management plans and inventories. (Ord. 3814 § 2 (part), 1998)

The CUPA requires hazardous materials plans and collects fees for the administration of the Unified program. The department also responds to hazardous material emergencies and requires unrestricted access to sites for emergency response purposes.

5.5.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to hazards and hazardous materials. The questions posed in the Checklist have been used as part of the Initial Study (See Appendix 15.1) and as thresholds of significance for this section as well. Therefore, a project may have a significant environmental impact if one or more of the following occurs:

- The project creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- The project creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment.
- The project emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within one quarter mile of an existing or proposed school.
- The project is located on a site which is included on a list of hazardous materials sites compiled pursuant to the Government Code Section 65962.5 and, as a result, creates a significant hazard to the public or the environment.
- The project is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the project area.
- The project is within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the project area.

- The project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- The project would expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wild lands.

5.5.4 PROJECT IMPACTS

Long-Term Operational Impacts

Impact 5.5a

The project may create a significant hazard to the public or the environment through the routine use and disposal of small quantities of hazardous materials in the onsite laboratory.

Impact Discussion

The proposed project includes a new laboratory which will contain small amounts of reagents and testing materials/standards/chemicals used to perform necessary water quality and solids analyses. The existing lab located on the project site, as well as the new replacement laboratory, is subject to the City Fire Department Hazardous Materials Business Plan requirements. The proposed project, therefore, will be required to comply with current regulations that make mandatory such plans in order to ensure mitigation of potential impacts from the use and storage of hazardous materials on site. Inappropriate disposal of these materials could also create hazards to the public or environment. Impacts are considered potentially significant.

Impact 5.5b

The project may create a significant hazard to the public or the environment through the release of petroleum compounds from known and unknown abandoned wells located on the project site.

Impact Discussion

As indicated in Division of Oil, Gas and Geothermal Resources (DOGGR) records, an abandoned well is located in the northeast quarter of the project area. The well was drilled to a depth of approximately 12,355 feet and was abandoned in 1958. The potential exists during construction and grading of the site that the well plug or cap could become compromised providing the opportunity for the well to leak petroleum hydrocarbons into the environment. Further, due to the existence of the known abandoned well on site, the potential for additional unknown wells to exist on site is possible as well. The compromising of such unknown wells could potentially cause impacts to the public health and safety from the release of petroleum hydrocarbons into the environment (See Figure 13). Impacts are considered potentially significant.

Impact 5.5c

The project may create a significant hazard to the public or the environment through storage of digester gas on the project site.

Impact Discussion

The proposed project contains the storage of digester gas. An above ground storage tank will be used to store methane gas (approx. 25-100 pounds per square inch (psi)) generated from the treatment of onsite wastewater for reuse as fuel in the wastewater treatment plant process. If the storage tank is not properly designed and/or operated, due to its explosive nature, it has the potential to harm workers on the proposed site as well as damage property on the project site. Additionally, the maintenance of such project components has the potential to have harmful health effects through the inhalation of digester gas by employees. The pressure vessel will be designed and constructed in accordance with all applicable OSHA safety requirements, ANSI

design standards and City Fire Department requirements. Operation of the pressure vessel will be in accordance with all permit requirements including worker safety training. Implementation of these regulatory requirements cause impacts associated with the above ground storage tank to be less than significant.

Impact 5.5d

The project may create a significant hazard to the public or the environment through the handling, storage, and use of hazardous materials during the construction of the proposed project.

Impact Discussion

During the construction process, contractors may use small amount of hazardous materials such as solvents, lubricants, and fuels for use in construction equipment. The use of such products would likely occur for the duration of the construction activities. Since the construction activities will occur over several years, such hazardous materials will likely be stored on site. The use and storage of these materials leads to the possibility of leakage or accidental spill of hazardous materials onsite during construction activities causing the potential for significant impacts.

Impact 5.5e

The project may create a significant hazard to the public or the environment through the uncontrolled release of digester gas into the environment.

Impact Discussion

As discussed in Section 3.3, Project Description (Item 9 Energy Recovery), and in Section 5.2.4, Air Quality, an emergency flare will be utilized to burn waste digester gas during upset or emergency conditions. Digester gas will be collected for energy recovery in an above ground storage tank prior to treatment and routing to the cogeneration internal combustion engines. The storage tank will serve as a buffer storage point that would allow digester gas to be collected, and pressurized prior to use for energy recovery. A limited amount of excess storage capacity will be provided by this tank in the event of upset conditions. During the energy recovery process, the cogeneration engines would consume the available digester gas a majority of the time. In the event the cogeneration engines are down, the digester gas would be routed to the dual fuel heaters to provide heat to the digesters. In the event there is excess digester gas not consumed by either the cogeneration engines, or the dual fuel process heaters, the waste gas would be routed to the emergency flare to be combusted under controlled conditions. Accordingly, it is unlikely that digester gas would be vented without undergoing combustion in the internal combustion engines, the heaters, or the emergency flare given the storage capacity and fuel demands of this equipment. Furthermore, as discussed, in Section 5.2.4, Table 5.2L, emissions from flare operations would be minimal, given the SJVAPCD rules to comply with BACT. The combustion of the waste digester gas in a flare in compliance with regulatory permitting requirements would prevent an uncontrolled release of this material into the environment, and cause impacts associated with this release to be less than significant.

Impact 5.5f

The proposed project has the potential to create hazardous impacts from natural gas and oil transmission lines through the accidental breach of existing onsite transmission lines.

Impact Discussion

There are two transmission lines currently located on the project site. These lines cut across existing and future percolation pond areas for the project. The potential exists that these lines could be breached during construction or be compromised by the creation of ponds around and up to these lines. Such rupture of these lines could leak oil and natural gas into the environment

causing environmental contamination and human health effects as well as disruption of needed oil and gas supplies used for energy purposes.

State regulations prohibit the construction of structures or the planting of large trees within the ROW of such transmission lines. Further, as part of the design process, the City of Bakersfield has decided to leave the transmission lines in their present location and design the ponds around them such that the two transmission lines would remain surrounded by an earthen berm as wide as the 15' right of way which is currently assigned for these lines, along their entire length through the project area. This design feature will remove the potential of physical disturbance of the oil and gas transmission lines, as well as minimize the potential for rupture of the lines, therefore, eliminating potential impacts associated with these lines. The City is currently coordinating with the transmission line owners to confirm their design plans with these parties. Implementation of design features and coordination with the transmission line owners will reduce impacts to less than significant levels.

5.5.5 CUMULATIVE IMPACTS

Impact 5.5g

The proposed project has the potential to contribute to existing hazard and hazardous materials impacts from land uses and activities located within the project vicinity

The proposed project has identified potential hazards as indicated in Section 5.5.4 of this report. Current surrounding land uses consist of agricultural uses which are slated for development. Until such time as these areas are developed for urban uses, agricultural activities will likely continue. As indicated previously, agricultural activities have the potential to create hazards in relation to pesticides, herbicides, and chemical fertilizers. The proposed project in conjunction with these agricultural hazards provides the potential for cumulatively considerable hazard impacts. However, according to the Kern County General Plan, Volume III, Final Environmental Impact Report, April 2004, "the Kern County Department of Agriculture is responsible for the enforcement of regulations on the use of pesticides in Kern County at the local level. The use of pesticides is regulated in part by buffer zones that restrict the use of certain pesticides around sensitive sites. Some of these restrictions include:

- Restricted Materials- Restricted materials shall not be applied by air within ¼ miles of residential areas or sensitive receptor areas such as schools.
- Cotton Defoliants- Folex and Paraquat application shall not be made within ½ mile of residential areas or sensitive receptor site such as schools
- Metam Sodium- Sprinkler irrigation application shall not be made within ½ mile of residential areas or sensitive receptors such as schools.
- Methyl Bromide and Chloropicrin- The buffer zone could vary depending on many factors with the maximum distance being 3,850 feet."

Furthermore, according to the Kern County Health Department, "... it is unlikely that development in accordance with the General Plan Update would expose future residents to the affects of agricultural chemical because of the short half-lives of currently used pesticides, and the fact that future development would be hooked up to a central water supply which is monitored for contaminants" (MBGP, 2002).

Additionally, development to occur in the project area consists primarily of residential development, which on its own does not exhibit uses, activities, conditions, or materials which provide the opportunity for significant hazardous impacts. Consequently, the impacts associated with the proposed project reviewed in conjunction with any potential impacts of future development in the surrounding area (residential), will not cause the project to have a cumulatively considerable hazard impact.

Further, the proposed project site contains set backs from identified onsite hazards such as digester gas pressurized storage vessels, on-site chemicals, or hazardous materials. Such hazard setbacks coupled with the existing one-quarter-mile buffer put in place for odor purposes, reduces the extent of any hazard impacts to surrounding properties from the proposed project, further reducing any contribution to hazard impacts in the project vicinity.

Impact 5.5h

The proposed project has the potential to contribute to cumulative hazards impacts associated with oil production and development in the project area.

Since the proposed project is not located within an identified DOGGR oil field, the potential for considerable numbers of oil and gas wells to occur in the immediate project vicinity is considered minimal. Coupled with the proposed project's nature which does not include oil and gas wells in its design, the project will not cause or contribute to cumulative hazards impacts from the production and or development of oil and gas wells or fields.

5.5.6 MITIGATION MEASURES

MM 5.5-1

Per state regulations, the City of Bakersfield Wastewater Department will submit an updated hazardous materials business plan and inventory to the local CUPA authority for all operational hazardous materials that will be utilized in the on-site laboratory and wastewater treatment plant. The plan will include an emergency response plan for accidental release of hazardous materials, an inventory (per SARA Titles II & III as well as Chapter 6.95 of the California Health and Safety Code) of all hazardous materials kept and/or used on site, and a CUPA approved training program for employees in the proper storage, handling, and disposal of all hazardous materials kept and/or used onsite. This plan will be submitted prior to start-up of the new facilities.

MM 5.5-2

Prior to the issuance of grading permits, the City will arrange for the well to be leak tested witnessed and approved by DOGGR personnel. The leak test will be completed to determine the efficacy of the existing plug. If any of the surface plug is removed due to grade cutting or if the leak test is insufficient per DOGGR's assessment, the well will need re-abandoned to current DOGGR standards. If the leak test is sufficient per DOGGR's assessment and no casing cutting is completed for grading purposes then the City will create a 10 foot no build buffer around the existing well. The well is not located within the construction footprint of any of the facilities. Thus, the 10 foot no build buffer can be easily accommodated. The location, however, will be subject to paving for internal circulation improvements which would not affect the integrity of the abandoned well casing since it would be located deep enough beneath the construction zone so as to not be disturbed by paving activities.

MM 5.5-3

If development uncovers any previously unknown oil, gas, or injection wells, the Contractor and/or City will immediately notify DOGGR and all construction adjacent to the well location will cease, until the DOGGR makes a determination of the status of the well and any actions (i.e. re-abandonment) required for the protection of public health and safety. All DOGGR requirements for discovered wells will be completed by the City of Bakersfield Public Works Department under the direction and supervision of DOGGR staff.

MM 5.5-4

All hazardous materials used and stored on site as part of construction related activities such as diesel fuel, oils, lubricants, and hydraulic fluids shall be stored and managed properly and Material Safety Data Sheets kept onsite. Responsibility for the proper management and storage of these materials and the availability of MSDS sheets will be the responsibility of the various construction firms. Further, these firms will provide training for all their construction employees in the proper handling and storage of such materials prior to the beginning of construction.

5.5.7 SIGNIFICANCE AFTER MITIGATION

Long-Term Operational Impacts

Impact 5.5a

As indicated in the discussion of Impact 5.5a, the proposed project will be required to continue to maintain a Hazardous Materials Business Plan for review and approval by the City Fire Department, which is the identified CUPA for the project area. Completion and required implementation of the Hazardous Materials Business Plan (MM 5.5-1) will provide the needed measures for protection of public health and safety from the small quantities of hazardous materials to be used and stored onsite on an operational basis, therefore, causing impacts to be less than significant after mitigation.

Impact 5.5b

DOGGR will provide the leak testing so that a determination of the integrity of the existing cap and plug for the well can be made. Further, if leak testing indicates that the well has been compromised, DOGGR will oversee the proper corrective action (such as re-abandonment, if required) for protection of the public health and safety. Therefore, implementation of MM 5.5-2 and MM 5.5-3, will reduce any existing and or future potential impacts from known and unknown oil wells located on the project site to less than significant.

Impact 5.5c

Compliance with existing regulatory design, operational safety requirements and City Fire Department Standards will ensure that impacts associated with storage of digester gas will be less than significant.

Impact 5.5d

Implementation of MM 5.5-4 will provide the appropriate training and safety measures to employees who work on the construction site for the project. Training of construction crews will help keep incidents of hazardous materials spills or leaks to a minimum reducing impacts of such occurrences to less than significant levels.

Impact 5.5e

As discussed in the impact discussion above, compliance with regulatory standards and requirements cause impacts associated with the uncontrolled release of digester gas to be less than significant. Therefore, no mitigation measures were required, and impacts from the uncontrolled release of digester gas remain less than significant.

Impact 5.5f

As discussed in the impact discussion above, project design features which will keep the transmission lines ROW buried through the new storage pond areas coupled with coordination efforts with the transmission line owners reduce any impacts associated with these lines to less

than significant levels, Therefore, no mitigation was required and impacts from the oil and gas transmission lines remains less than significant.

Cumulative Impacts

Impact 5.5g

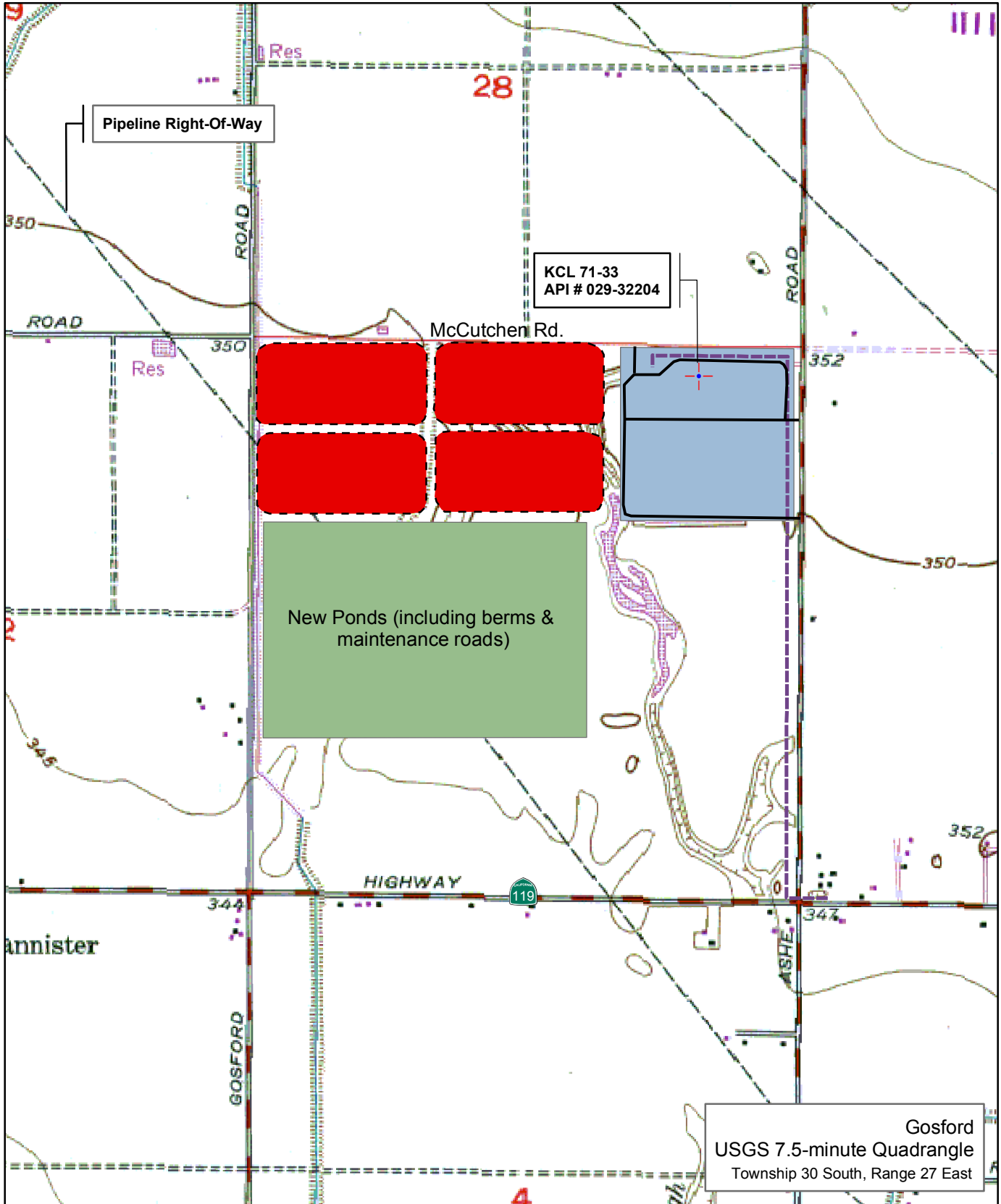
As indicated in the cumulative impacts section above, no significant cumulative hazard impacts were identified, therefore, no mitigation measures were proposed. Significance therefore remains at a level of less than cumulatively significant.

Impact 5.5h

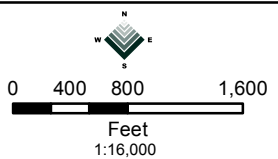
As indicated in the cumulative impacts section above, no significant cumulative hazards impacts were identified in relation to oil and gas production and/or development, therefore, no mitigation measures were proposed. Therefore, any impacts from the proposed project in combination with past, present and potential future projects are not considered cumulatively significant.

WWTP No. 3 - Expansion & Upgrade

Oil Well / Pipeline Location



Gosford
USGS 7.5-minute Quadrangle
Township 30 South, Range 27 East



- Existing Storage Ponds
- 32 MGD Treatment Facilities
- New Ponds
- Internal Circulation
- Low Pressure Gas Line
- Well Location

5.6 HYDROLOGY & WATER QUALITY

This section describes the hydrologic and water quality setting of the project area and the project's immediate vicinity and examines the potential impacts associated with the proposed project related to water resources. This section of the environmental analysis is to evaluate project hydrologic and water quality impacts with respect to the City of Bakersfield's CEQA Compliance Procedures, and upon project compliance with California Regional Water Quality Control Board (RWQCB), Central Valley Region—enforced regulations which ensure protection of both surface and groundwater. Such regulations and requirements include Titles 22, 23 and 27 of the California Code of Regulations (CCR) as well as the requirements in the City of Bakersfield's Waste Discharge Permit Order No. 5-01-105, and Special Order R5-2003-0161 modifying Order No. 5-01-105, and the regulations/conditions which will be included in construction work plans to be prepared by the City of Bakersfield in coordination with the RWQCB. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1. Concerns raised by commenting agencies and the public in response to the Notice of Preparation (NOP) for this project will also be addressed.

Several studies have been conducted on the hydrology and geohydrology of the project site and vicinity as part of the proposed project. They include the following:

- Kenneth D. Schmidt and Associates, (KDSA), Groundwater Conditions in the Vicinity of City of Bakersfield WWTF No. 3, Prepared for Quad Knopf, July 2006. (See Appendix 15.6a).
- Kenneth D. Schmidt Letter Report April 21, 2006 (See Appendix 15.6b).
- Kenneth D. Schmidt and Associates, 2005 Summary of Groundwater Conditions in the Vicinity of the City of Bakersfield WWTF No. 3, January 27, 2006.
- Kleinfelder, Infiltration Evaluation WWTP No. 3 Effluent Ponds, Bakersfield, California, (File No. 64411), April 7, 2006.
- Kleinfelder Report of Analytical Results, , 8 November 2005.
- RWQCB, Letter Review of the Proposed Percolation Ponds, Bakersfield Wastewater Treatment Plant (WWTP) No. 3, Southeast of McCutchen and Gosford Roads, Bakersfield, July 31, 2006 (See Appendix 15.6c).

Information and setting descriptions and impacts evaluation in this section are summarized, excerpted and referenced from the reports above. Copies of the full reports not included in the appendices are incorporated by reference and on file and available for review at the City of Bakersfield, Development Services Department, 1715 Chester Avenue, Bakersfield, CA 93301. The point of contact is Marc Gauthier, Principal Planner, who can be reached at (661) 326-3786.

5.6.1 HYDROLOGIC SETTING

A hydrogeological report was prepared for the proposed project by Kenneth D. Schmidt (July, 2006). The report evaluated a study area that extends from Harris Road on the north to Houghton Road on the south and from Green Road on the west to Akers on the east (See Figure 14). This boundary was selected as it adequately captures the project site and the surrounding area to provide a meaningful analysis of the groundwater quality and the effects of past, present, and proposed future uses in the project vicinity.

Existing Conditions

The current wastewater flow into Wastewater Treatment Plant No. 3 (WWTP No. 3) is over 15 MGD. Since the design capacity of WWTP No. 3 is 16 MGD, the continued growth of the City will soon push the wastewater flow into Treatment Plant No. 3 to its nominal designed treatment capacity. The existing facilities at WWTP No. 3 provide primary and secondary treatment of incoming wastewater. The secondary treated effluent flows via pipeline to the Interstate Five Reclamation Site where it is used as crop irrigation water and is spread on the farmland. The wastewater solids, which are extracted from the wastewater using biological and physical processes, are further treated in the anaerobic digesters, spread and dewatered on sludge drying beds, transported to the City's Wastewater Treatment Plant No. 2 farm operation (located on South Mount Vernon Avenue), and spread as fertilizer for non-food crops on the farmland. During the winter months low irrigation demand season, treated effluent is stored in the four existing on-site effluent storage ponds.

Proposed Expansion

The amount of effluent to eventually be percolated at the WWTP No. 16 MGD, or about 18,000 acre-feet per year. However, as indicated by the City of Bakersfield, the new ponds would not complete construction until late 2009, may not be fully operational until 2012, and are not estimated to reach full capacity until 2025. As a result, the rate of percolation is expected to gradually increase until full capacity is reached in 2025.

A nitrogen removal process is to be added at the WWTP No. 3, and only denitrified effluent would be percolated. The existing storage ponds would be used as percolation ponds and up to about 150 acres of new ponds would be developed. The design effluent infiltration rate is about 0.25 foot per day (Kleinfelder, 2006). About 2 MGD is to be treated to the tertiary level for direct non-potable reuse in the vicinity. The remaining effluent (up to 14 MGD) would be sent to the I-5 Reclamation Site in accordance with existing authorizations.

Urbanization is projected to occur relatively rapidly in the area east and south of the WWTP No. 3. Most private domestic wells will likely no longer be in use within the next five to ten years.

Existing Effluent Water Quality

Carollo Engineers summarized the chemical quality of effluent from WWTP No. 3 based on sampling in 2004, as part of the Best Practicable Treatment and Control (BPTC) program. This BPTC study is still in progress, and not yet published in a report. The average Total Dissolved Solids (TDS) of the effluent was about 450 milligrams per liter (mg/l.) The average total nitrogen concentration was about 18 mg/l, and most of this was in the ammonia form. Concentrations of iron, manganese, and metals in the Title 22 drinking water standards were low, below the respective Maximum Contaminant Levels (MCLs). Alpha activities were less than 2 picocuries per liter, well below the MCL. Numerous trace organics were also determined in the effluent and were generally not detectable or were below significant levels.

Historical Operations

For approximately two decades, some of the WWTP No.3 effluent was mixed with industrial wastewater from a plant that produced baker's yeast and was recycled on the 400 acres of City property immediately south of the treatment facilities (See Figure 15). The yeast plant was owned and operated by the AYC and the 400 acres was termed the "Use Area". The discharge of WWTP No. 3 effluent and yeast plant wastewater to the Use Area was regulated by two orders adopted by the Regional Board on January 28, 1983: Waste Discharge Requirements Order No. 83-016 and Wastewater Reclamation Requirements Order No. 83-017. AYC began its discharge of industrial wastewater to the Use Area in 1983 and discontinued its discharge at the end of 2002.

Groundwater/Subsurface Water Conditions and Quality

One aquifer is located above a depth of about 400 feet beneath the WWTP No. 3 and to the northeast as indicated by Cross Section A-A" (See Figure 14).

In Spring of 1993, water-level elevations exceeded 195 feet above mean sea level (AMSL) near the northeast corner and edge of the study area. The elevation of the project area is approximately 350 feet AMSL. A depression cone was present beneath the central part of the study area due primarily to pumping of irrigation wells located in the area between Old River and Stine Road and Panama Lane and Engle Road. A cone of depression is a funnel-shaped drop in the water table immediately surrounding a well.

Water-level elevation contours and direction of groundwater flow for the regional aquifer in Spring 1999, shows that water-level elevations were highest (greater than 220 feet AMSL) beneath the northwest corner of the study area. This is indicated to be associated with large-scale intentional recharge associated with Kern Fan Water Banking projects to the northwest. The lowest water-level elevations were in the southwest part of the study area (less than 200 feet).

In January 2006, water-level elevations for the shallow groundwater tapped by the monitor wells ranged from 203 to 220 feet AMSL. A mound was present beneath the effluent holding ponds. The direction of groundwater flow beneath the project area has been to the south or southeast. For the regional aquifer, beneath most of the west half of the study area, there was usually an easterly and southerly component of groundwater flow (Spring 1999).

Local sources of groundwater recharge for the project area include seepage from Kern Delta Water District (KDWD) irrigation canals located on the west edge of the proposed project and within 1 mile of the site, deep percolation of applied irrigation water in the KDWD, and percolation of effluent from the WWTP No. 3 storage ponds. The major sources of recharge on a regional level include seepage from unlined canals and Kern River stream flow and water-banking projects along the Kern River. Groundwater discharge is primarily by pumping of wells and groundwater outflow to adjoining areas, where more groundwater is pumped.

Quarterly and annual reports on the results of monitor well sampling have been provided to the RWQCB. The highest TDS concentrations (900 to 1,100 mg/l) were in water from Monitoring Well No. 5 (MW-5) and MW-7, located in the former "Use Area", where mixed American Yeast Company (AYC) wastewater and effluent were discharged (See discussion under Impact 5.6b). From 1983 to 2002, the AYC discharged wastewater effluent for non-food crop production to an approximately 400-acre area (Use Area) located south of the four existing storage ponds (See Figure 15). Comparably, TDS concentrations from the other monitor wells ranged from 380 to 610 mg/l. However, the highest nitrate-nitrogen concentrations were in water from MW-6, and the lowest was in water from MW-5. Except for MW-5 Total Organic Carbon (TOC) concentrations ranged from less than 0.01 to 5.7 mg/l. Manganese concentrations in water from MW-5 and MW-8 exceeded the recommended Maximum Contaminant Level (MCL) of 0.05 mg/l. Water from MW-5 has had a noticeable yellow color. The reason for the relatively higher concentrations in water from this well and the yellow color are associated with the former Use Area. Monitoring results for MW-5 for bicarbonate and chloride have shown significant decreases in concentration since disposal of AYC wastewater ceased. Bicarbonate concentrations in water from this well decreased from about 850 mg/l in early 2004 to 640 mg/l in April 2006. Chloride concentrations decreased from about 320 mg/l in early 2004 to about 210 mg/l in April 2006. At this rate of decrease, concentrations of these constituents could be near background levels within about three to five years.

The six public supply wells within the study area as shown on Figure 10 all tap strata below a depth of 300 feet. The water quality for these wells were all in acceptable or below detectable concentrations. The private domestic wells within the study area were sampled in 2001 by BSK Associates on behalf of the City (see Appendix 15.5a for location and sample analyses, Table 6 and Figure 19). These private well monitoring results are provided in the WWTP No. 3's quarterly and annual monitoring reports which have been submitted in accordance with the WDR's Monitoring and Reporting Program. It should be noted that these wells were monitored prior to

the development of WWTP No. 3's nine monitoring well network. Many of these wells tapped relatively shallow groundwater. Well # 34N had the highest TDS concentration of 915 mg/l. The other public supply wells had TDS concentrations of less than 600 mg/l. Well 34N also had the highest chloride, bicarbonate and TOC concentration. The chemical quality of water from this well, located in an area just east of the former Use Area, indicate that it was affected by former AYC wastewater discharge. The table below provides the Maximum Contaminant Level concentrations for these water quality chemical characteristics.

Constituents	MCL
Bicarbonate	N/A
Biochemical Oxygen Demand (BOD)	N/A
Chloride	250 mg/L
Manganese	0.05 mg/L
Nitrate (measured as Nitrogen)	10 mg/L
Nitrite (measured as Nitrogen)	1 mg/L
Total Dissolved Solids (TDS)	500 mg/L
Total Kjeldahl Nitrogen (TKN)	N/A
Total Organic Carbon (TOC)	N/A

Groundwater Monitoring Well Network (Figure 15)

The first eight monitoring wells located on or in the vicinity of the WWTP No. 3 were installed in late November-December of 2002 (See Figure 15). In October 2004, the ninth monitor well was installed just west of the WWTP No. 3. These wells generally tap the uppermost saturated deposits beneath the WWTP No. 3 and vicinity.

Figure 14 shows the locations of five City of Bakersfield (COB) supply wells and one California Water Service public supply well in the study area. These public supply wells are located east of Gosford Road and near or north of McCutchen Road, and range in depth from 560 to 710 feet.

In addition, there are numerous private domestic and irrigation wells in the study area. The depth interval tapped by the most active irrigation wells in the area is between about 200 and 500 feet in depth.

Water-level hydrographs for 2002 – 2006 for the WWTP No. 3 monitor wells indicate stable or rising water levels for the period of record. Seasonal variations are present, with the shallowest levels in the spring and the deepest levels in the fall. Substantial recharge was done in 2005 for water banking projects on the Kern Fan, and may have influenced water levels in these wells.

Aquifer Characteristics

As part of the evaluation, KDSA developed two subsurface geologic cross sections (See Figure 14). The cross sections were developed to assess the nature of deposits above a depth of about 500 feet.

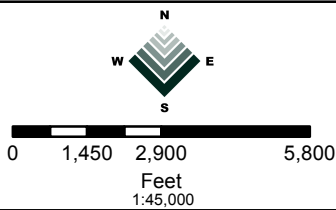
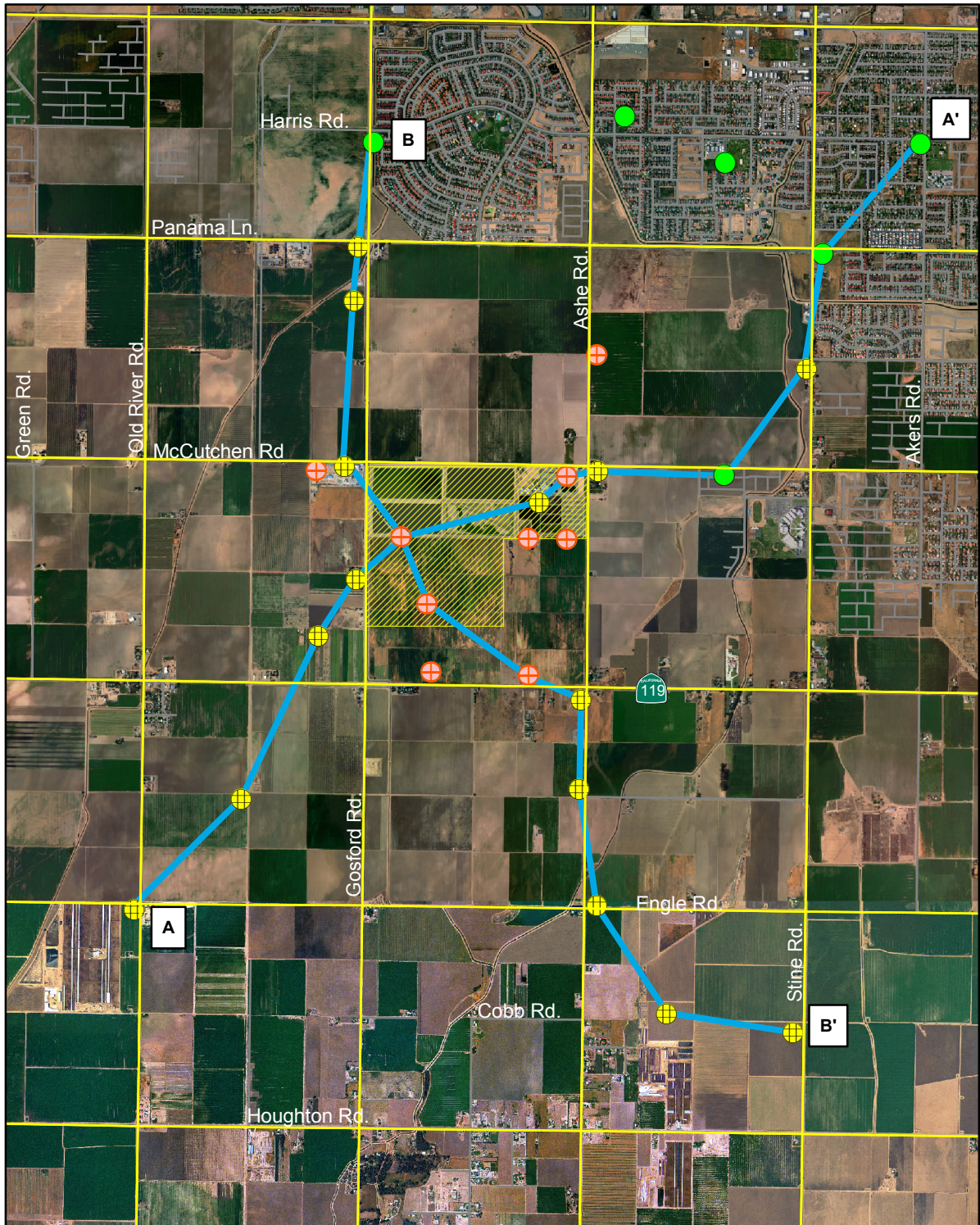
Aquifer tests completed for the WWTP MW-2 (See Figure 15) are representative of shallow coarse-grained strata beneath the WWTP No. 3. Transmissivity for strata above 190 feet in depth was 77,000 gallons per day (gpd) per foot. Transmissivity is the rate at which water of a prevailing density and viscosity is transmitted through a unit width of an aquifer or confining bed under a unit hydraulic gradient. It is a function of properties of the liquid, the porous media, and the thickness of the porous media. Transmissivity for strata between 360 and 540 feet in depth east of the WWTP No. 3 was 195,000 gpd per foot. The hydraulic conductivity of the coarse-grained deposits tapped by this well ranged from about 1,300 to 1,800 gpd per foot, typical of such deposits. Hydraulic conductivity is a coefficient of proportionality describing the rate at which water can move through a permeable medium.






During October through December of 2005, a total of 940.9 million gallons of effluent was sent to the WWTP No. 3 storage ponds. The average amount of water was thus 10.21 MGD, or about

31.3 acre feet per day. The transmissivity for the aquifer was calculated to be 76,000 gpd per foot. The results of the evaluation indicated that most of the percolated effluent moves laterally away from the storage ponds above a depth of about 200 feet (i.e., in the interval tapped by the WWTP No. 3 monitor wells). This indicates that the monitoring well network was appropriately designed to monitor the vertical and lateral migration of the effluent in this zone.

WWTP No. 3 Expansion & Upgrade

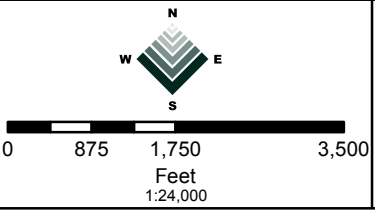
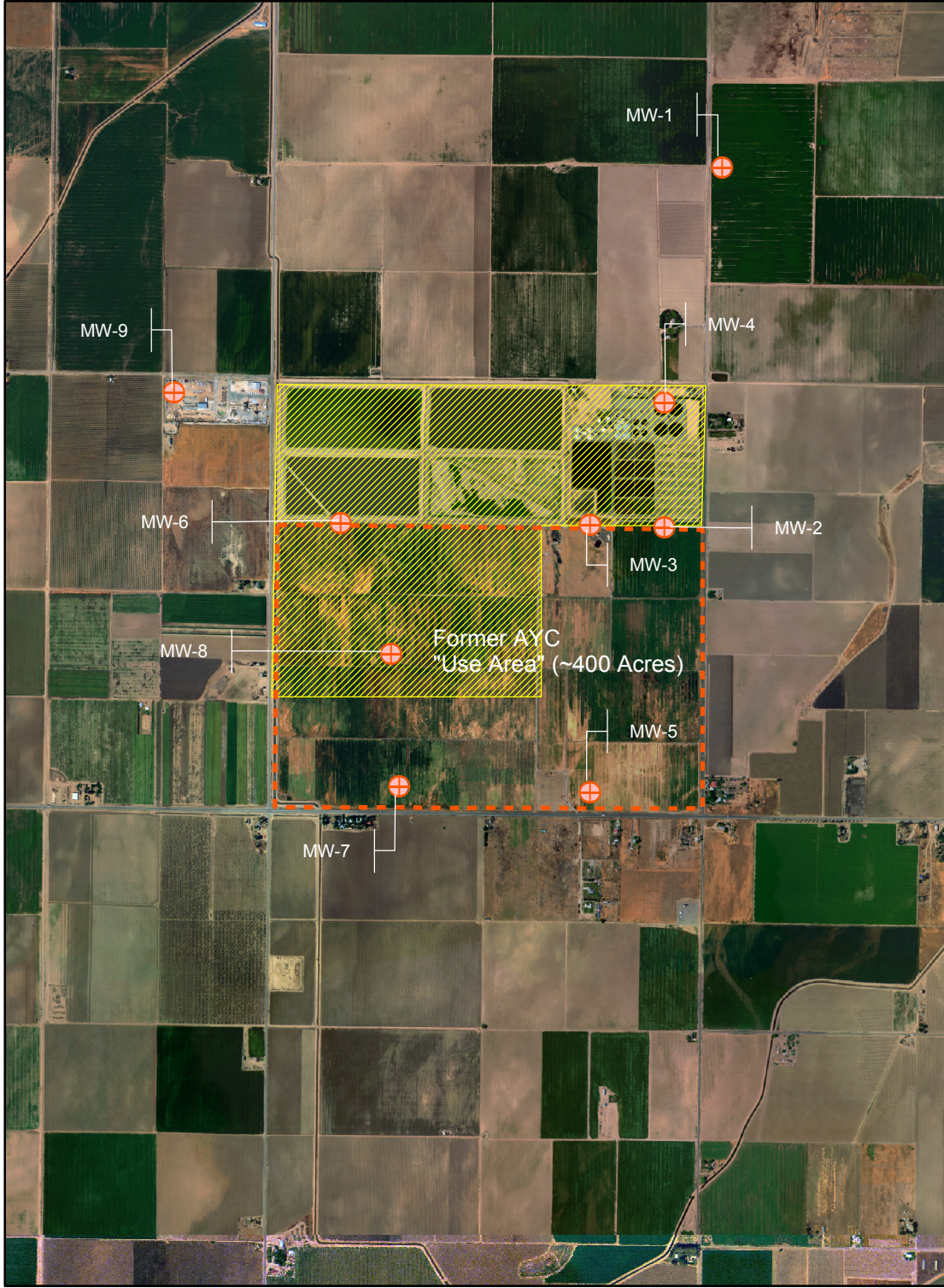
Well Location Map






-  Project Area
-  Geologic Cross Section
-  Monitor Well
-  Public Supply Well
-  Cross Section Well

WWTP No. 3 Expansion & Upgrade

Monitoring Wells



-  Monitor Well
-  Project Area
-  Former Use Area



Quad Knopf
Figure 15

5.6.2 REGULATORY SETTING

Regional Water Quality Control Board (RWQCB)

Wastewater Treatment Plant No. 3 (WWTP No. 3) is regulated by Waste Discharge Requirements (WDR) Order No. 5-01-105, and Special Order R5-2003-0161 modifying Order No. 5-01-105. Per provisions of these orders, the WWTP No. 3 is required to complete reports which set forth a schedule for completing a systematic and comprehensive evaluation of each waste treatment and control component in order to assess the extent to which the Discharger practices and implements Best Practicable Treatment and Control (BPTC's). Such reports are currently underway by the City of Bakersfield and will be submitted pursuant to the WDR schedule. The WDR includes a requirement to meet future treatment standards by April 15, 2010, which is one of the primary objectives of the expansion and upgrade project. The plant processes will be designed to meet the updated Waste Discharge Requirements set by the Central Valley Regional Wastewater Quality Control Board. As part of the project a revised Report of Waste Discharge for the proposed expansion and upgrade of WWTP No. 3 will be submitted to the RWQCB. The City of Bakersfield has worked closely with the RWQCB staff throughout the planning and design phase of the proposed project, and will continue to do so.

In accordance with Provision F.12 of WDR Order No. 5-01-105, the City of Bakersfield will submit a written comprehensive technical evaluation of each component regarding each waste constituent including recommendations for WWTP No. 3 modifications. Further, in accordance with Provision F.13 of the same WDR, the City of Bakersfield, will submit a technical report that reconciled any differences between the results from the work performed to satisfy Provision F.11 and the recommendations of Provision F.12, including all necessary documentation to substantiate that all treatment and control practices were defensible as BPTC.

On July 31, 2006, the RWQCB prepared a letter that evaluated the Kleinfelder November 8, 2005 Report of Analytical Results and the Kenneth D. Schmidt and Associates 21, April, 2006 Soil Sampling Letter Report. The July 31, 2006 letter contains recommendations regarding soil and groundwater conditions at and near the 400-acre area, the northwest portion of approximately 150 acres which is proposed for the percolation ponds. Subsequent to the release of this letter clarifications were prepared that address the recommendations that were made in the July 31, 2006 RWQCB letter (Personal Communication w/Jeff Pyle of the RWQCB). The clarifications address recommendations regarding placement of additional groundwater wells and soil sampling requirements. The City of Bakersfield will comply with these recommendations as per the revised information provided by the RWQCB. The specific recommendations will be outlined in the work plans to be prepared by the City of Bakersfield in coordination with the RWQCB.

Clean Water Act

The Clean Water Act (CWA), 33 U.S.C. § 1251, is the primary federal law governing water pollution. The CWA protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. Permit review is the CWA's primary regulatory tool. The permits regulate:

- discharge of dredged and fill materials, administered by the U.S. Army Corps of Engineers (CWA Section 404),
- construction-related stormwater discharges to surface waters through the NPDES program, administered by the U.S. Environmental Protection Agency EPA (CWA Section 402), and
- activities that may result in the discharges of pollutants into so-called "waters of the United States," (including oceans, bays, rivers, streams, lakes, ponds, and wetlands) (CWA Section 401 – Water Quality Certification) administered by the RWQCB.

The proposed project site does not have any of the above identified waters located within its boundaries. There are no wetlands adjacent to or near the project site and no federally protected wetlands occur on-site. However, the Branch 2 Canal, owned and operated by Kern Delta Water District (KDWD) runs along the western boundary (east side of Gosford Road) of the project area. The Initial Study/Notice of Preparation incorrectly identified this section of the canal as being piped. Although other segments of the Branch 2 Canal are piped, the section that borders the western boundary of the project area is an open canal which has above grade levees. However, the embankment berms to be constructed as part of the project will effectively separate the Branch 2 Canal from the proposed percolation ponds area and act as a barrier to prevent any discharged effluent from entering the Branch 2 Canal. The canal alignment currently has this arrangement where it runs along side the existing percolation ponds.

National Pollutant Discharge Elimination System

The NPDES was established by the Federal Water Pollution Control Act Amendments of 1972 and was expanded under the Water Quality Act of 1987. Most NPDES programs are administered by the states, under the direction of the Office of Wastewater Management of the U.S. EPA. In California, the EPA has delegated the administration of the NPDES program to the State Water Resources Control Board (SWRCB) and the nine RWQCB's. The proposed project study area is under the jurisdiction of the Central Valley RWQCB. Under the NPDES program no point sources of pollutants can be discharged into the waters of the United States without a permit. Permits regulate discharges with the goals of: (1) protecting public health and aquatic life, and (2) assuring that every facility treats wastewater. Permits include site-specific effluent limits, and monitoring and reporting requirements. NPDES permits contain both technology-based and water quality-based effluent limitations. Technology-based limitations are established according to the treatment technology capabilities of individual industrial sectors, or source categories. Water quality-based limitations depend more upon the cleanliness of the waters into which the effluent is discharged.

The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. Most construction projects that disturb more than 1 acre of land are required to obtain coverage under the NPDES General Permit for Construction Activities, which requires the applicant to file a public notice of intent to discharge stormwater and to prepare and implement a SWPPP. The plan includes a site map and a description of proposed construction activities, demonstration of compliance with relevant local ordinances and regulations, and describes the Best Management Practices (BMP's) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants. Post-development compliance with NPDES is regulated by the Kern County Standard Urban Storm Water Mitigation Plan (SUSMP). As one of the permittees under the primary Kern County NPDES permit, projects in the City are subject to the SUSMP requirements (California Water Resources Board 2002.) The SUSMP requirements are met in Bakersfield with implementation of the City's Drainage Manual.

California Code of Regulations (CCR) Title 22

Legislation governing production, distribution, and use of recycled water is contained in California's Health and Safety Code and Water Code. Title 22 is written and administered by the Department of Health Services (DHS).

The DHS has established statewide reclamation criteria in Chapter 3, Division 4, Title 22, CCR, Sections 60301 et seq. (Title 22) for the use of recycled water for irrigation, impoundments, cooling water, and other purposes. The RWQCB has responsibility for reviewing proposed recycled water projects and for issuing water recycling requirements through the waste discharge permit process. DHS has the responsibility for reviewing proposed water recycling projects and for providing comments and/or recommendations to the RWQCB. Title 22 sets bacteriological

water quality standards on the basis of the expected degree of public contact with recycled water. The existing Water Recycling Criteria address treatment requirements for three main types of recycled water uses: landscape irrigation, recreational impoundments, and industrial uses. The treatment requirements are based on the expected degree of human contact with recycled wastewater under each type of use. Treatment requirements are expressed as treatment process requirements (e.g., bio-oxidation, coagulation) as well as performance standards (e.g., disinfection standards and contaminant reduction.)

Title 22 defines requirements for sampling and analysis of the effluent produced at treatment plants; requires the preparation of an engineering report prior to production or use of recycled water; specifies general design criteria for treatment facilities and reliability requirements; and addresses methods of treatment. Title 22 establishes three categories of treated water:

- Primary effluent;
- Secondary oxidized effluent (three levels which differs by the amount of disinfectant required); and
- Tertiary oxidized, coagulated, clarified, and filtered effluent.

As discussed under Section 3.3 Project Characteristics, up to 2 MGD of secondary effluent from the secondary clarifiers will flow to dual or cloth media filters that filter the water for removal of fine particulate matter. Next, the filtered water will be disinfected using sodium hypochlorite or ultraviolet radiation. The tertiary treated wastewater will be conveyed to a storage basin or tank where the water will be retained for use as recycled water for various nearby land application, and plant wash and make-up water.

Article 4 of Title 22 provides for a number of standard conditions that would be required for any project in California that uses disinfected tertiary recycled water for landscape irrigation. The proposed project would comply with these conditions, including:

- Posting signs to inform the public in areas where recycled water is in use. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK" and "AGUA RECLAMADA – NO TOME."
- Prohibition of surface runoff from the area being irrigated as a result of over-application of recycled water, and allowing landscape areas to dry between applications;
- Prohibition on the spray, mist, or runoff from entering dwellings, designated outdoor eating areas, drinking water fountains, or food handling areas. There are no outdoor eating areas, water fountains, or food handling areas within the project area that would require protection measures from the recycled water.
- Confining recycled water to authorized use areas;
- Prohibition of physical connections between recycled water systems and potable water systems (except for when backflow preventors are included);
- Use of purple recycled water distribution and transmission system piping to indicate that it contains recycled water; and
- Other requirements designed to ensure that recycled water use does not adversely affect public health.

A Recycled Water Engineering Report will be submitted to the DHS and to the RWQCB, as part of the permitting process. The Engineering Report will document how the City will comply with a variety of requirements as specified in Division 4, Chapter 3 (Water Recycling Criteria), and Article 7 (Engineering Report and Operational Requirements).

5.6.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to hydrology and water quality. The questions posed in the Checklist have been used as thresholds of significance for this section. Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- (a) Violate any water quality standards or waste discharge requirements?
- (b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- (c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- (d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- (e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide a substantial additional source of polluted runoff?
- (f) Otherwise substantially degrade water quality?
- (g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- (h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- (j) Involve inundation by seiche, tsunami, or mudflow?

5.6.4 PROJECT IMPACTS

Long Term Operational Impact(s)

Impact 5.6a

Historical impacts on Groundwater Quality from Prior AYC Wastewater Discharge

Impact Discussion

The following evaluation was completed in response to a comment letter regarding the impact of wastewater effluent percolation on groundwater quality.

As stated under Historical Operations in the Hydrogeological Setting Section, for approximately two decades, some of the WWTP No.3 effluent was mixed with industrial wastewater from a plant that produced baker's yeast and was recycled on the 400 acres of City property immediately south of the treatment facilities (See Figure 15).

The chemical constituents in the soils in the former AYC wastewater disposal area were determined by Kleinfelder (2005). KSDA interpreted these results. The major issue evaluated was whether or not high levels of some constituents could be present in these soils, and be leached to the groundwater if percolation ponds were developed and used in this area. Of the parameters evaluated, pH was found to be most indicative of an influence of AYC wastewater disposal. Low to moderate ammonia-nitrogen and lower pH values were found in soils in the

eastern half of the former Use Area, compared to background values. KDSA recommended that percolation be conducted only in the west half of the former Use Area, unless some of the soils in the east half could be excavated to percolation. Degraded groundwater is indicated to be present beneath the east part of the former Use Area, and lands adjacent to the former Use Area to the east and south. The exact extent of this degraded groundwater has not been determined.

As shown by the evaluation of the monitor wells (see discussion above on Groundwater/Surface Water Quality), public supply wells and private domestic wells, the chemical quality of shallow groundwater was affected by the former disposal of mixed AYC wastewater. Records indicate that the AYC wastewater was normally mixed with from three to eight times as much WWTP No. 3 effluent. Affected wells include MW-5, MW-7, and off-site domestic well 34-N (T.30S. R.27E.).

WWTP No. 3 effluent percolation has affected the quality of shallow groundwater as documented primarily by chemical analyses of water from MW-2 and MW-3. Overall, there has been little apparent influence on shallow groundwater quality due to percolation from the effluent holding ponds. This is because of the excellent chemical quality of the effluent.

Short-Term Construction Impacts and Long-Term Operational Impacts

Impact 5.6b

Potential Impacts to Groundwater Quality from Expanded Effluent Percolation

Impact Discussion

Bouwer's (1979) approach was used to estimate the maximum mound buildup for the expanded percolation. The existing four ponds with an effective infiltration area of about 100 acres, and the new pond area to the south, with an effective pond area of about 150 acres were used in the evaluation. An average infiltration rate of 0.25 foot per day was used. The rise of the mound in unconfined aquifers below rectangular percolation basins (Bouwer, 1978) for one year of percolation was calculated to be 71 feet. The mound buildup at the center of the pond area would thus be about four times greater than the existing one during winter percolation. Water levels would still be below a depth of about 90 feet beneath the center of the pond area after one year of percolation.

Because the effluent is of excellent chemical quality, the overall impacts of the expanded percolation on groundwater quality would be minimal. The quality of water produced from public supply should not be significantly affected, as they produce water from below a depth of about 300 feet and most are located fairly distant from the WWTP No. 3 ponds.

The expanded percolation project will have two primary impacts on groundwater quality in the area influenced by historical operations. On the short-term, this recharge will cause the degraded groundwater to migrate farther to the southeast from beneath the easterly part of the former Use Area. However, over the long-term, this percolation would mix with and greatly reduce concentrations of constituents at elevated concentrations, such as bicarbonate and chloride, in this degraded groundwater.

Impact 5.6c

Storm Water Related Impacts to Surface Water Quality

Impact Discussion

As discussed in the Notice of Preparation, the discharger currently retains all storm water on site and is therefore not required to develop and implement an Industrial Storm Water Pollution Prevention Plan (SWPPP). The expansion project will be designed to also retain all storm water on site during its operation. However, construction related storm water runoff has the potential to affect surface water quality from increased siltation and turbidity. Mitigation is required to reduce these potential impacts.

5.6.5 CUMULATIVE IMPACTS

With implementation of the mitigation measures discussed below, there would be no incremental impacts to hydrology and water quality from the proposed project in combination with past, present and potentially future projects that would be considered as a cumulatively considerable level.

5.6.6 MITIGATION MEASURES

MM 5.6-1

The City of Bakersfield will install additional monitor well(s) in the project area. The number and exact location of these wells will be determined in the work plan in coordination with the RWQCB. In development of the work plan the City of Bakersfield will take into consideration recommendations made by KDSA and the RWQCB. Background sampling will begin no less than one year prior to the initial disposal and onsite percolation of advanced secondary treated effluent. Any additional well(s) would be added to the quarterly monitoring program. Careful placement of additional monitor wells will help ensure that the advanced secondary treated wastewater effluent is appropriately disposed of in accordance with all regulatory requirements. In the event that the sampling shows an elevated level or a sudden rise in the concentration in any of the constituents that are being monitored for compliance with a standard, such finding(s) will be reported to the RWQCB and any corrective actions determined necessary in consultation with the RWQCB will be implemented accordingly. This would help reduce any impacts due to onsite percolation to a level of less than significant. Additional monitor well(s) construction, sampling, analysis and reporting shall be in accordance with the proposed project's work plan, and subsequently issued revised Waste Discharge Requirements, and associated Monitoring and Reporting Program. Inspections and monitoring will be conducted by the WWTP No. 3 staff/authorized agents, or RWQCB as appropriate.

MM 5.6-2

As recommended by KDSA and the RWQCB, during construction contaminated soil (primarily located on the east half of the project area) will be removed to a depth of no less than 5 feet bgs or as will be determined in the work plan to be developed by the City of Bakersfield in coordination with the RWQCB. As discussed above under impact 5.6b, Kleinfelder and KDSA showed that the soil in the former Use Area was influenced by the past irrigation with AYC wastewater. The removal of the contaminated soil will prevent contaminants such as TOC and TKN from migrating towards and impacting groundwater quality. Soil sampling, analysis and reporting shall be in accordance with the proposed project's work plans. Inspections and monitoring will be conducted by the WWTP No. 3 staff/authorized agents, or RWQCB as appropriate.

MM 5.6-3

Any private well down gradient and within a quarter mile of the east half of the former Use Area will be monitored on a semi-annual basis, if such monitoring is requested by the owners. As this area is rapidly urbanizing, such monitoring will cease when the wells are no longer in use. Monitoring of private wells would reassure those owners who request such monitoring that the implementation of the proposed project will not result in an adverse affect on water quality. Monitoring of private wells shall be in accordance with the proposed project's sampling and reporting program. Inspections and monitoring will be conducted by the City of Bakersfield Public Work's Department as appropriate.

MM 5.6-4

If well water quality of any private well down gradient and within a quarter mile of the east half of the former Use Area is indicated to be degraded by historical use, an alternative source of

potable water would be made available by the City of Bakersfield. This mitigation measure will assure that any owner with a private well located down gradient and within a quarter mile of the east half of the former Use Area has a guaranteed source of uncontaminated water. This measure will be implemented pending results of the semi-annual monitoring requirement which will be implemented by the City of Bakersfield only if requested by the owner(s).

MM 5.6-5

As noted in MM 5.6-2, contaminated soils will be removed to a depth of no less than 5 feet bgs or as determined in the work plan. The excavated soils will be used on the outer embankment only of the new percolation ponds and in the perimeter facility landscape berms to be constructed around the frontage of the facility. Measures will be taken to ensure that the excavated soils used in the outer embankment of the new percolation ponds will not be mixed with the clean soils that will make up the inner slope of the embankment perimeter. This mitigation measure allows for the beneficial use consistent with applicable regulations of the excavated contaminated soils that otherwise would have been required to be disposed of at an approved waste disposal site. The construction of the percolation pond embankments and perimeter landscape berms following soil excavation will be subject to regular inspections by the WWTP No. 3 staff as appropriate. The inspections will be performed in accordance with the work plan as requested by the RWQCB.

MM 5.6-6

All components of the expansion project will be designed to comply with specific operational, maintenance, and contingency plans that will be discussed in the Recycled Water Engineering Report. All applicable Title 22 recycled water requirements to protect the public health and safety shall be implemented during project construction and operation. Monitoring and reporting of operations will be in accordance with the requirements established by the amended WDR's Monitoring and Reporting Program. Regular inspections by the RWQCB will be performed to ensure compliance with the Title 22 requirements as provided in the amended WDR.

MM 5.6-7

The City of Bakersfield, through the prime construction contractor(s), will develop and implement a Construction SWPPP during construction activities in order to be covered under the General Permit for Discharges of Storm Water Associated with Construction Activity. The City will adhere to all city, county, state, and federal requirements pertaining to storm water. With the development and implementation of a SWPPP, less than significant impacts are expected.

5.6.7 SIGNIFICANCE AFTER MITIGATION

The proposed project would not result in any significant environmental impacts to water quality as indicated by the ultimate chemical quality of the effluent. Implementation of the proposed project will result in a better quality effluent than is presently possible with the current facilities. The disposal/reuse of the treated effluent will be managed in a manner to not adversely effect surface and groundwater quality or supply. Furthermore, the quality of water produced from public supply wells should not be significantly affected as these wells tap water from below a depth of about 300 feet and most are located fairly distant from the WWTP No. 3 ponds. The analyses regarding water quality finds that the project will not degrade water quality, contaminate a public water supply, substantially degrade or deplete groundwater resources, interfere substantially with groundwater recharge, or cause substantial flooding, erosion or siltation. Furthermore, the RWQCB concluded that, "If the results of the expanded plant are similar to current operations, the impact to groundwater from constituents left in soil by historical discharge of effluent blended with wastewater from the former AYC plant should be minimal."(RWQCB Letter, 31 July, 2006).

Cumulative Impacts

With implementation of the mitigation measures discussed above, there would be no incremental impacts to hydrology and water quality from the proposed project in combination with past, present and potentially future projects that would be considered as a cumulatively considerable level.

5.7 NOISE

The purpose of this section is to provide information on the project's regulatory and environmental issue settings, project related impacts, potential mitigation measures, potential cumulative impacts, and any residual impacts upon implementation of mitigation measures in order to provide an overall assessment of the project's noise related issues. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1.

5.7.1 NOISE SETTING

The primary sources of noise in the project area include the existing treatment plant, industrial users to the west of the project site, agricultural machinery, and traffic on adjacent arterial roads. Currently on site are several earthen embankments which are used to contain the existing storage ponds. These embankments provide noise attenuation to the west of the plant facilities. Therefore, noise emanating from the plant westward is attenuated to some extent by these embankments.

Existing Noise Sources

Existing Plant

The current WWTP No. 3 complies with all applicable City noise standards. Noise generated from the site is generated from existing blowers, grinders, screens, and on-site equipment such as emergency backup generators, as well as trucks which enter and exit the site as part of daily operations. Currently, the project is surrounded by agricultural development which is not considered a sensitive receptor for noise. As indicated in the 1987 EIR completed for WWTP No. 3, no noise impacts were identified. Further, no noise complaints have been made in regards to the existing plant operations.

Industrial Users

There are two industrial users adjacent to the northwest corner of the proposed project. These industrial users specialize in the creation and distribution of cement and associated products. Such industrial uses can create significant noise from batch plants, heavy equipment, vibratory mixers, ventilation systems and large trucks used for the transportation of raw materials and finished product. According to the Federal Highway Administration (FHWA) Roadway Construction Noise Model, a typical small concrete batch plant has a decibel A-weighted (dBA) level of 83, a vibratory concrete mixer a dBA of 80, a ventilation fan a dBA of 85, and large trucks an average of 82-85 dBA.

Agricultural Machinery

Noise can be created by agricultural machinery from their internal combustion engines, as well as their activities such as harvesting, plowing, etc. Since the majority of land located in the immediate vicinity of the project has been approved or is proposed for development, it is expected that such agricultural activities will cease before or shortly after the completion of the proposed project.

Traffic

The project is surrounded on three sides by City of Bakersfield arterial roadways and one side by a State Designated Highway. Noise from these roadways will likely increase in the future due to the increasing development of southwest Bakersfield. The Metropolitan Bakersfield General Plan Noise Element identifies arterial roadways and State Highway 119 as major noise sources within the General Plan area. The Metropolitan Bakersfield General Plan also sets standards for allowable levels of noise, which is generally 65dB Community Noise Equivalent Level (CNEL) for sensitive land uses.

Sensitive Receptors

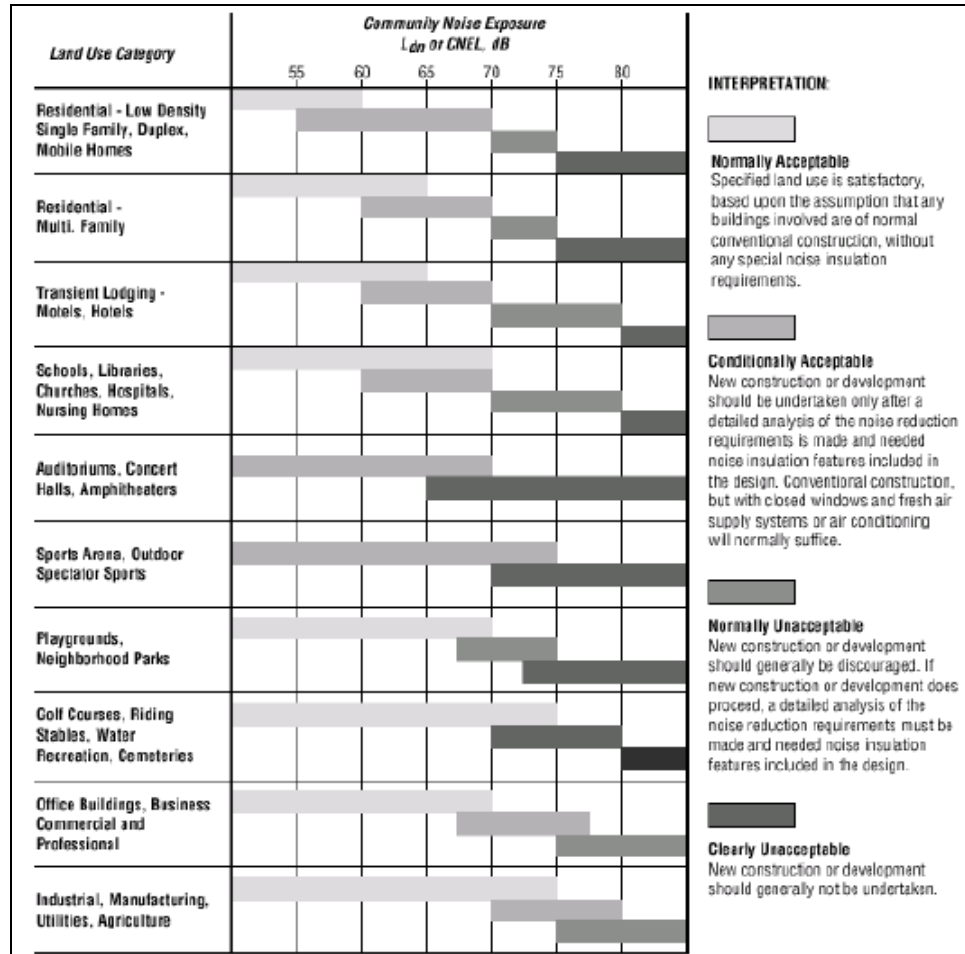
There are currently only two residences that can be considered sensitive receptors located within one-quarter mile of the proposed project.

5.7.2 REGULATORY SETTING

Metropolitan Bakersfield General Plan (MBGP)

Per California Government Code Section 65302 (f), a local jurisdiction is “required to prepare statements of policy indicating their intentions regarding noise and noise sources, establish desired maximum noise levels according to land use categories, set standards for noise emission from transportation facilities and fixed-point sources, and prepare a program for implementation of noise control measures. Noise Elements are prepared in accordance with Guidelines for the Preparation and Content of Noise Elements of the General Plan published by the California Office of Noise Control in 1976” (KCGP, 2004). The proposed project is under the jurisdiction of the Metropolitan Bakersfield General Plan through the City of Bakersfield, and is therefore, required to abide by the goals, policies, and procedures indicated therein. The Metropolitan Bakersfield General Plan prescribes a sensitive receptor maximum external noise of 65 dB CNEL. Sensitive receptors are defined in the MBGP as schools, hospitals, rest homes, long term medical or mental health facilities, parks and recreation areas, convalescent and acute care hospitals, and residences. Further, compatible noise levels and uses can be found in Figure VII-1 of the MBGP, which breaks down uses and decibel levels into categories; normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable as shown in Table 5.7A, below.

Table 5.7A
Land Use Compatibility for Community Noise Environments



Source: Figure VII-1 of the Metropolitan Bakersfield General Plan, 2002, and Office of Planning and Research, Appendix C of the CEQA Guidelines, October 2003.

City of Bakersfield Municipal Code

According to Section 9.22.030 of the City of Bakersfield Municipal Code “It is unlawful for any person to willfully make or continue, or allow to be made or continued, any loud, unnecessary noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to persons residing within one thousand feet of the noise source.” It further requires that activities associated with construction activities must only create noise between the hours of 6:00am and 9:00pm, Monday through Friday, and 8:00am and 9:00pm, on Saturday and Sunday. Further, the City Noise Ordinance prescribes the following limits on stationary noise sources within the City limits.

**Table 5.7B
Residential Property Line Standards**

Time Period	7:00am to 10:00 pm (dBA)	10:00 pm to 7:00 am (dBA)
No more than 30 minutes	55	50
No more than 15 minutes	60	55
No more than 5 minutes	65	60
No more than 1 minute	70	65
Not to be exceeded	75	70

All other City specific noise standards are set forth by the MBGP.

City Policy

Per a City Planning Department Policy Memo, drafted and distributed on June 16, 2004, a one-quarter-mile buffer guideline was instituted for residential development surrounding the active areas of the treatment plant. Although this policy memo was written primarily to proactively address odor issues near the plant, it is also applicable in terms of noise attenuation.

5.7.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to Noise. The questions posed in the Checklist have been used as thresholds of significance for this section. Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- The project causes exposure of person to or generation of noise levels in excess of standards established in the local general Plan or noise ordinance, or applicable standards of other agencies.
- The project causes the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
- The project causes a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- The project causes a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- The project is located within an airport land use plan or within two miles of public airport or public use airport, and exposes people residing or working at the proposed project to excessive noise levels.
- The project is located within the vicinity of a private airstrip, and would expose people residing or working at the proposed project to excessive noise levels.

5.7.4 PROJECT IMPACTS

Short-Term Construction Impacts

Impact 5.7a

Grading and construction noise generated during the upgrade and expansion of the plant has the potential to create significant noise related impacts.

Impact Discussion

Construction activities which will occur on-site will likely include grading, excavation, and building construction. Such activities will be temporary and sporadic in nature over a period of several years, but will still have the potential to exceed ambient noise standards as set forth by the City of Bakersfield. Construction and site preparation have the potential to impact noise levels on nearby roadways due to increased construction related traffic flow. Heavy construction equipment will only impact local roadways upon construction commencement and then cease upon completion. Other related traffic may consist of but are not limited to, construction crew commuting, material delivery, construction waste trucks, and water trucks. This potential noise impact is temporary in nature and is not likely to produce noise levels on surrounding roadways which would exceed City standards.

Construction of the proposed project will likely use (but is not limited to) the following equipment: earthmovers, backhoes, compactors, clam shovels, cranes, bull dozers, dump trucks, excavators, pavers, scrapers, tractors, and water trucks. All such equipment contains internal combustion engines which create noise as well as noise created by their uses (i.e. excavation, dumping, scraping, etc.) As indicated in the City of Bakersfield Gosford-Panama Environmental Impact Report (2005, June), typical construction equipment noise levels are as follows:

**Table 5.7C
Typical Construction Equipment Noise Levels**

Type of Equipment	Maximum Level of dBA @ 50 feet
Scrapers	88
Bulldozers	87
Backhoe	85
Pneumatic	85

The most noise-intensive period will likely be during grading of the site. During such activities it is common for up to three pieces of large equipment to be used concurrently. An estimated noise level from three pieces of equipment (i.e. grader, dozer and haul truck) could have a worst case noise level of 92 dBA at 50ft from the noise source (City of Bakersfield, 2005). Average sound attenuation (absent intermediate structures) generally occurs at a 6 decibel level every doubling of distance (i.e. 20 ft, 40, ft, 80 ft, etc.). Therefore, at approximately 1,000 ft to 1,100 ft from the noise source, sound associated with construction would be within outdoor allowable noise levels. As a result, any sensitive receptors located within approximately 1,000 ft to 1,100 ft of the activity could be impacted by noise levels above allowable City standards. There is one existing residence to the north located within approximately 1,000 ft to 1,100 ft of the project boundaries. However, this residence will be buffered from construction activities by several existing buildings on site. Further, since the majority of construction activities will be south of the existing facilities, this residence becomes located outside the approximately 1,000 ft to 1,100 ft zone of the construction activities noise sources and therefore should not be affected by noise associated with such activities. Further, there is one residence located to the east of the project site. This residence is also currently buffered by existing facilities, and lies outside 1,000 ft to 1,100 ft of the construction activities listed above. Although noise levels at these residences may be below acceptable levels, in order to ensure compliance with City standards, mitigation measures will be required. However, future development of the surrounding areas, if completed and occupied prior

to the completion of proposed project construction, could cause the project to have an effect on sensitive receptors. If such activity does not exceed levels set forth in the MBGP and only occurs within hours set forth in the City Noise Ordinance, then no construction noise impacts will result from the project. Therefore, grading and construction noise impacts are considered less than significant.

Long-Term Operational Impacts

Impact 5.7b

Operational noise generated from additional aeration basin blowers, internal combustion engines used in the co-generation facility, and the additional four emergency back-up generators have the potential to exceed City noise standards and create significant noise related impacts.

Impact Discussion

The proposed project will include additional aeration basin blowers, internal combustion engines used in the co-generation facility and backup generators for emergency conditions where electrical power can not be obtained through traditional methods. New blowers may create noise by the injection of air by fine bubble air diffusers within the unit which force air into the treated wastewater in order to enhance microorganism breakdown of solids.

In the event that the treatment plant should lose power, the proposed project will activate emergency backup generators in order to keep any interruptions to wastewater service at a minimum in order to protect public health and safety. The use of these generators, although temporary in nature, has the potential to create temporary noise impacts.

Additionally, internal combustion engines which will be used in the upgraded co-generation facility have the potential to create nuisance noise which when combined with other operational noise on the project site could cause the plant to exceed City noise standards.

However, as indicated in the project description the following design features will help alleviate noise impacts from the project site.

- g. Landscaping, which will include a combination of trees and shrubs, and approximately 6 feet high landscaped berms will be incorporated into the project to provide visual screening and mask the Treatment Plant from the future anticipated commercial and residential areas, to be constructed adjacent to the Plant on McCutchen, Ashe, and Gosford Roads (See Figures 8 & 9).
- j. In order to attenuate noise associated with the project aeration basin blowers will be contained within a concrete block building and all ventilation opening for air intake and exhaust will be baffled to reduce exterior noise generation; IC Engines in the co-generation facilities will be contained within a concrete block building, and any ventilation opening for air intake and exhaust will be baffled to reduce exterior noise generation; and emergency backup generation will be contained by a sound proofed enclosure of similar design to that found on the existing emergency back-up generator located on site."

Implementation of these design features coupled with regulatory requirements cause long-term operational noise impacts to be less than significant.

5.7.5 CUMULATIVE IMPACTS

Standards for cumulative noise impacts, as set forth in the Metropolitan Bakersfield General Plan, Page VII-13, are as follows:

A significant increase in ambient noise level affective existing noise-sensitive land uses (receptors), requiring the adoption of practical and feasible mitigation measures, is deemed to occur where a project will cause:

An increase in ambient noise level of 1dB or more over 65dB CNEL, where the existing ambient level is 65dB CNEL or less;

Or

The ambient noise level is less than 60dB CNEL and the project increases noise levels by 5dB or more;

The ambient noise level is 60 to 65dB CNEL and the project increase noise levels by 3dB or more;

The ambient noise level is greater than 65 dB CNEL and the project increase noise levels by 1.5 dB or more.

Construction activities on the project site are temporary and localized to the project area. Therefore, construction activities do not have the potential to create a cumulative noise impact.

Impact 5.7c

Operational noise through the construction of aeration basin blowers, internal combustion engines in the co-generation facility, and four new emergency backup generators have the potential to contribute to overall increases in ambient noise levels in the project vicinity.

Impact Discussion

As indicated in Impact 5.7b, new machinery which will be installed as part of the proposed project have the potential to create operational noise impacts. As some of this machinery will not be replacing existing machinery, but will be in addition to existing machinery, overall noise emanating from the project site will increase. Such noise will likely increase the overall ambient noise level in the immediate project area. It should be noted that there have been no noise complaints registered from the operation of the existing treatment plant facility as the major sources of noise generating equipment are well interior to adjacent land uses. The expanded facilities will also maintain these setback's from adjacent land uses. Further, the one-quarter-mile odor buffer for adjacent residential uses will also provide additional distance to attenuate sound from affecting future sensitive receptors in the project vicinity. The implementation of the design features listed in the project description and discussed in Impact 5.7b, coupled with the existing buffer areas surrounding noise sources on the project site, reduce the potential for cumulatively considerable noise levels to occur as a result of the proposed project. Therefore, cumulative noise impacts are considered less than significant.

5.7.6 MITIGATION MEASURES

MM 5.7-1

Prior to issuance of grading and construction permits, the contractor must submit documentation and/or specifications of the following:

- All construction equipment and vehicles used onsite are operating properly and incorporate all appropriately maintained mufflers and sound dampening apparatuses.
- Construction schedules which indicate construction activities will be performed within noise ordinance requirements
- All stockpiling of materials and construction vehicle staging and/or stacking areas will be located away from any identified sensitive receptors

The contractor shall ensure that the foregoing measures continue to be implemented during site construction activities. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.

MM 5.7-2

During construction, the contractor shall situate all stationary construction equipment on the project site so that noise emitting objects or equipment face away from any potential sensitive receptors. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.

5.7.7 SIGNIFICANCE AFTER MITIGATION

Short-Term Construction Impacts

Impact 5.7a

Providing records that all equipment used on site is maintained per all applicable standards and situating equipment such that noise is directed away from sensitive receptors will help the project prevent any significant noise impacts during construction activities. Therefore, implementation of mitigation measures 5.7-1. and 5.7-2, will reduce temporary construction impacts to a less than significant level.

Long-Term Operational Impacts

Impact 5.7b

As indicated in the impact discussion above, implementation of design features which attenuate noise from the project coupled with existing buffer areas, cause noise generated from operational activities to be minimal. Therefore, any noise which may leave the project area boundaries constitutes a less than significant impact.

Cumulative Impacts

Impact 5.7c

As indicated in the cumulative impacts section above, existing design features which help to muffle noise from the proposed project coupled with existing buffer areas, will bring long-term operational and cumulative noise levels to a level not considered cumulatively considerable in combination with past, present and potential future projects per the MBGP. Therefore, cumulative impacts will be less than significant.

5.8 POPULATION AND HOUSING

This section discusses the existing population and housing setting within the General Plan area, and evaluates the potential impacts related to growth-inducement and housing stock within the Metropolitan Bakersfield General Plan area. Projections and estimations used in this section were primarily determined by using Kern Council of Governments (COG) and data from the most recent Metropolitan Bakersfield General Plan. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1.

5.8.1 POPULATION AND HOUSING SETTING

The Metropolitan Bakersfield General Plan area had a population of 402,100 in 2001 (MBGP, 2002, II-5) and has estimated its expected population in 2020 at 520,500 people (MBGP, 2002). According to the most recent population projections, the Metropolitan Bakersfield General Plan area as of 2006 already had 456,600 residents. At such a rate, the Metro area will reach its original projections of 520,500 people by the year 2012 (Kern EDC, 2003) rather than the predicted 2020 date. Much of this growth has been occurring west of State Highway 99, which is the general eastern boundary of the WWTP No. 3 service area (See Figure 2). As population continues to burgeon, purchase and development of land continues spreading westward toward the metropolitan general plan area boundary. As such growth continues, even if the rate at which it does decrease, the service area for WWTP No. 3 will continue to grow and additional capacity will be required. Further, as indicated in the MBGP (MBGP, Housing Element, P. 55), existing housing stock will not accommodate projected demands, therefore, additional housing is required. This phenomenon discussed in the MBGP has already been realized within the Metro area. Although in the first half of 2006 the rate of building permit issuance has decreased, it is still continuing at a steady pace. Therefore, new houses for this increase in population will continue to add to the overall housing stock located within the Metropolitan Bakersfield General Plan area and hence, continue to increase pressure on public services such as a wastewater treatment services.

In addition, the City recently (2005) amended its Sphere of Influence, to include areas not included in the 2004 Sphere of Influence. Therefore, the City is required to amend existing plans and develop new plans for the provision of public services to these new areas, in order to accommodate increases in population and housing and appropriately pre-plan for future annexation development due to the expansion of the Sphere of Influence.

5.8.2 REGULATORY SETTING

Cities and Counties are governed by the State Housing and Community Development Department (HCD) which determines population estimates for various counties and associated housing allotments. These allotments are passed down and parsed out to the local entities via the local Council of Governments (COG) for inclusion in their mandatory housing element which is part of the local entity's General Plan, and is reviewed and approved by the local COG and HCD. For this project the agency which allots housing share is Kern COG. To determine population estimates the HCD uses Department of Finance figures for regional population projections. Such projections and associated housing allotments are then reviewed every five years in order to provide for any needed revisions. Therefore, the project will be subject to City of Bakersfield General Plan Goals, Policies, and Implementation measures regarding housing and population.

5.8.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to population and housing. The questions posed in the Checklist have been used as thresholds of significance for this section. Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- The project induces substantial population growth in an area, either directly or indirectly.
- The project displaces substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- The project displaces substantial numbers of people, necessitating the construction of replacement housing elsewhere.

5.8.4 PROJECT IMPACTS

Long-Term Operational Impacts

Impact 5.8a

The project may induce substantial population growth in the area, either directly or indirectly.

Impact Discussion

The proposed project is the expansion and upgrade of a wastewater treatment plant from 16 MGD to 32 MGD.

The proposed project was reviewed to determine whether the provision of additional treatment capacity could potentially remove barriers to development, consequently inducing growth. This analysis of capacity versus demand was completed by Quad Knopf, Inc. (2006). The analysis used eight of the largest projects in the service area of the treatment plant and determined, using net acreage, the projected wastewater treatment capacity needs of these projects upon build-out (See Figure 16). Such calculations were determined by using project specific land use acreages and applying the City of Bakersfield Sewer Master Plan Calculations for treatment capacity needs. Upon completion of the study the total net demand in gallons per day of these eight large projects was approximately 16 MGD. Such a demand would consume all of the proposed increase in sewer treatment capacity, therefore, not inducing growth but rather responding to the existing need for such services. Moreover, this assessment viewed in conjunction with the cumulative projects listed in Section 4.0 of this document, such as the tract maps and smaller GPA/ZC/Annexation/EIR projects, only serve to further support the conclusion that the WWTP No. 3 Expansion and Upgrade is not inducing growth but rather responding to it.

In addition, development of the proposed project is considered beneficial planning in order to provide needed public services to customers within the service area. The proposed project also provides for new technology to be added to the plant for energy efficiency and to meet 2010 Regional Water Quality Control Board requirements, in turn improving the area water quality. Moreover, the proposed upgrade of the WWTP No. 3 plant will help alleviate any potential for plant upset due to overloading caused by increased wastewater creation from increased populations within the service area.

5.8.5 CUMULATIVE IMPACTS

As indicated above, since the project will not have a growth inducing effect and the project does not provide for any increases in population and hence, associated housing, impacts of the proposed project are not considered to be cumulatively significant.

5.8.6 MITIGATION MEASURES

As indicated under the discussion of Impact 5.8a and in the cumulative impacts section, the proposed project is not growth inducing and therefore, requires no mitigation measures.

5.8.7 SIGNIFICANCE AFTER MITIGATION

Long-Term Operational Impacts

Impact 5.8a

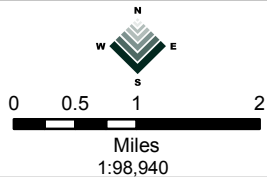
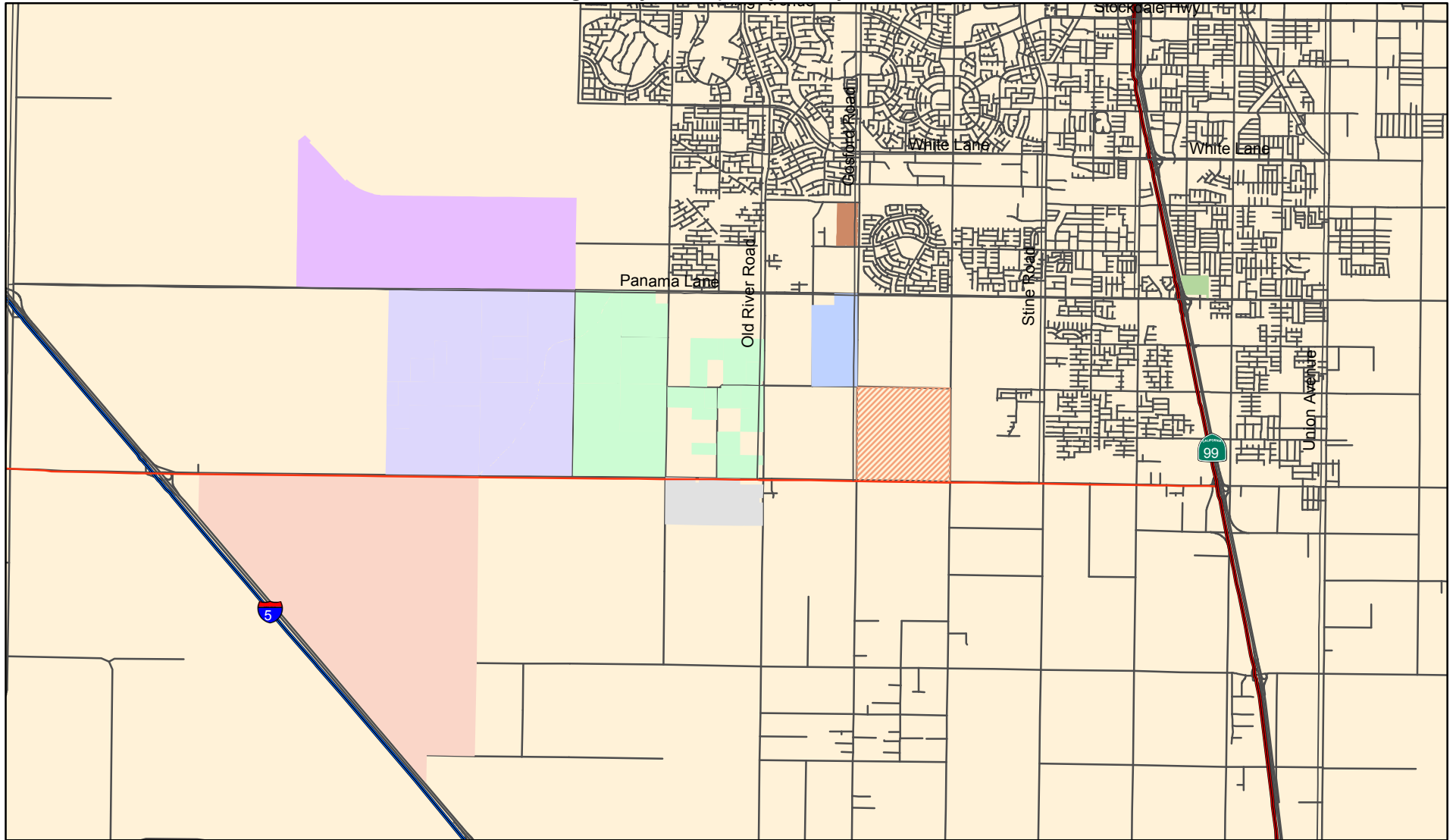
As indicated in the impact discussion above, the proposed project will not create or be the cause of any project specific impacts. Therefore, no mitigation was required, and potential impacts remain less than significant.

Cumulative Impacts

As indicated above, since the project will not have a growth inducing effect and the project does not provide for any increases in population and thus, associated housing, impacts of the proposed project in combination with past, present, and potential future projects are not considered to be cumulatively significant, and therefore, require no mitigation measures.

Wastewater Treatment Plant No. 3 - Expansion & Upgrade

Large Project Capacity Analysis



- | | | | |
|------------------|-----------------|---------------------------|-----------------|
| — Road | WWTP No. 3 | Flying Seven Project Area | Gateway |
| — Highway | Old River Ranch | McAllister Ranch | Walmart-Panama |
| — State Route 99 | Gosford-Panama | Montecito | Walmart-Gosford |
| — Interstate 5 | | | |

5.9 TRANSPORTATION AND TRAFFIC

This section discusses the existing traffic associated regulatory setting within the project area, and evaluates the potential traffic impacts for both project specific and cumulative conditions as well as mitigation measures to mediate any of the identified impacts. Discussion in this section is based primarily on the "Traffic Study for the Wastewater Treatment Plant #3 Expansion and Upgrade at Ashe Road and McCutchen Road, Bakersfield, California" completed by Ruettinger's and Schuler Engineers in August of 2006 (See Appendix 15.7). This section also utilizes Metropolitan Bakersfield General Plan (2002) standards and requirements. Discussion in this section is limited to those effects found to be potentially significant and/or less than significant with mitigation as indicated in the Initial Study or in review comments provided on the Initial Study. Discussion of impacts found to be less than significant in the Initial Study/NOP can be found in Section 10.0 of this document. In addition, the Initial Study can be found in Appendix 15.1. Concerns raised by commenting agencies and the public in response to the Notice of Preparation (NOP) for this project will also be addressed.

5.9.1 TRAFFIC SETTING

The area used for the traffic study analysis used the roads that immediately surround the project area. These road segments are Ashe, Gosford, McCutchen Roads, and Highway 119, and are described as follows.

Ashe Road is designated as an arterial and currently operates as a two-lane rural road south of Panama Lane and as a fully improved arterial north of Panama Lane. Within the study area, Ashe Road provides access to residential, industrial, and commercial areas north of Panama Lane and agricultural areas south of Panama Lane.

Gosford Road is designated as an arterial and provides access to agricultural, residential, commercial and industrial land uses within the study area. It currently exists as a two-lane rural road south of Panama Lane and at various stages of widening and improvement adjacent to development from Panama Lane to District Boulevard. Gosford Road operates as a six-lane facility north of District Boulevard and continues north of Stockdale Highway as Coffee Road. Gosford Road/Coffee Road is one of three arterials which cross the Kern River west of State Route 99, and therefore, serves as a major north-south corridor in the western metropolitan Bakersfield area.

McCutchen Road extends west from Gosford Road to Buena Vista Road midway between McKee Road and Berkshire Road along the westerly extension of the Hosking Avenue alignment. It is designated as an arterial and currently exists as a two-lane rural road providing access to agricultural areas. Based on current and anticipated future development within the study area, it was assumed for the purposes of this study that a westerly extension of McCutchen Road from Buena Vista Road would be completed by the year 2030 in accordance with the General Plan.

State Route 119 (Taft Highway) extends east from the City of Taft, interchanges with Interstate 5 and runs through the southern metropolitan Bakersfield area. It is designated as an expressway west of State Route 99 and as an arterial east of State Route 99. Within the project vicinity, it exists as a two-lane roadway with paved shoulders and provides access to agricultural, commercial and residential land uses.

The intersections used for the project study were the intersections of the above described road sections. Three of the intersections (Gosford/McCutchen, Ashe/McCutchen, Ashe/119) are currently unsignalized. The intersection of Gosford Road and Highway 119 is signalized. A capacity analysis per the Transportation Research Board's Highway Capacity Manual was completed for these intersections and revealed the following Levels of Service at each intersection currently and in the future without the completion of the proposed project.

**Table 5.9A
AM Peak Hour Level of Service**

#	Intersection	Movement	2006	2010	2030
1	Gosford Rd & McCutchen Rd	EB	B	D	F
		WB	-	E	F
2	Ashe Rd & McCutchen Rd	EB	-	C	F
		WB	-	B	F
3	Gosford Rd & Taft Hwy		B	B	F
4	Ashe Rd & Taft Hwy	NB	C	C	F
		SB	D	D	F

Further, signal warrant analysis was completed per the Federal Highway Administration's "Manual on Uniform Traffic Control Devices for Streets and Highways" 2003 Edition. Analysis indicated existing and projected future signal warrants without the proposed project as follows.

**Table 5.9B
Traffic Signal Warrants- AM Peak Hour**

#	Intersection	2006 Warrant Met	2010 Warrant Met	2030 Warrant Met
1	Gosford Rd. at McCutchen Rd	No	Yes	Yes
2	Ashe Rd at McCutchen Rd	-	No	Yes
4	Ashe Rd at Taft Hwy	No	Yes	Yes

In an effort to help alleviate future traffic congestion in the project area and in addition to the payment of RTIF fees, the proposed project will construct improvements along Gosford, Ashe, and McCutchen Roads to the centerline along the project's frontage as part of the project design (See Figure 9). Such improvements will include the creation of new lanes in these areas in accordance with City General Plan Guidelines and standards.

5.9.2 REGULATORY SETTING

The City of Bakersfield, per Implementation measure 28 of the MBGP (2002), has set a level of service standard for City roadways at "C". The following tables outline how Levels of Service are determined.

**Table 5.9C
Level Of Service Criteria Unsignalized Intersection**

Average Control Delay (sec/veh)	Level of Service	Expected Delay to Minor Street Traffic
= 10	A	Little or no delay
> 10 and = 15	B	Short traffic delays
> 15 and = 25	C	Average traffic delays
> 25 and = 35	D	Long traffic delays
> 35 and = 50	E	Very long traffic delays
> 50	F	Extreme delays

**Table 5.9D
Level Of Service Criteria-Signalized Intersections**

Volume/Capacity	Control Delay (sec/veh)	Level of Service
< 0.60	= 10	A
0.61 - 0.70	> 10 and = 20	B
0.71 - 0.80	> 20 and = 35	C
0.81 - 0.90	> 35 and = 55	D
0.91 - 1.00	> 55 and = 80	E
> 1.0	> 80	F

In order to facilitate the required LOS C levels on roads, the City, in conjunction with Kern County, implemented the Regional Transportation Impact Fee Program for implementation within the Metropolitan Bakersfield General Plan area. As indicated in the Metropolitan Bakersfield General Plan (2002) Circulation Element, the City of Bakersfield and Kern County wanted to adopt a metro area impact fee schedule which would “require new development and expansion of existing development to pay their pro-rata share of the cost of expansions in area-wide transportation facilities and services which it necessitates” (Policy 39).

Consequently, the City of Bakersfield adopted the Transportation Impact Fee Ordinance, which is purposed “to regulate the use and development of land so as to assure that new development bears a proportionate share of the cost of capital expenditures necessary to provide a regional transportation system consistent with the Circulation Element of the Metropolitan Bakersfield General Plan” (Municipal Code, Chapter 15.84). The Ordinance further explains that “Funds collected from transportation impact fees shall be used for the purpose of capital improvements to transportation facilities associated with the Regional Transportation Facilities List. Such improvements shall be of the type as are made necessary by the new development. No funds shall be used for periodic or routine maintenance. Funds shall be used exclusively for capital improvements within the city or for projects outside the city but within the Bakersfield Metropolitan General Plan area which are a direct benefit to the city” (Municipal Code, Section 15.84.070 (A)). Funds are then used on items listed on the Transportation Impact Fee facilities List which is compiled by the City and generally includes, but is not limited to, the construction and expansion of roads, bridges, culverts, and signal lights. Items on this list are listed in order to continue providing levels of service of C. Generally, roads contained on the facilities list are arterial roads, and only contain the required improvements for obtaining/maintaining LOS “C”. The proposed project is surrounded by arterials roads (Ashe, McCutchen, Gosford Roads, and State Highway 119).

As transportation needs change from year to year, the City municipal code provides that “Each fiscal year, the administrator shall present to the city council a proposed update to the capital improvement plan for road construction projects as set forth in Section 15.84.030C. Such plan shall indicate the approximate location, size, time of availability and estimates of cost for all improvements to be financed with transportation impact fees. Such plan shall be updated by the city council at a noticed public hearing as required by Government Code Section 66002” (Section 15.84.070 (C)).

Accordingly, the proposed project will be governed by the Regional Transportation Impact Fee (RTIF) Program and any fees and associated pro-rata shares of regional transportation facilities as indicated on the most recent capital improvement plan/facilities list.

5.9.3 STANDARDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Initial Study Checklist form, which includes a series of questions relating to transportation and traffic issues. This checklist was applied in the completion of the Initial Study for the proposed project and can be found in Appendix 15.1. The questions posed in the Checklist have been used as thresholds of significance for this section. Therefore, a project could create a significant environmental impact if one or more of the following occurs:

- The project causes an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e. results in a substantial increase in either the number of vehicle trips, the volume to capacity ration on roads, or congestion at intersections
- The project exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated road and highways.
- The project results in a change in air traffic patterns, including either an increase in traffic levels or a changing in location that results in substantial safety risks.
- The project substantially increases hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).
- The project results in inadequate emergency access.
- The project results in inadequate parking capacity.
- The project conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks).

In addition to the CEQA checklist deficiencies were also determined from use of City of Bakersfield Standards and Metropolitan Bakersfield General Plan Goals, Policies, and Implementation measures as discussed in the regulatory setting in 5.9.2 of this Section.

5.9.4 PROJECT IMPACTS

Short-Term Construction Impacts

Impact 5.9a

Construction activities have the potential to create temporary impacts on local roadways such that levels of service could drop below LOS "C".

Discussion

Construction and site preparation activities have the potential to impact traffic levels on nearby roadways. Increased numbers of trucks related to construction activities such as, but not limited to, materials delivery, waste trucks, water trucks, and construction crew commuting, may increase traffic on project area roadways and intersections. Heavy construction equipment will likely only impact local roadways upon construction commencement and subsequent completion as heavy equipment is usually only moved on and off-site once during construction of a project. The nature of such traffic is transitory in that upon the completion of construction activities related traffic will cease. Impacts from construction related traffic are temporary and do not require traffic mitigation beyond existing construction traffic management plan requirements which are part of the

construction project plan per specified City standards. Impacts are considered potentially significant.

Long-Term Operational Impacts

Impact 5.9b

The implementation of the proposed project may create increased traffic on local roadways which could impact levels of service.

Discussion

As indicated in the Traffic Analysis completed by Ruetgger's and Schuler Engineers in August of 2006 for the proposed project, "all but one of the roadway segments will continue to operate with minimal delays in their present configurations in 2010. The addition of project traffic will not cause any intersections and roadway segments to drop below LOS C." This being said, the project will still contribute, although minimally, to local traffic volumes and is therefore required to participate in the Regional Transportation Impact Fee (RTIF) Program. Impacts are considered potentially significant.

5.9.5 CUMULATIVE IMPACTS

Impact 5.9c

The proposed project in conjunction with past, present, and potential future projects has the potential to cause cumulatively considerable traffic and transportation impacts

As indicated in the Traffic Study completed for the project (See Appendix 15.7), Levels of Service for the studied intersections would be LOS "F" with or without project related traffic (See Table 5.9E, below. Additionally, such levels would be improved upon implementation of mitigation measures (i.e. participation in RTIF program).

**Table 5.9E
AM Peak Hour Levels of Service**

#	Intersection		2006	2010	2010 +Project	2010 + Project w/Mitigation	2030	2030+ Project	2030 + Project w/Mitigation
1	Gosford Rd. & McCutchen Rd	EB WB	B -	D E	D E	C	F F	F F	C
2	Ashe Rd. & McCtuchen Rd	EB WB	- -	C B	C C	- -	F F	F F	C
3	Gosford Rd. & Taft Hwy		B	B	B	-	F	F	C
4	Ashe Rd. & Taft Hwy	NB SB	C D	C E	C F	C	F F	F F	C

Since the number of trips associated with the project are minimal and intersections within the project vicinity will have future levels of service below LOS "C" without the proposed project, the cumulative impact associated with the proposed project is considered minimal. Moreover, projects surrounding the proposed wastewater treatment plant project, which have the greatest impact on traffic volumes in the area, have all completed or are completing environmental assessments and implementing mitigation measures for traffic related impacts according to their relative impacts.

5.9.6 MITIGATION MEASURES

MM 5.9-1

Prior to the issuance of grading permits, a construction Traffic Management Plan will be submitted by the construction management contractor for approval by the City of Bakersfield. The plan will consist of prior notices, adequate sign posting, and detours. The plan will indicate the timing of each element as deemed appropriate by the City of Bakersfield Traffic Engineering Department. The plan will also be reviewed and approved by the City Fire and Police Departments in order to assure that emergency response is not hindered by construction related traffic. The contractor shall implement the approved plan during all site construction activities. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.

MM 5.9-2

On or before the date of commencement of construction, or the issuance of grading permits, the Project Applicant will pay all required RTIF Program fees per Municipal Code Section 15.84.050. Payment of these fees will assure that arterials will continue to operate at LOS "C" or above.

5.9.7 SIGNIFICANCE AFTER MITIGATION

Short-Term Construction Impacts

Impact 5.9a

By providing a comprehensive plan to moderate and control construction related traffic, traffic originating from the project site will be controlled such that impacts to existing traffic patterns will be minimal. Therefore, implementation of MM 5.9-1, will reduce construction traffic impacts to less than significant levels.

Long-Term Operational Impacts

Impact 5.9b

The RTIF program was created in order to provide a mechanism for the City and County to provide coordinated and appropriate traffic improvements in order to facilitate the clear, unobstructed flow of traffic in the Metropolitan Bakersfield area. Consequently, the payment of fees into this program will help provide for the mitigation of operational traffic impacts of the project through the most appropriate forms of traffic facilitation as determined by the RTIF program. Therefore, upon implementation of MM 5.9-2, all operational project traffic will be reduced to less than significant levels.

Cumulative Impacts

Impact 5.9c

As indicated in the Table 5.9E, implementation of MM 5.9-2, will return levels of service to "C", and, hence, cumulative impacts are considered mitigated to a less than significant level. Moreover, it should be noted that the project, in addition to the payment of RTIF fees, will construct improvements along Gosford, Ashe, and McCutchen Roads to the centerline along the project's frontage (See Figure 9). Such improvements will include the creation of new lanes in these areas in accordance with City General Plan Guidelines and Standards. These improvements coupled with the payment of RTIF fees will help alleviate traffic impacts in the project area above and beyond that required by City Policy. Therefore, any impacts from the proposed project in combination with past, present and potential future projects are not considered cumulatively significant.

6.0 LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT

6.1 THE RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Approval of the proposed project will result in environmental changes and impacts to the environment as identified in Section 5.0. The proposed project would result in potentially significant impacts for Air Quality (Section 5.2). As currently proposed, implementation of the project would result in the following changes:

- Removal of vegetation for grading and construction activities.
- Consumption of energy and natural resources to develop and maintain the proposed project.
- Short-term construction impacts from noise, light and glare and traffic.

The short-term impacts would be avoided or lessened to a large degree through mitigation measures as discussed in Section 5.0.

Ultimate development of the project site would create long-term environmental consequences associated with development of previously vacant land. Implementation of the proposed project and the subsequent long-term effects may impact the physical, aesthetic, and human environments. Long-term physical consequences of development include incremental increase in traffic volumes as noted above and an incremental degradation of local and regional air quality as a result of emissions associated with the wastewater treatment processes and equipment. However, the completed plant would provide the facilities to enable the use of the existing solar sludge drying beds to be phased out which would enhance environmental quality from an air emissions and odor perspective. The visual environment of the proposed project site would also be altered; however, the construction of an approximately 6 foot high landscaped berm around the facility area would screen the plant from adjacent uses. In addition, the long term use of energy resources would be offset in large part by utilization of the digester gas to provide electric power and process heat for the facilities. In a similar fashion, the completed plant would provide tertiary treated water to meet some of the plant's water demands as well as irrigate on site landscaping. This would reduce long term demands on the potable water system.

The proposed project also provides for new technology to be added to the plant for energy efficiency and to meet 2010 Regional Water Quality Control Board requirements, in turn improving the area water quality. Moreover, the proposed upgrade of the Wastewater Treatment Plant No.3 will help alleviate any potential for plant upset due to overloading caused by increased wastewater creation from increased populations within the service area.

6.2 IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Approval of the proposed project would cause irreversible environmental changes. Implementation of the Wastewater Treatment Plant No. 3 Expansion and Upgrade would result in the following changes:

- Commitment of land that would be physically altered to provide additional facilities for the wastewater treatment plant. Note that the project site is already designated for Public Facilities land uses.

- Soil erosion due to grading and construction activities.
- Utilization of various nonrenewable and slowly renewable resources (such as concrete, piping, asphalt, steel, gravel, sand and other materials) for construction.
- Energy consumption during development and maintenance of the site which is considered a permanent investment.

6.3 GROWTH-INDUCING IMPACTS

In accordance with CEQA *Guidelines* Section 15126.2(d), this discussion addresses ways in which the proposed project could foster growth of employment, housing, or population (whether directly or indirectly) in the surrounding environments. In addition, growth inducing impacts of the proposed project are assessed in terms of whether the project would remove obstacles to development, require construction of expanded facilities that could serve other future development, or otherwise facilitate or encourage development of other activities that could significantly affect the environment. The CEQA *Guidelines* also indicate that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

In general terms, a project may foster spatial, economic, or population growth in a geographic area if it meets any of the following criteria:

- Removal of an impediment to growth (e.g., establishment of an essential public service and provision of new access to an area);
- Fostering of economic expansion or growth (e.g., changes in revenue base and employment expansion);
- Fostering of population growth (e.g., construction of additional housing), either directly or indirectly;
- Establishment of a precedent-setting action (e.g., an innovation, a change in zoning, and general plan amendment approval); or
- Development of or encroachment on an isolated or adjacent area of open space (being distinct from an in-fill project).

Should a project meet any one of the above listed criteria, it may be considered growth-inducing. The potential growth inducing impacts of the proposed project are evaluated below against these criteria.

The proposed project was reviewed to determine whether the provision of additional treatment capacity could potentially remove barriers to development, consequently inducing growth. This analysis of capacity versus demand was completed by Quad Knopf, Inc. (2006). The analysis used eight of the largest projects in the service area of the treatment plant and determined, using net acreage, the projected wastewater treatment capacity needs of these projects upon build-out (See Figure 16). Such calculations were determined by using project specific land use acreages and applying the City of Bakersfield Wastewater Sewer Master Plan Calculations for treatment capacity needs. Upon completion of the study the total net demand in gallons per day of these eight large projects was approximately 16 MGD. Such a demand would consume all of the proposed increase in sewer treatment capacity, therefore, not inducing growth but rather responding to the existing need for such services. Moreover, this assessment viewed in conjunction with the cumulative projects listed in Section 4.0 of this document, such as the tract maps and smaller GPA/ZC/Annexation/EIR projects, only serve to further support the conclusion that the WWTP No. 3 Expansion and Upgrade is not inducing growth but rather responding to it.

In addition, development of the proposed project is considered beneficial planning in order to provide needed public services to customers within the service area. The proposed project also provides for new technology to be added to the plant for energy efficiency and to meet 2010 Regional Water Quality Control Board requirements, in turn improving the area water quality.

Moreover, the proposed upgrade of the Plant will help alleviate any potential for plant upset due to overloading caused by increased wastewater creation from increased populations within the service area.

Although implementation of the proposed project would result in increased jobs and revenue generated during the construction phase, this would be a temporary situation that would cease upon completion of the project. The nature of the project itself would not cause any significant changes in revenue base or employment.

Implementation of the proposed project, the expansion and upgrade of Wastewater Treatment Plant No. 3, would not create a precedent setting situation. The project site is currently being used either for wastewater treatment purposes or is vacant land. The site's General Plan Land Use designation is P (Public Facilities) and the zoning is A (Agriculture) and operates under a Conditional Use Permit (CUP# 05-0669). Therefore the project is not encroaching on an open space area or inconsistent with the MBGP.

Again, implementation of the project as proposed would not create a situation that would foster spatial, economic, or population growth. The City of Bakersfield was unprepared for the unexpected explosion in population growth that began in July of 2000, which triggered the need to expedite the expansion and upgrade of the treatment plant. Therefore, the City is responding to an existing need for expanded services, not fostering growth. Further, Impact 5.8a provides a discussion regarding the potential of the proposed project to foster population growth.

7.0 ALTERNATIVES TO THE PROPOSED PROJECT

In accordance with the California Environmental Quality Act (CEQA) Guidelines, Section 15126.6(d), this Section (1) describes a range of reasonable alternatives to the proposed Project that could feasibly attain the basic objectives of the proposed Project but would avoid or substantially lessen any of the significant effects of the Project, and (2) compares the merits of each Alternative. The analysis focuses on Alternatives capable of eliminating significant adverse environmental effects or reducing them to less than significant levels, even if these alternatives would impede, to some degree, the attainment of the Project objectives. Potential environmental impacts associated with three separate Alternatives are compared to impacts of the proposed Project. These Alternatives are compared to impacts of the proposed Project. These Alternatives are the "No Project" Alternative, the "Reduced Increase in Capacity" alternative, and the "Enhanced Odor Control" Alternative. The "Environmentally Superior" Alternative, as required by CEQA is described in Section 7.5 "ENVIRONMENTALLY SUPERIOR" ALTERNATIVE.

7.1 "NO PROJECT" ALTERNATIVE

7.1.1 DESCRIPTION OF ALTERNATIVE

The "No Project" Alternative assumes that the proposed expansion of the plant from 16 MGD to 32 MGD would not be implemented. Additionally, this alternative assumes that existing land uses on the Project site would remain unchanged. Because the project site would remain unchanged under this alternative, few or no environmental impacts would occur. Additionally, it is important to realize that existing environmental conditions, including those that may be defined as either adverse or significant, would continue. Under the No Project Alternative, the potential benefits associated with the proposed Project would be forgone. This Alternative serves as the baseline against which to evaluate the effects of the proposed Project and other Project Alternatives. The No Project Alternative would produce no project related direct impacts, but would not be in compliance with its WDR as well as not providing the needed treatment capacity required by the growing southwest. Both of these situations could produce a moratorium on construction and growth in the western half of the community, a situation which is not consistent with the goals of the MBGP.

7.1.2 IMPACTS COMPARED TO PROJECT IMPACTS

The "No Project" Alternative would not result in many of the environmental impacts associated with the construction and development of the proposed Project. This Alternative would avoid almost all potential impacts resulting from alteration of the Project site's physical characteristics and construction of new facilities which would aid in the plant's capacity increase. Maintaining the Project site in its existing condition would also eliminate potential future impacts to biological resources, short-term noise from construction, any unknown cultural resources that may be discovered, and the visual characteristics of the site. It should be noted though that impacts to wastewater facilities and the provision of this public service would be hindered under this alternative and would therefore, have a greater impact than the proposed project

Implementation of the No Project Alternative would avoid the environmental impacts identified for the proposed Project; however, this Alternative would not preclude the potential for increasing the capacity of the plant in the future. Moreover, the "No Project Alternative" is inconsistent with the MBGP goals and policies which require public services to keep pace with growth and development. For example, Goal 4 of the Land Use Element of the MBGP, states:

"Accommodate new development which channels land uses in phased, orderly manner and is coordinated with the provision of infrastructure and public improvements."

Further Policy 53 of the Land Use Element states:

“Ensure that land use and infrastructure development are coordinated.”

Additionally, Goal 1 of the Public Services & Facilities Element- Sewer Service states:

“Ensure the provision of adequate sewer service to serve the needs of existing and planned development in the planning area.”

Current development occurring in southwest Bakersfield requires increased sewer service capacity. Therefore, the “No Project alternative” would not support the above listed goals and policies of providing public services to development in a coordinated orderly manner. This Alternative is therefore inconsistent with the General Plan.

7.1.3 ABILITY TO MEET PROJECT OBJECTIVES

The “No Project” Alternative is considered to be environmentally superior to the proposed Project. However, this Alternative would not realize any of the project objectives, as listed in Section 3.4, PROJECT OBJECTIVES. .

7.2 “REDUCED INCREASE IN CAPACITY” ALTERNATIVE

7.2.1 DESCRIPTION OF ALTERNATIVE

With the “Reduced Increase in Capacity” Alternative the Wastewater Treatment Plant would increase its capacity by 8 MGD rather than the proposed 16 MGD. Implementation of this alternative would include similar activities to the proposed project but on a smaller scale.

7.2.2 IMPACTS COMPARED TO PROPOSED IMPACTS

The following compares impacts associated with the “Reduced Increase in Capacity” Alternative to those of the proposed project.

Aesthetics, Light, and Glare

This alternative would reduce the aesthetic impacts to a degree, however, lighting, construction activities, ponds, etc, would cause similar aesthetic impacts to the proposed project.

Agriculture

This alternative would have the same impacts to Agriculture as the proposed project, since the project site is not in agricultural production, and all nearby lands are slated for development.

Air Quality

Air quality impacts from this alternative would be similar in nature to those from the proposed project, but of a lesser degree due to the reduced wastewater volumes requiring treatment. The plant will remain in compliance with the SJVAPCD regulations. As this alternative would still be located in the same area, its proximity to sensitive receptors would remain the same as the proposed project. Further, odor impacts will be similar due to the same odor controlling mechanisms required in both scenarios.

Biological Resources

As this alternative would be located in the same location, its impacts to wildlife and endangered species is likely to be similar in nature, although, the extent of ponds may not disturb as much ground. Mechanisms to protect endangered species such as pre-construction surveys will occur

both in this alternative as well as in the proposed project. Further, all required fees will be paid to the MBHCP to help off-set biological impacts caused by both this alternative and the proposed project.

Cultural Resources

Although this alternative would disturb less ground than the proposed project, all of the same mitigation measures to preserve cultural resources on the project site would remain in place. Therefore, the overall difference for impacts to cultural resources is negligible.

Geology, Soils, and Mineral Resources

Impacts related to Geology, Soils, and Mineral resources were found to be less than significant under the proposed project. Therefore, any alternative that provides for construction on the site under the proposed project maximum would also have less than significant impacts. Therefore, the difference in impacts is negligible.

Hazards and Hazardous Materials

Impacts related to Hazards and Hazardous Materials for this alternative are similar to the proposed project. The same facilities, such as methane digesters and a small laboratory, will be built under this alternative as will be built under the proposed project. Further, the presence of construction hazards will occur under this alternative as well, although at a slightly reduced scale. The overall difference in impacts between the proposed project and this alternative are negligible.

Hydrology & Water Quality

Impacts to water quality from a reduced capacity plant would be less than that of the proposed project. This decrease comes primarily from reduced amounts of water for infiltration in ponds. Under both the reduced capacity alternative and the proposed project, a permit will be issued by the RWQCB. All discharges will be in compliance with RWQCB/DHS rules and regulations. The same mitigation measures would be applicable to both scenarios. All other hydrology issues were considered to be either less than significant or have no impact under the proposed project and would therefore have the same designation under the reduced capacity alternative.

Land Use, Population, Housing & Relevant Planning

Impacts due to growth inducement by the proposed project were found to be less than significant. Consequently, the reduced increase in capacity alternative would be as well. However, if the treatment plant were only expanded to 24 MGD capacity, planning to construct the next plant upgrade to the ultimate 32 MGD capacity would have to commence immediately upon completion of a smaller 24 MGD capacity in order to accommodate existing, recently approved and future development projects. The expansion of the plant from its current 16 MGD capacity to 32 MGD capacity therefore represents the most cost effective approach to the project, as the additional 16 MGD facilities will mirror the existing plant and components. Therefore, a reduced increase in capacity alternative would be inconsistent with existing goals and policies of the MBGP which state that public services should be coordinated with development.

Noise

Facilities built for this alternative would be similar to those built for the proposed project, and would be subject to the same mitigation measures as the proposed project to mitigate noise impacts, such as noise from emergency backup generators and aeration basin blowers. All other potential noise impacts were found to be less than significant with mitigation for the proposed project, so this alternative, due to its similar location and facilities, would have the same designations.

Public Services, Recreation & Utilities

Overall impacts for this alternative would be similar to the proposed project. In reference to sewer services to residences, this alternative could have a greater impact because it would not adequately provide for needed public services to the extent needed in the service area.

Transportation/Traffic

This alternative would have fewer traffic and transportation impacts due to its decreased size. Fewer trucks and employee commuting trips would be required for this alternative. However, impacts related to ingress and egress of trucks to the plant site would be similar to those of the proposed project. All other impacts would be the same as the proposed project; less than significant.

7.2.3 ABILITY TO MEET PROJECT OBJECTIVES

The “Reduced Increase in Capacity” Alternative meets some of the goals of the project and could have slight reductions in environmental impacts than those related to the proposed project, but it is likely that construction of the reduced capacity alternative will have similar impacts to that of the proposed project’s larger capacity. Further, a decrease in the expanded capacity of the plant would not provide the needed services for City approved development projects, which is an objective of the proposed project, and consistent with the MBGP’s goals and policies. Moreover, if the plant were only expanded by 8 MGD, due to the seven year planning period required to plan, design, construct, and activate a new wastewater treatment plant and the capital, operations, and maintenance cost savings from expanding by 16 MGD rather than 8 MGD, building of a smaller increment would not be practical from a service nor financial point of view. The construction of an 8 MGD would require immediate upgrading upon its completion due to such rapid growth in the service area. Such an approach would be a misuse of taxpayer money and City staff resources.

7.3 “ALTERNATIVE SITE” ALTERNATIVE

The rapid growth in residential and commercial development in the southwestern section of Bakersfield has generated the need for expanded infrastructure. This rapid growth in residential and commercial development was unanticipated, so the City started late in planning for the upgrade and expansion of Wastewater Treatment Plant No. 3, which serves the western sector of the City.

The current site is already owned and operated by the City of Bakersfield as a regional municipal wastewater treatment plant for the City. This site represents a significant capital investment in wastewater treatment equipment, as well as associated service area infrastructure such as sewage trunk lines and lift stations to collect and deliver untreated wastewater to the facility. Development of an alternative location would cost the City more through the acquisition of another appropriate site and testing for adequate soils. Looking for an alternative location with adequate infrastructure in place, adequate soils for percolation, and environmentally sound, would take years. Since development is rapidly occurring in the project vicinity and the City is required to provide service in accordance with the General Plan’s goals and policies and WDR requirements, a longer timeline for providing increased wastewater capacity in western Bakersfield would be impractical. Further, the existing wastewater treatment plant facilities at WWTP No. 3 were designed from the onset to be modular in nature to expeditiously provide for future increased capacity projects in order to accommodate future development needs as indicated in the current General Plan. Therefore, any other location of the plant would be inconsistent with the General Plan.

The Central Valley Regional Water Quality Control Board has also established a Consolidation Policy in the Tulare Lake Basin Plan (CVRWQCB 2004 revision) which is applicable to the discussion of an alternative site for the proposed WWTP No. 3 Expansion and Upgrade project. The Consolidation Policy provides for consolidating wastewater management, treatment, and disposal by regional facilities, and to avoid the proliferation of small treatment plants in developed areas. The Consolidation Policy goes on to describe in part that:

Unsewered areas and new developments adjacent to or within existing wastewater collection system service areas should be connected to the system. Developments not within a service area, but within the projected sphere of influence of a regional system should be developed in a manner that provides for future connection to the system when the regional system becomes available... Each municipal facility should act as a regional facility to provide sewerage services within its sphere of influence. The municipality must be equitably compensated for these services... The intent of this policy is to make consolidation the rule rather than the exception. Consolidation should be compared to other approaches. If such a comparison yields clear technical, environmental, or economic advantages for consolidating, then consolidation should be implemented.

Given the City's significant investment in the current site, and its role as a regional treatment facility with its associated collection system infrastructure, the existing facility's capability to be expanded on a modular basis as the demand occurs, and the CVRWQCB's Consolidation Policy, the City decided that to expand Wastewater Treatment No. 3 to 32 MGD at the current site was the most appropriate approach. This determination was also influenced by the seven year planning period required to plan, design, construct, and activate a new wastewater treatment plant and the capital, operations, and maintenance cost savings from constructing the new plant on the current site with a capacity increase greater than 8 MGD. Given the foregoing analysis, an alternative location was determined to be infeasible. In accordance with Sections 15126.6(f)(2) and 15126.6(f)(3) of the State CEQA Guidelines, an alternative project site location will not be evaluated in the EIR.

7.4 "ENHANCED ODOR CONTROL" ALTERNATIVE

The "Enhanced Odor Control" Alternative consists of the proposed project as outlined in Section 3.3 and the implementation of enhanced odor control measures, as recommended in the GAMAQI. Add-on odor control devices and/or process modifications implemented at the source of odors can be an effective means to reduce potential odor impacts. Modification of the project design would help to further reduce the potential for odor impacts on surrounding areas as well as reduce the ROG emissions from the treatment processes. The activities required for such modifications to the project design would not change the activities or the basic footprint required for the treatment plant expansion and upgrade under the existing project description. These modifications will include:

- Abandonment of the four existing trickling filters and expansion of the activated sludge aeration basins which will include fixed covers to collect fugitive emissions for treatment through bio-filters.
- Deletion of a planned intermediate pump station to handle effluent delivery from the primary clarifiers to the trickling filters.
- Increase of the number of aeration basins from 8 units to 10 as a result of abandoning the existing trickling filters. These basins would be covered.

- The structures of two of the existing trickling filters will be converted into recycled water reservoirs to receive the effluent from the tertiary treatment system to reclaim a portion of the secondary effluent.
- The structures of the other two existing trickling filters will be converted to two compost media odor removal biofilters to provide additional control of the emissions from the aeration basins, and ancillary facilities and equipment.
- The number of planned emergency back-up diesel fired generators will remain at five units, with one of the units having a smaller rated engine.

As this alternative would include all the activities of the proposed project, there would be no changes with respect to the environmental impacts as analyzed in this document with the exception in air quality resources discussed below.

The enhanced odor control alternative would result in lower ROG emissions compared to those for the proposed project due to abandonment of the trickling filters and additional control of the emissions of the aeration basins. The rating of one of the emergency engines would also be reduced due to the abandonment of the trickling filters. While a smaller engine would result in lower emissions of criteria pollutants, the magnitude of the size reduction and associated emission reduction is not known at this time. It is unlikely that it would result in less than significant NO_x emissions. Table 7.0A, “Enhanced Odor Control” Alternative – Net Change in Wastewater Treatment Operational Emissions, shows the existing and proposed operational emissions along with the net change for this alternative. Additional details of the operational emissions under this alternative are found in Appendix 15.3d.

Table 7.0A
“Enhanced Odor Control” Alternative
Net Change in Wastewater Treatment Operational Emissions

Operational Status/Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Total Proposed Operational Emissions	14.29	32.46	105.89	1.67	2.11
Total Existing Operational Emissions	13.89	5.59	49.48	10.92	0.05
Net Change in Operational Emissions	0.40	26.87	40.95	(9.25)	2.06
SJVAPCD Thresholds	10	10	—	—	—
Exceeds Thresholds?	NO	YES	—	—	—

*Source: Impact Sciences, Inc. Calculations can be found in Appendix 15.3d.
Values in parentheses indicate a reduction in the net emissions.*

Compared to the proposed project, which was determined to have less than significant direct and cumulative odor impacts, this alternative would be even less significant on a project direct and cumulative odor impact basis. However, while ROG and odor impacts would be reduced under this alternative, it would still have a significant direct and cumulative air quality impact due to NO_x emissions which are unavoidable.

7.5 “ENVIRONMENTALLY SUPERIOR” ALTERNATIVE

The purpose of the Alternatives evaluation is to develop Project Alternatives that reduce or eliminate significant impacts. CEQA Section 15126.6(e)(2) indicates that, if the “No Project” Alternative is the “Environmentally Superior” Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other Alternatives in the case.

The context of an environmentally superior alternative for this DEIR is based on the consideration of several factors including the project's objectives as described in Section 3.4 and the Alternative's ability to fulfill the objectives with minimal impacts to the surrounding environment.

7.5.1 "NO PROJECT" ALTERNATIVE

Implementation of the "No Project" Alternative, although it would eliminate project related impacts as identified in Sections 5.0 and 6.0, it would also not be able to respond to planned growth in the service area in order to comply with the requirements of the WDR. Moreover, the "No Project Alternative" is inconsistent with the MBGP goals and policies which require public services to keep pace with growth and development. The Metropolitan Bakersfield General Plan states in its Land Use Element (Page II-14, Policy 53) that the City wants to "Ensure that land use and infrastructure development are coordinated." The MBGP goes on to state in its Public Services Element (page X-9) that its goals for public services are to "1. ensure the provision of adequate sewer service to serve the needs of existing and planned development in the planning area. [...] 3. Provide trunk sewer availability to and treatment/disposal capacity for all metropolitan urban areas, to enable cessation or prevention of the use of septic tanks [...]." Expansion of the wastewater treatment plant attempts to fulfill these General Plan Goals and Policies.

7.5.2 "REDUCED INCREASE IN CAPACITY" ALTERNATIVE

The reduced increase alternative is to increase the Wastewater Treatment Plant's capacity by 8 MGD instead of the proposed 16 MGD. Implementation of this alternative would respond to some of the projected growth in the service area while reducing the overall impacts as identified in Section 5.0 and 6.0. However, as stated in Section 7.2, to expand the treatment plant to only 24 MGD would increase the cost associated with the subsequent 8 MGD increase which would have to commence immediately upon completion of the 24 MGD project alternative.

7.5.3 CONCLUSION

Under CEQA, the goal of identifying the environmentally superior alternative is to assist decision-makers in considering project approval. CEQA does not, however, require an agency to select the environmentally superior alternative (CEQA Guidelines Sections 15042-15043).

Based on the evaluations above (including the comparison with project objectives), and the analyses contained and documented in Section 5 of this EIR, the "Reduced Increase in Capacity" alternative has been identified as the environmentally superior alternative. Although the reduced increase in capacity alternative would be environmentally superior, it would not fulfill the project objectives as effectively and adequately as the proposed project.

8.0 INVENTORY OF MITIGATION MEASURES

8.1 AIR QUALITY

MM 5.2-1

During the construction phase of the proposed project, the contractor, shall implement, GAMAQI recommended mitigation measures that may be considered to reduce emissions from heavy-duty equipment. The applicable mitigation measures from Table 8-6 from the GAMAQI, as well as other feasible measures, are recommended to reduce NOx emissions, as well as other pollutants, as follows:

- Minimize idling time (e.g., 10-minute maximum for construction equipment, and 5-minute maximum for heavy-duty trucks per the CARB Airborne Toxics Control Measure for commercial truck idling);
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);
- Curtail construction during periods of high ambient pollutant concentrations;
- Implement activity management (e.g., rescheduling activities to reduce short-term impacts);
- Properly and routinely maintain all construction equipment, as recommended by the manufacturer; and
- Encourage ridesharing and use of transit for construction employees commuting to the project site.

Prior to commencement of construction activities, the contractor shall submit to the Public Works Department a written guarantee stating that during the construction phase, these measures will be utilized on all construction equipment.

MM 5.2-2

The proposed project would include installation of four new emergency diesel engines and retention of the existing emergency engine. Because all of the emergency diesel engines would have a brake horsepower rating over 50, they must comply with Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (California Code of Regulations §93115, Title 17). The ATCM sets allowable maintenance and testing hours per year along with specific diesel PM emission standards. The proposed engines were assumed to operate at 0.15 g/bhp-hr, which is the current nonroad engine standard in the size range of the proposed engines. At this emission level, according to the ATCM, new emergency diesel engines would not be allowed to operate for over 50 hours per year (actual emergency operation is not limited). The emission estimates provided in Table 5.2M and Table 5.2O assumes emergency diesel engines are maintained and tested for 200 hours per year. Upon the issuance of the SJVAPCD air permits, compliance with the ATCM would limit maintenance and testing to 50 hours per year. Therefore, emissions from emergency diesel engines would be one quarter of those shown in Table 5.2M. The emissions based on the operational limits in the ATCM are shown below in Table 5.2Q, Proposed Emergency Diesel Engine Emissions with Mitigation.

**Table 5.2Q
Proposed Emergency Diesel Engines Emissions with Mitigation**

Emission Source	Maximum Daily Emissions (tons/yr)				
	ROG	NO _x	CO	SO _x	PM ₁₀
Emergency Diesel Engines	0.13	1.88	1.13	0.03	0.08

Source: Impact Sciences, Inc. Calculations can be found in **Appendix 15.3c**.

Note: Emissions assume compliance with the ATCM for Stationary Compression Ignition Engines to operate less than 50 hours per year for maintenance and testing.

MM 5.2-3

The proposed digester gas engines represent the largest contributor of NO_x to the operational emissions. Digester gas emissions were estimated assuming engines would meet current SJVAPCD BACT Guideline 3.3.13 for waste gas fired ignition combustion engines. Emission estimates in Table 5.2J are based on emission factors achieved in practice or contained in the SIP per Guideline 3.3.13. The digester gas engines would fulfill the BACT guidelines for meeting achieved in practice emission rates. However, as shown in the BACT Guideline 3.3.13, there are no technologically feasible methods to further reduce NO_x emissions from waste gas fired ignition combustion engines. Furthermore, the CARB’s Guidance for the Permitting of Electrical Generation Technologies concluded that add-on control technologies are not appropriate for waste gas-fired internal combustion engines:

“Waste gas contains impurities that, if combusted will likely poison catalyst based post-combustion control systems. Consequently, the approach for combusting waste gas in either a reciprocating engine or gas turbine has focused on combustion processes that result in minimal NO_x being produced and noncatalytic control systems. For reciprocating engines, lean-burn engines have been the choice because these types of engines produce the lowest emission of NO_x without using post combustion treatment technologies” (CARB, 2001).

The City will install per the project design, lean-burn digester gas engines that comply with the BACT Guideline 3.3.13. Therefore, additional mitigation to reduce NO_x emissions to a less than significant level could not be feasibly accomplished.

8.2 BIOLOGICAL RESOURCES

MM 5.3-1

Prior to ground-disturbing activities, the contractor shall provide a qualified biologist who shall conduct surveys for burrowing owls in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 1995) and the California Burrowing Owl Consortium Guidelines (Santa Cruz Predatory Bird Research Group 2005). The survey will be conducted over the entire site and, where possible, 150 feet around the project site. If no burrows or burrowing owls are identified, then no further action is required. If burrows or burrowing owls are identified, then the following mitigation should be implemented.

If possible, when burrowing owls are detected during the breeding season, impact should be avoided. A no-disturbance buffer zone should be delineated in a 75- meter radius around the occupied burrow. No ground disturbance would be permitted in the no-disturbance buffer zone until a qualified biologist has determined that the young have fledged. Otherwise, compliance with the CDFG passive relocation protocol during the non-nesting season will avoid any significant impacts to burrowing owls. The findings of the survey shall be included in a report submitted to the Public Works Department.

MM 5.3-2

To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, the contractor shall cover all excavated, steep-walled holes or trenches more than 2 feet deep at the close of each working day by plywood or similar materials, or provide one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under mitigation measures 5.3-3 & 5.3-4 of this section must be followed.

MM 5.3-3

Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected by the contractor for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

MM 5.3-4

The contractor shall provide qualified personnel to conduct preconstruction surveys for known dens according to the CDFG Region 4 Protocols, and implement appropriate take avoidance measures for the San Joaquin Kit Fox in accordance with MBHCP take avoidance measures. All agency guidelines regarding kit fox tracking and excavation to prevent entrapment of animals in potential dens shall be followed. The findings of the survey shall be included in a report submitted to the Public Works Department.

MM- 5.3-5

The project area is located within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and is required to pay Habitat Mitigation Impact Fees to off-set incidental take of wildlife species. These fees are collected into a trust for payment of mitigation activities as prescribed in the MBHCP implementation management agreement. Prior to the issuance of construction permits, the MBHCP impact fees for the undeveloped acreage to be disturbed by the project shall be paid by the City.

8.3 CULTURAL RESOURCES

MM 5.4-1

If human remains of Native American origin are discovered during project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, the contractor shall cease all further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the coroner of Kern County has been informed and has determined that no investigation of the cause of death is required, and
- if the remains are of Native American origin,
 - a. the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, or
 - b. the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of

treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission.

Inadvertent discoveries of potential human remains shall be reported and monitored by the Public Works Department.

MM 5.4-2

If buried cultural resources, such as chipped or ground stone, historic bottles or ceramics, building foundations, or non-human bone are inadvertently discovered during ground-disturbing activities, the contractor shall stop all work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. Sites discovered having relevance to Native Americans shall be made known to the appropriate individuals/agencies/groups as determined by the archaeologist in consultation with the Lead Agency.

Inadvertent discoveries of potential buried cultural resources shall be reported and monitored by the Public Works Department.

8.4 HAZARDS AND HAZARDOUS MATERIALS

MM 5.5-1

Per state regulations, the City of Bakersfield Wastewater Department will submit an updated hazardous materials business plan and inventory to the local CUPA authority for all operational hazardous materials that will be utilized in the on-site laboratory and wastewater treatment plant. The plan will include an emergency response plan for accidental release of hazardous materials, an inventory (per SARA Titles II & III as well as Chapter 6.95 of the California Health and Safety Code) of all hazardous materials kept and/or used on site, and a CUPA approved training program for employees in the proper storage, handling, and disposal of all hazardous materials kept and/or used onsite. This plan will be submitted prior to start-up of the new facilities.

MM 5.5-2

Prior to the issuance of grading permits, the City will arrange for the well to be leak tested witnessed and approved by DOGGR personnel. The leak test will be completed to determine the efficacy of the existing plug. If any of the surface plug is removed due to grade cutting or if the leak test is insufficient per DOGGR's assessment, the well will need re-abandoned to current DOGGR standards. If the leak test is sufficient per DOGGR's assessment and no casing cutting is completed for grading purposes then the City will create a 10 foot no build buffer around the existing well. The well is not located within the construction footprint of any of the facilities. Thus, the 10 foot no build buffer can be easily accommodated. The location, however, will be subject to paving for internal circulation improvements which would not affect the integrity of the abandoned well casing since it would be located deep enough beneath the construction zone so as to not be disturbed by paving activities.

MM 5.5-3

If development uncovers any previously unknown oil, gas, or injection wells, the Contractor and/or City will immediately notify DOGGR and all construction adjacent to the well location will cease, until the DOGGR makes a determination of the status of the well and any actions (i.e. re-abandonment) required for the protection of public health and safety. All DOGGR requirements for discovered wells will be completed by the City of Bakersfield Public Works Department under the direction and supervision of DOGGR staff.

MM 5.5-4

All hazardous materials used and stored on site as part of construction related activities such as diesel fuel, oils, lubricants, and hydraulic fluids shall be stored and managed properly and Material Safety Data Sheets kept onsite. Responsibility for the proper management and storage of these materials and the availability of MSDS sheets will be the responsibility of the various construction firms. Further, these firms will provide training for all their construction employees in the proper handling and storage of such materials prior to the beginning of construction.

8.5 HYDROLOGY AND WATER QUALITY

MM 5.6-1

The City of Bakersfield will install additional monitor well(s) in the project area. The number and exact location of these wells will be determined in the work plan in coordination with the RWQCB. In development of the work plan the City of Bakersfield will take into consideration recommendations made by KDSA and the RWQCB. Background sampling will begin no less than one year prior to the initial disposal and onsite percolation of advanced secondary treated effluent. Any additional well(s) would be added to the quarterly monitoring program. Careful placement of additional monitor wells will help ensure that the advanced secondary treated wastewater effluent is appropriately disposed of in accordance with all regulatory requirements. In the event that the sampling shows an elevated level or a sudden rise in the concentration in any of the constituents that are being monitored for compliance with a standard, such finding(s) will be reported to the RWQCB and any corrective actions determined necessary in consultation with the RWQCB will be implemented accordingly. This would help reduce any impacts due to onsite percolation to a level of less than significant. Additional monitor well(s) construction, sampling, analysis and reporting shall be in accordance with the proposed project's work plan, and subsequently issued revised Waste Discharge Requirements, and associated Monitoring and Reporting Program. Inspections and monitoring will be conducted by the WWTP No. 3 staff/authorized agents, or RWQCB as appropriate.

MM 5.6-2

As recommended by KDSA and the RWQCB, during construction contaminated soil (primarily located on the east half of the project area) will be removed to a depth of no less than 5 feet bgs or as will be determined in the work plan to be developed by the City of Bakersfield in coordination with the RWQCB. As discussed above under impact 5.6b, Kleinfelder and KDSA showed that the soil in the former Use Area was influenced by the past irrigation with AYC wastewater. The removal of the contaminated soil will prevent contaminants such as TOC and TKN from migrating towards and impacting groundwater quality. Soil sampling, analysis and reporting shall be in accordance with the proposed project's work plans. Inspections and monitoring will be conducted by the WWTP No. 3 staff/authorized agents, or RWQCB as appropriate.

MM 5.6-3

Any private well down gradient and within a quarter mile of the east half of the former Use Area will be monitored on a semi-annual basis, if such monitoring is requested by the owners. As this

area is rapidly urbanizing, such monitoring will cease when the wells are no longer in use. Monitoring of private wells would reassure those owners who request such monitoring that the implementation of the proposed project will not result in an adverse affect on water quality. Monitoring of private wells shall be in accordance with the proposed project's sampling and reporting program. Inspections and monitoring will be conducted by the City of Bakersfield Public Work's Department as appropriate.

MM 5.6-4

If well water quality of any private well down gradient and within a quarter mile of the east half of the former Use Area is indicated to be degraded by historical use, an alternative source of potable water would be made available by the City of Bakersfield. This mitigation measure will assure that any owner with a private well located down gradient and within a quarter mile of the east half of the former Use Area has a guaranteed source of uncontaminated water. This measure will be implemented pending results of the semi-annual monitoring requirement which will be implemented by the City of Bakersfield only if requested by the owner(s).

MM 5.6-5

As noted in MM 5.6-2, contaminated soils will be removed to a depth of no less than 5 feet bgs or as determined in the work plan. The excavated soils will be used on the outer embankment only of the new percolation ponds and in the perimeter facility landscape berms to be constructed around the frontage of the facility. Measures will be taken to ensure that the excavated soils used in the outer embankment of the new percolation ponds will not be mixed with the clean soils that will make up the inner slope of the embankment perimeter. This mitigation measure allows for the beneficial use consistent with applicable regulations of the excavated contaminated soils that otherwise would have been required to be disposed of at an approved waste disposal site. The construction of the percolation pond embankments and perimeter landscape berms following soil excavation will be subject to regular inspections by the WWTP No. 3 staff as appropriate. The inspections will be performed in accordance with the work plan as requested by the RWQCB.

MM 5.6-6

All components of the expansion project will be designed to comply with specific operational, maintenance, and contingency plans that will be discussed in the Recycled Water Engineering Report. All applicable Title 22 recycled water requirements to protect the public health and safety shall be implemented during project construction and operation. Monitoring and reporting of operations will be in accordance with the requirements established by the amended WDR's Monitoring and Reporting Program. Regular inspections by the RWQCB will be performed to ensure compliance with the Title 22 requirements as provided in the amended WDR.

MM 5.6-7

The City of Bakersfield, through the prime construction contractor(s), will develop and implement a Construction SWPPP during construction activities in order to be covered under the General Permit for Discharges of Storm Water Associated with Construction Activity. The City will adhere to all city, county, state, and federal requirements pertaining to storm water. With the development and implementation of a SWPPP, less than significant impacts are expected.

8.6 NOISE

MM 5.7-1

Prior to issuance of grading and construction permits, the contractor must submit documentation and/or specifications of the following:

- All construction equipment and vehicles used onsite are operating properly and incorporate all appropriately maintained mufflers and sound dampening apparatuses.

- Construction schedules which indicate construction activities will be performed within noise ordinance requirements
- All stockpiling of materials and construction vehicle staging and/or stacking areas will be located away from any identified sensitive receptors

The contractor shall ensure that the foregoing measures continue to be implemented during site construction activities. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.

MM 5.7-2

During construction, the contractor shall situate all stationary construction equipment on the project site so that noise emitting objects or equipment face away from any potential sensitive receptors. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.

8.7 TRANSPORTATION AND TRAFFIC

MM 5.9-1

Prior to the issuance of grading permits, a construction Traffic Management Plan will be submitted by the construction management contractor for approval by the City of Bakersfield. The plan will consist of prior notices, adequate sign posting, and detours. The plan will indicate the timing of each element as deemed appropriate by the City of Bakersfield Traffic Engineering Department. The plan will also be reviewed and approved by the City Fire and Police Departments in order to assure that emergency response is not hindered by construction related traffic. The contractor shall implement the approved plan during all site construction activities. Inspections and monitoring will be conducted by WWTP No. 3 staff/authorized agents.

MM 5.9-2

On or before the date of commencement of construction, or the issuance of grading permits, the Project Applicant will pay all required RTIF Program fees per Municipal Code Section 15.84.050. Payment of these fees will assure that arterials will continue to operate at LOS "C" or above.

9.0 INVENTORY OF SIGNIFICANT AND MITIGABLE IMPACTS

9.1 NONMITIGABLE SIGNIFICANT IMPACTS

9.1.1 AIR QUALITY

Construction Impacts

The recommended mitigation measure (5.2-1) would reduce the magnitude of construction-related emissions to some extent. The resultant benefit of most of the mitigation measures cannot be determined because insufficient detail about the construction activities is known at this time to enable an exact calculation of emissions from specific construction activities that would be affected by the mitigation measures. Moreover, no feasible mitigation exists that would reduce these emissions to a sufficient degree (e.g., approximately 68 percent for NO_x emissions for the worst-case day) such that the mitigated emissions would be below the SJVAPCD's recommended thresholds of significance. Therefore, the construction-related emissions for the proposed project would be considered significant and unavoidable. If the City of Bakersfield approves the project, the City will be required to cite its findings in accordance with Section 15091 of CEQA and will prepare a Statement of Overriding Considerations per Section 15093 of CEQA.

Operational Impacts

Mitigation Measures 5.2-2 and 5.2-3 for NO_x emissions described in Section 8.1 would reduce the proposed project's emissions. However, NO_x emissions would not be reduced to a less-than-significant level as shown in Table 5.2R, Net Change in Wastewater Treatment Operational Emissions with Mitigation. Therefore, the operational impacts from the proposed project would remain significant and unavoidable. If the City of Bakersfield approves the project, the City will be required to cite its findings in accordance with Section 15091 of CEQA and will prepare a Statement of Overriding Considerations per Section 15093 of CEQA.

Cumulative Impacts

The project's emissions after mitigation would still exceed the NO_x threshold of 10 tons per year (55 pounds per day for the construction phase). Therefore, NO_x emissions from construction and operational activities will cause cumulative impacts from the proposed project to be significant and unavoidable. If the City of Bakersfield approves the project, the City will be required to cite its findings in accordance with Section 15091 of CEQA and will prepare a Statement of Overriding Considerations per Section 15093 of CEQA.

9.2 MITIGABLE IMPACTS AND SIGNIFICANCE AFTER MITIGATION

9.2.1 BIOLOGICAL RESOURCES

By providing steps listed in mitigation measures 5.3-1, 5.3-2, 5.3-3, 5.3-4, and 5.3-5 the City will help to ensure that endangered, threatened or species of concern are not killed, harmed, or harassed. Further, by participating in the MBHCP the city is helping ensure that habitat for special status species is protected in areas of more suitable qualities than that which exists on site. Therefore, implementation of mitigation measures 5.3-1, 5.3-2, 5.3-3, 5.3-4, 5.3-5 should reduce any impacts associated with the project to less than significant levels.

Although the mitigations listed above help protect special status species the project may still impact migratory animals in that the land will no longer provide land for migratory animals. Participation in the MBHCP will provide better quality habitat off-site, thus contributing to the

overall betterment of these migratory species. Further, measures listed above which provide protections for the kit fox, will ultimately protect them from the inadvertent entrapment, and harm associated with the proposed project. Therefore, the implementation of mitigation measures 5.3-1, 5.3-2, 5.3-3, 5.3-4, and 5.3-5, should reduce any impacts associated with the project to less than significant levels.

In addition, required participation in the MBHCP by the proposed project and the other on-going development projects reduces cumulative impacts to less than significant.

9.2.2 CULTURAL RESOURCES

If potential cultural resources are unearthed on the project site, mitigation measures listed in Section 8.0 (5.4-1 and 5.4-2) call for the immediate stoppage of work until a qualified professional can review the find and recommend proper actions for their protection and cataloguing. Implementation of these mitigation measures provides mechanisms to preserve any inadvertently discovered cultural resources. Consequently, impacts to cultural resources will no longer exist upon their implementation. Therefore, all impacts to cultural resources are expected to be less than significant after mitigation.

9.2.3 HAZARDS AND HAZARDOUS MATERIALS

The proposed project will be required to continue to maintain a Hazardous Materials Business Plan for review and approval by the City Fire Department, which is the identified CUPA for the project area. Completion and required implementation of the hazardous materials business plan (MM 5.5-1) will provide the needed measures for protection of public health and safety from the small quantities of hazardous materials to be used and stored onsite on an operational basis, therefore, causing impacts to be less than significant.

For impacts associated with the onsite oil well, DOGGR will provide the leak testing so that a determination of the integrity of the existing cap and plug for the well can be made. If leak testing finds that the well has been compromised, DOGGR will oversee the proper corrective action (such as re-abandonment, if required) for protection of the public health and safety. Therefore, implementation of MM 5.5-2 and MM 5.5-3, will reduce any existing and or future potential impacts from known and unknown oil wells located on the project site to less than significant.

In addition, Implementation of MM 5.5-4 will provide the appropriate training and safety measures to employees who work on the construction site for the project. Training of construction crews will help keep incidents of hazardous materials spills or leaks to a minimum causing impacts of such occurrences to be less than significant.

9.2.4 HYDROLOGY AND WATER QUALITY

The proposed project would not result in any significant environmental impacts to water quality as indicated by the ultimate chemical quality of the effluent. Implementation of the proposed project will result in a better quality effluent than is presently possible with the current facilities. The disposal/reuse of the treated effluent will be managed in a manner to not adversely effect surface and groundwater quality or supply. Furthermore, the quality of water produced from public supply wells should not be significantly affected as these wells tap water from below a depth of about 300 feet and most are located fairly distant from the WWTP No. 3 ponds.

The analyses regarding water quality finds that the project will not degrade water quality, contaminate a public water supply, substantially degrade or deplete groundwater resources, interfere substantially with groundwater recharge, or cause substantial flooding, erosion or siltation. Furthermore, the RWQCB concluded that, "If the results of the expanded plant are

similar to current operations, the impact to groundwater from constituents left in soil by historical discharge of effluent blended with wastewater from the former AYC plant should be minimal.”(RWQCB Letter, 31 July, 2006). Therefore, with the implementation of design features and mitigation measures, impacts to water quality are considered less than significant.

9.2.5 NOISE

Providing records that all equipment used on site is maintained per all standards and siting equipment such that noise is directed away from sensitive receptors will help the project prevent any significant noise impacts during construction activities. Therefore, implementation of mitigation measures 5.7-1 and 5.7-2, will reduce temporary construction impacts to a less than significant level.

All remaining potential impacts were determined to be less than significant due to the implementation of project design features.

9.2.6 TRANSPORTATION AND TRAFFIC

By providing a comprehensive plan to moderate and control construction related traffic, traffic originating from the project site will be controlled such that impacts to existing traffic patterns will be minimal. Therefore, implementation of MM5.9-1, will reduce construction traffic impacts to less than significant levels.

Further, the RTIF program was created in order to provide a mechanism for the City and County to provide coordinated and appropriate traffic improvements in order to facilitate the clear, unobstructed flow of traffic in the Metropolitan Bakersfield area. Consequently, the payment of fees into this program will help provide for the mitigation of operational traffic impacts of the project through the most appropriate forms of traffic facilitation as determined by the RTIF program. Therefore, payment of fees to the RTIF (MM 5.9-2) will reduce operational and cumulative traffic impacts to less than significant levels.

Moreover, it should be noted that the project in addition to the payment of RTIF fees, will construct improvements along Gosford, Ashe, and McCutchen Roads to the centerline along the project's frontage (See Figure 9). Such improvements will include the creation of new lanes in these areas in accordance with City General Plan Guidelines and standards. These improvements coupled with the payment of RTIF fees will help alleviate cumulative traffic impacts in the project area above and beyond that required by City Policy. Therefore, any impacts from the proposed project in combination with past, present, and potential future projects are not considered cumulatively significant.

10.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

In accordance with Section 15128 of the CEQA Guidelines the effects discussed in this section were determined to be less than significant as evaluated in the Initial Study/Notice of Preparation for the proposed project. For the reasons discussed, these issues were excluded from further evaluation in this DEIR.

AESTHETICS: *Would the project;*

a) *Have a substantial adverse effect on a scenic vista?*

No Impact. The project site is located within an area having slopes from 0 - 5 %. The area is comprised of the existing 16 MGD treatment plant facilities and vacant land, and is bordered by current agricultural land uses, which are slated for residential/commercial development in the near future. The area is not regarded or designated within the Metropolitan Bakersfield Plan as visually important or "scenic". Furthermore, development of the project would not block or preclude views to any area containing important or what would be considered visually appealing landforms. Therefore, no scenic vistas will be impacted by construction of this project.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway?*

No Impact. The project does not include the removal of trees, the destruction of rock outcroppings or degradation of any historic building. The project is not adjacent to or near any state highway which is designated as or eligible to be listed as "scenic" on the California Department of Transportation (Caltrans) State Scenic Highway Program (Caltrans, 2005, January 28).

c) *Substantially degrade the existing visual character or quality of the site and its surroundings?*

Less Than Significant Impact. Landscaping will be incorporated into the project to provide visual screening of the Treatment Plant from the future anticipated commercial and residential development. Such landscaping will be constructed adjacent to the plant on McCutchen Road, Ashe Road and Gosford Road to alleviate any impacts associated with degradation of existing visual character or quality of the site and its surroundings.

AGRICULTURE RESOURCES: *Would the project;*

a) *Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

Less Than Significant Impact. According to the Metropolitan Bakersfield General Plan (2002), the project site is designated as Prime Agricultural Farmland, although, all agricultural production on the property ceased in 2002 when the City terminated the discharge of American Yeast Company waste water. The land has remained fallow since. Further, the project site was excluded from Agricultural Preserve Number 10 and has been designated for public use for many years. Therefore, it has never been considered by the City as prime farmland to be kept in perpetuity. Moreover, the project site per its CUP (which amended the General Plan) has a land use designation of Public Facilities which under the City of Bakersfield General Plan is considered an urban use. Therefore, the project site is considered an area designated for urban rather than agricultural use, and is not required to undergo any agricultural land conversion studies.

In addition, agricultural impacts to "Prime Farmland" were considered significant in the MBGP EIR (2002), which included the project site, and a Statement of Overriding Considerations adopted by the City Council (Resolution 222-02). Therefore, any such impacts associated with agricultural impacts on the project site

have already been addressed in a previous environmental document, and no further environmental analysis is required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The subject site has a land use designation of Public Facilities, a Zoning designation of agriculture and contains the current treatment plant and vacant land. The subject site is not in Williamson Act. The City of Bakersfield currently has a Conditional Use Permit (CUP) to operate the Wastewater Treatment Plant. The expansion of the plant will remain in compliance with its CUP. Therefore, the project will not conflict with its zoning nor any Williamson Act contracts.

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use?

Less Than Significant Impact. The project area has historically been a wastewater treatment plant and was considered as such during the completion of the MBGP in 2002. There are no special attributes of this project site, related to location or nature that will cause or could result in the conversion of farmland to non-agricultural use. Further, the current wastewater treatment plant once located far from development is now surrounded by City Council approved General Plan Amendment/Zone Change, and Annexation projects which will allow the development of residential, commercial, and industrial uses in the project's immediate vicinity. These projects have already undergone environmental review and the environmental impacts, which include agricultural land conversion, have been adequately addressed. Upon LAFCO approval of the annexation of these properties into the City, the Treatment Plant will be required to serve these projects. In addition, future development projects will also undergo independent environmental reviews to assess their impacts, including agricultural land conversion pursuant to General Plan Policies. Therefore, the Treatment Plant expansion is a logical extension of existing urban development and will therefore not be the cause of or involve other changes in the existing environment which could result in conversion of farmland to non-agricultural uses.

BIOLOGICAL RESOURCES: *Would the project;*

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less Than Significant Impact. This project is not located within or adjacent to the Kern River riparian habitat area, but is within the Metropolitan Bakersfield Habitat Conservation Plan (HCP) area. This plan, in agreement with the California Department of Fish and Game and the United States Fish and Wildlife Service, includes ordinance requirements for all development projects in the HCP area. Impacts would be less than significant.

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

Less Than Significant Impact. There are no wetlands adjacent to or near the project site and no federally protected wetlands occur on-site. However, the Branch 2 Canal runs along the western boundary (Gosford Road) of the project area. This section of the Canal is piped and no impacts are expected. However, the National Wetlands Inventory (NWI) Map for the Gosford USGS 7.5-Minute Quadrangle identifies four areas located within the 16 MGD Wastewater Treatment Plant No. 3 area, Section 33, Township 30 South, Range 27 East. One is classified as palustrine unconsolidated bottom artificially flooded excavated (PUBKx), which corresponds to the location of the 4 existing storage ponds. The second area is also classified as PUBKx and corresponds to the location of the existing sludge solar drying beds. The third area is classified as palustrine unconsolidated shore artificially flooded excavated (PUSKx) and corresponds to the historic Panama Slough channel that traversed the eastern half of

Section 33. No evidence of the historical channel remains. The existing 16 MGD facilities and non food agricultural crop production altered this area, and this topographic feature has been eliminated. The fourth area, also classified as PUBKx is related to the prior discharge of the American Yeast Company (AYC). From 1983 to 2002, the AYC discharged wastewater effluent for non-food crop production to an approximately 400-acre area, located south of the four existing storage ponds. With the cessation of the effluent discharge and elimination of agricultural production, the two conditions which were the cause of this area, have been removed. Based on the above information, no wetlands meeting the United States Army Corps of Engineers (USACE) 1987 criteria exists on-site; therefore, impacts to federally protected wetlands will be less than significant.

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant Impact. The Metropolitan Bakersfield Habitat Conservation Plan (County of Kern 1994) has been adopted as a policy tool to implement the MBHCP through collection of a development impact fee (City of Bakersfield and County of Kern 2002) and also is implemented by Ordinance 15.78.020 of the City of Bakersfield Municipal Code (City of Bakersfield 2002). The plan addresses biological impacts within the Metropolitan Bakersfield General Plan Area. The MBHCP does not eliminate the need to consider endangered species under CEQA, but has established programmatic mitigation for project impacts on such species. The project will pay the appropriate fee specified by the MBHCP. The proposed project will be required to comply with this plan and, therefore, will not be in conflict with either local biological policy or ordinance. Less than significant impacts are identified.

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Less Than Significant Impact. As discussed above, the project is subject to terms of the MBHCP along with Section 10 (a)(1)(b) and Section 2081 permits issued to the City by the U.S. Fish and Wildlife Service and California State Department of Fish and Game (County of Kern 1994). The MBHCP is a joint program of the City of Bakersfield and Kern County that was undertaken to assist urban development applicants in complying with State and federal endangered species laws. Terms of the MBHCP require all applicants for all development projects within the plan area to pay habitat mitigation fees and notify agencies prior to grading. The proposed project will comply with the MBHCP. As such, impacts would be less than significant.

CULTURAL RESOURCES: *Would the project;*

c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less Than Significant Impact. The project site is not located in or near the Shark Tooth Mountain bone bed, which is the only unique paleontological resource identified in the Metropolitan Bakersfield area. In addition, topography of the site is relatively flat and therefore, construction of the project will not destroy any unique geologic structures because excavation is not expected to incorporate deep cuts within a sensitive paleontological area. Moreover, the MBGP EIR indicated that the Metropolitan Bakersfield area, which includes the project site, is immediately underlain by sediments and rocks of quaternary age. Geologic records for Metropolitan Bakersfield indicate that the area is underlain by recent alluvial deposits at all depths that are likely to be reached by excavations associated with development. The MBGP EIR indicated that these alluvial deposits appear to be too young to contain significant fossil remains. Therefore, the proposed project is not expected to impact paleontological or unique geologic resources.

GEOLOGY AND SOILS: *Would the project;*

a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (refer to Division of Mines & Geology Special Publication No.42)

Less Than Significant Impact. Bakersfield and the San Joaquin Valley are within a seismically active area. According to the Metropolitan Bakersfield General Plan, which uses the Alquist-Priolo Earthquake Fault Zoning map as its base, major active fault systems border the southern portion of the San Joaquin Valley. Among these major active fault systems are the San Andreas, Breckenridge-Kern County, Garlock, Pond Poso, and White Wolf faults. There are numerous additional smaller faults suspected to occur within the Bakersfield area which may or may not be active. The active faults have a maximum credible Richter magnitude that ranges from 6.0 (Breckenridge -Kern Canyon) to 8.3 (San Andreas). Potential seismic hazards in the planning area involve strong ground shaking, fault rupture, liquefaction, and landslides.

Future structures proposed on the project site are required by state law and City ordinance to be constructed in accordance with the Uniform Building Code (UBC)(seismic zone 4), which has the most stringent seismic construction requirements in the United States), and to adhere to all modern earthquake construction standards, including those relating to soil characteristics. This will ensure that all seismically related hazards remain less than significant.

ii. Strong seismic ground shaking?

Less Than Significant Impact. See answer to 4.6.a.i.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction potential is a combination of unconsolidated soil type, high ground water, and high potential seismic activity. According to the MBGP (2002), areas of high ground water are not present in the southwest portion of Metropolitan Bakersfield. Therefore, this project site does not demonstrate all three attributes necessary to have a significant liquefaction potential. See also the answer to 4.6.a.i. and 4.6.b.

iv. Landslides?

Less Than Significant Impact. Because of the relatively flat topography of the project site, landslides are not considered to be a potentially significant geologic hazard.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The soil types prevalent on the proposed site are listed in the California Soil Resource Lab Online Soil Survey. Based on this soil survey, the project site includes four different soil types; Kimberlina Fine Sandy Loam, Cajon Sandy Loam, Pits and Dumps, and Water. Two of these classifications define non-usable soils. The characteristics of these soil types are as follows:

Table 10.0A
Soil Characteristics

Soil Type	Characteristics
Kimberlina Fine Sandy Loam	Saline-Alkali, 0 to 2 percent slopes, Farmland of statewide importance, available water storage of 5 cm, maximum flood frequency-rare, well drained, Not hydric
Cajon Sandy Loam	Overblown, 1 to 2 percent slopes, Prime Farmland if irrigated, available water storage of 8.75 cm, Maximum flood frequency-rare, Somewhat excessively drained, Not hydric.
Pits and Dumps	Not Prime Farmland, available water storage of 0cm, Maximum flood Frequency-rare, and Not hydric
Water	Not Prime Farmland, available water storage of 0cm, Not hydric

Source: California Soil Resource, UC Davis, 2006

The majority of the soil on the Project site is classified as belonging to the Kimberlina fine sandy loam and the Cajon Sandy Loam. Both soils are well drained, alluvial fan deposits. Due to these characteristics and the relatively flat terrain, implementation of the project will not result in significant erosion, displacement of soils, soil expansion problems, or limit the use of septic systems, although, clearing and grading for construction may expose soils to short-term wind and water erosion. Implementation of erosion control measures as required by the City, adherence to all requirements set forth in the National Pollutant Discharge Elimination System (NPDES) permit for construction activities, adherence to applicable building codes in accordance with the Uniform Building Code as well as City ordinances and standards should reduce any impacts to less than significant levels.

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

Less Than Significant Impact. See answers to 4.6.a.i, 4.6.a.ii, and 4.6.b. In addition, the Seismic Hazard Atlas Maps of Kern County (KernCOG) do not indicate that the project area is subject to subsidence, liquefaction or other unique geological hazards.

d) Be located on expansive soil, as defined in the city's most recently adopted Uniform Building Code, creating substantial risks to life or property?

Less Than Significant Impact. According to the Metropolitan Bakersfield General Plan EIR (2002) (p.4.7-27) the Metropolitan Bakersfield area is not known to be comprised of soils with a high potential for soil expansion. Compliance with the policies of the General Plan, City and County Development Codes, and the UBC would reduce potential impacts to less than significant levels. See also answer to 4.6.b.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Less Than Significant Impact. The project site does not include the creation of septic tanks.

HAZARDS AND HAZARDOUS MATERIALS: *Would the project;*

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one quarter mile of an existing or proposed school?

Less Than Significant Impact. No existing or proposed schools are located within one quarter mile of the proposed project site. Less than significant impacts are anticipated in this regard.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The project is not located on any site catalogued on the most recent hazardous materials list compiled pursuant to Government Code Section 65962.5. No impact is identified.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The proposed project is not located within an airport land use plan or within 2 miles of a public use airport. The project is not located within any area subject to the land use restrictions of the adopted 1996 Kern County Airport Land Use Compatibility Plan which covers all of Kern County (County of Kern, Planning Department, 1996). The closest airports to the project location are the Bakersfield Municipal Airport and the Meadows Field Airport approximately 5.5 miles to the northeast and 9.8 miles to the north, respectively. Therefore, the project would not result in a safety hazard from airports for people residing or working in the project area. No impact is identified.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project is not located within 5,000 feet of the runway of any private airstrip. Therefore, the project would not result in a safety hazard for people residing or working in the project area. The adopted 1996 Kern County Airport Land Use Compatibility Plan uses this 5,000 foot distance as the maximum for land use considerations. No impact is identified.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The proposed project will not interfere with any local or regional emergency response or evacuation plans because the project will not result in a substantial alteration to the adjacent and area circulation system. However, note that as part of the project, the south half of McCutchen Road from the centerline will be improved from a dirt road to a new major arterial roadway per City standards. Acceleration and deceleration lanes may be constructed as necessary in the future to provide safety for ingress and egress to and from the Plant for the sludge hauling trucks and other major vehicles accessing the Plant. Such improvements will not be undertaken until traffic volumes increase such that mitigations are needed. Due to existing minor traffic volumes along Ashe Road, there is no need for traffic mitigation, although as Ashe Road develops, and the plant reaches full-capacity, mitigation may be required. At such a time the City of Bakersfield will consider possible construction of acceleration and deceleration lanes on Ashe road to provide safety for ingress and egress to and from the Plant for the sludge hauling trucks and other major vehicles accessing the Plant. The proposed project is consistent with the adopted City of Bakersfield Hazardous Materials Area Plan (January 1997). This plan identifies responsibilities and provides coordination of emergency response at the local level in response to a hazardous materials incident. Less than significant impact is identified.

h) Expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?

No Impact. This project is not located adjacent to a wild land area nor is it within the area covered by the Hillside Development Zone (HD), which has standards required by the City of Bakersfield Fire Department to address the issue of wild land fires and urban development. The project site consists of the existing 16

MGD wastewater treatment plant and vacant land which is surrounded by agricultural land that has been approved by the City for future residential and commercial development. None of these land uses is considered susceptible to wildland fire, and no areas containing flammable brush, grass, or trees exist within close proximity to the project site. No impacts are identified.

HYDROLOGY AND WATER QUALITY: *Would the project;*

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

No Impact. There are no streams or rivers on the project site. Existing drainage patterns will not be significantly altered. All development within the City of Bakersfield is required by ordinance to comply with an approved drainage plan (for every project) which avoids on-site and off-site flooding, erosion and siltation problems. The Wastewater Treatment Plant No. 3 has a nearly constant slope of approximately 10 feet per mile from north-northeast to south-southwest. One of the ancient Panama Slough channels runs northwest to southeast across the eastern half of Section 33. Under natural conditions, surface runoff from Section 33 would drain into the old Panama Slough channel into Sections 4 and 5 and continue to the southwest. Roads, ditches, and canal like levees limit and alter surface flow, but general drainage is towards the Buena Vista Lake bed, the southern terminus of the Kern River, about nine miles southwest of Section 33 (WDR Order No. R5-2003-0161).

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

No Impact. See answer to 4.8 c.

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

No Impact. The project does not involve the construction of housing (Refer to Project Description). No impact is identified.

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

No Impact. The project is not located within a 100-year or 500-year flood hazard area as mapped by the Federal Emergency Management Agency (FEMA) (FEMA 2004). Therefore, high risk flood (from topographic, drainage characteristics, distance from major rivers, etc.) does not occur on the project site. No impact is identified.

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

No Impact. The proposed project is not located within the Lake Isabella dam failure inundation area or the 100-year Flood Zone (City of Bakersfield and County of Kern 2002). Therefore, no impacts have been identified.

j) Inundation by seiche, tsunami, or mud flow?

No Impact. The project site is not located near any significantly sized body of water and is, therefore, not susceptible to a seiche or tsunami. The site is not located at the foot of any significant topographical feature with the potential to be subject to a mud flow. No impact is noted.

LAND USE AND PLANNING: *Would the project;*

a) *Physically divide an established community?*

Less Than Significant Impact. The project is in response to a rapidly developing southwest Bakersfield. The current wastewater treatment plant once located far from development is now surrounded by City Council approved General Plan Amendment/Zone Change, and Annexation projects which will allow the development of residential, commercial, and industrial uses in the project's immediate vicinity. These projects have already undergone environmental review and the environmental impacts have been adequately addressed. Upon LAFCO approval of the annexation of these properties into the City, the Treatment Plant will be required to serve these projects. Therefore, its expansion is a logical extension of existing urban development that does not physically divide, but rather helps support the Metropolitan Bakersfield Plan Area.

**Table 10.0B
Land Use/Zoning of Adjacent Properties**

LOCATION	LAND USE DESIGNATION	ZONE DISTRICT	EXISTING LAND USE
NORTH	Low Density Residential	One-Family Dwelling	Agriculture
SOUTH	Rural Residential	Exclusive Agriculture and Estate Residential	Agriculture and Estate Residential
EAST	Low Density Residential and General Commercial	One-Family Dwelling, Neighborhood Commercial	Agriculture
WEST	Low Density Residential, Commercial, Light Industrial, and Intensive Agriculture	One-Family Dwelling, Limited Multi Family Dwelling, Neighborhood and Regional Commercial, Light Manufacturing, and Agriculture	Industrial and Agriculture

b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

No Impact. The subject site has a land use designation of "P" (Public Facilities) and a zoning designation of "A" (Agriculture). The subject site is not in Williamson Act. The City of Bakersfield currently has a Conditional Use Permit (CUP) to operate the Wastewater Treatment Plant. The expansion of the plant will remain in compliance with its CUP. Therefore, the project will not conflict with its zoning or general plan designation. Further, the Metropolitan Bakersfield General Plan states in its Land Use Element (Page II-14, Policy 53) that the City wants to "Ensure that land use and infrastructure development are coordinated." The MBGP goes on to state in its Public Services Element (page X-9) that its goals for public services are to "1. ensure the provision of adequate sewer service to serve the needs of existing and planned development in the planning area. [...] 3. Provide trunk sewer availability to and treatment/disposal capacity for all metropolitan urban areas, to enable cessation or prevention of the use of septic tanks [...]." Expansion of the wastewater treatment plant attempts to fulfill these General Plan Goals and Policies. Therefore, there are no identified conflicts or inconsistencies with said policies or zoning regulations.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

Less Than Significant Impact. See answers to 4.4.a., 4.4.e., and 4.4.f

MINERAL RESOURCES: *Would the project,*

a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

Less than Significant Impact. The principal mineral resources extracted within the Metropolitan Bakersfield area are oil, natural gas, sand, and gravel. There are 14 oil fields in the Metropolitan Bakersfield planning area. Areas used for sand and gravel extraction are concentrated primarily along the floodplain and alluvial fan of the Kern River. Because the project's location is distanced from any alluvial fans and the Kern River, it is very unlikely that the project would contain sand and gravel that would be considered a valuable commodity; hence impacts to this resource are considered less than significant. Further, the project is not located within a state designated oil field or within an area of other important mineral resources. As indicated in both the 2010 and 2020 Metropolitan Bakersfield General Plan (1990, 2002), the Project site is not located within a Mineral Resource area, nor is it located within an area designated as Mineral Petroleum (R-MP). Therefore, impacts to oil and gas are considered less than significant.

b) *Result in the loss of availability of a locally-important mineral resource recovery site that is delineated in a local general plan, specific plan or other land use plan?*

Less than Significant Impact. See answer to 4.10.a.

NOISE: *Would the project result in;*

b) *Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?*

Less Than Significant Impact. The proposed project would not be expected to result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels. No sources of substantial ground-borne noise, such as pile driving, are proposed as part of the project. Standard construction activities, such as grading, excavation, and site preparation, are not expected to generate significant vibration or ground-borne noise.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The proposed project is not located within a land use plan or 2 miles of a public use airport (MBGP, 2002) nor is it subject to the land use restrictions of the adopted 1996 Kern County Airport Land Use Compatibility Plan which covers all of Kern County. Therefore, the project would not have the potential to expose people to excessive noise generated by aircraft or airport operations.

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. This project is not located within the vicinity (5,000 feet) of any private airstrip and therefore would not expose people residing or working in the project area to excessive noise levels.

POPULATION AND HOUSING: *Would the project,*

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project site does not contain any existing housing nor will it create any additional housing. Therefore, it will not displace any housing or people, necessitating construction of replacement housing elsewhere or displacement of individuals. Further, the project is required to be consistent with the Metropolitan Bakersfield General Plan and the City of Bakersfield Zoning Ordinance. There are no identified conflicts or inconsistencies with said policies or zoning regulations.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. See answer to 4.12.b, above.

PUBLIC SERVICES:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services;

i. Fire protection?

No Impact. The proposed project will not create any other services or structures that would require any fire protection services beyond those already provided.

ii. Police protection?

Less Than Significant Impact. The proposed project will likely cause the treatment plant to increase the number of staff, although the degree to which staff would be increased is predicted at, approximately, a total of 30 employees at full capacity; an increase of only 11 people. This increase in possible police protection requirements is considered less than significant.

iii. Schools?

No Impact. The proposed project will not create households or facilities requiring school services.

iv. Parks?

No Impact. The proposed project will not require the provision of park services.

v. Other public facilities?

No Impact. Due to the nature of the project, no other public facilities should be affected by this project. Moreover, the Metropolitan Bakersfield General Plan states in its Land Use Element (Page II-14, Policy 53) that the City wants to "Ensure that land use and infrastructure development are coordinated." The MBGP goes on to state in its Public Services Element (page X-9) that its goals for public services are to "1. Ensure the provision of adequate sewer service to serve the needs of existing and planned development in the planning area. [...] 3. Provide trunk sewer availability to and treatment/disposal capacity for all metropolitan urban areas, to enable cessation or prevention of the use of septic tanks [...]." Expansion of the wastewater treatment plant attempts to fulfill these General Plan Goals and Policies.

RECREATION: Would the project:

a) *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No Impact. The project proposes no increase in population for the area and would, therefore, not result in an impact upon the quality or quantity of existing recreational opportunities or create a substantial need for new parks or recreational facilities. Additionally, the project will not include the creation of any recreational facilities.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

No Impact. See response to 4.14.a.

TRANSPORTATION/TRAFFIC: Would the project;

c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

No Impact. The proposed project is not located within an airport land use plan or within the vicinity of any public or private airstrips. The closest airports to the project location are the Bakersfield Municipal Airport and Meadows Field Airport, approximately 5.5 miles to the northeast and 9.8 miles to the north, respectively. Additionally, because the project would not contain any high-rise structures, it does not have the potential to affect air traffic patterns.

e) *Result in inadequate emergency access?*

Less Than Significant Impact. The proposed project would be required to comply with all emergency access requirements adopted by City, County, Regional, and State agencies. Site access requirements are set forth in the City of Bakersfield Municipal Code. These requirements and all others required to be included in the project design will be verified by the appropriate agency prior to project approval.

f) *Result in inadequate parking capacity?*

Less Than Significant Impact. The zoning ordinance requires that parking appropriate to each type of land use be provided. The project will adhere to all parking requirements. Therefore, no significant parking impacts have been identified for this project.

g) *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?*

Less than Significant Impact. The project is not anticipated to be inconsistent with any policies or programs supporting alternative transportation and shall by ordinance be required to pay transportation impact fees which in part are used to support mass transit (acquisition of buses for GET). The proposed project would not involve any change in the location of bus routes, stops, or other facilities used for alternative transit. As a result, no significant impacts are anticipated.

UTILITIES AND SERVICE SYSTEMS: *Would the project;*

a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Less Than Significant Impact. The project is proposed to proceed at this time to avoid overload of the existing treatment plant facilities as planned growth in the service area occurs. The proposed project is also in response to the requirement of WDR Order No. R5-2003-0161 to meet future treatment standards by April 15, 2010. Expansion and enhanced secondary treatment as well as other design features listed in the project description will keep the plant in compliance with wastewater treatment requirements of the RWQCB and therefore, is not considered a significant impact.

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

No Impact. The proposed project is the expansion of existing wastewater treatment facilities, and all environmental impacts associated will such have either been addressed in previous sections in this IS/NOP or will be studied as part of the Environmental Impact Report.

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

Less Than Significant Impact. The proposed project is a wastewater treatment facility. The City will adhere to all city, county, state, and federal requirements pertaining to storm water. The wastewater treatment plant already retains its on-site storm water on the premises and will continue to accept any increased run-off that may result from future operation of the plant. Further, the plant will continue to operate in conformance with its existing Waste Discharge Requirements (WDR) as set forth by the California Regional Water Quality Control Board (CRWQCB) in Order No. R-5-2003-0161 as may be amended for the treatment plant expansion.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. Currently, the wastewater treatment plant uses on-site well water for its few on-site needs, but will require additional water beyond that available through the groundwater well. The facility also utilizes some of the treated effluent for wash water where it is appropriate to do so. The treatment plant plans on acquiring water service through the City of Bakersfield Water Resources Department to provide additional volumes of wash water and general internal maintenance water for the facility as demand increases in future years. All needed water for onsite uses would be minimal and would not constitute a significant impact.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed project is an expansion of a wastewater treatment plant which provides treatment services to western Bakersfield. The proposed project is in response to increased need for wastewater treatment capacity due to continued development within western Bakersfield.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Currently, approximately, 5 cubic yards of grit per day are removed from the treatment facility and transported to the Mt. Vernon Green Waste Facility for use in compost. Expansion of the plant will result in an estimated 10 cubic yards of grit per day to be transported to the Green Waste Facility upon project build out. Currently, approximately two truck loads a week of debris from the screenings, equaling approximately 5 cubic yards, are transported to the Bena Landfill for disposal. Expansion of the plant will result in an estimated 10 cubic yards a week at project build out. In addition, a minimal amount of office waste will continue to be transported to the Bena Landfill, which as indicated in the Metropolitan Bakersfield General Plan (2002), has a total of 70 million cubic yards of capacity and a projected lifespan of 65-75 years. Moreover, as indicated in the MBGP (2002), which

included the project area, the Bena Landfill has adequate capacity to serve the planning area, and therefore, will have the capacity to serve the proposed expansion of the WWTP No. 3. Compared to the 4,500 tons daily limit that the Bena Landfill is permitted for, the anticipated waste volumes from the proposed project are insignificant. No adverse impacts to landfill operations or substantial increases in solid waste at the landfill should occur.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The project will comply with all local, state, and federal requirements for integrated waste management, biosolids management, and solid waste disposal such as, but not limited to, the City of Bakersfield Municipal Code Section 8.32. Further, all biosolids transported from the site to city owned farmland located at Treatment Plant No. 2 will continue to comply with the Waste Discharge Requirements and the Biosolids Management Plan as approved by the Regional Water Quality Control and adopted by the City of Bakersfield. Moreover, all issues associated with the land application of biosolids from Wastewater Treatment Plant No. 3 were addressed in previous Waste Discharge Requirements, General Orders, and City Biosolids Management Plans (City of Bakersfield Biosolids Management Plan, 2001 & 2002). Therefore, the impact of any increase in the transportation and land application of solids from Wastewater Treatment Plant No. 3 would not violate any federal, state, and local statutes and regulations related to solid waste.

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13.0 MITIGATION MONITORING PROGRAM

This section will be completed as part of the Final EIR.

14.0 COMMENTS AND RESPONSES

This section will be completed as part of the Final EIR.