# CITY OF TRACY GENERAL PLAN DRAFT SUPPLEMENTAL EIR

STATE CLEARINGHOUSE NUMBER: 2008092006


City of Tracy | July 22, 2010

DESIGN, COMMUNITY & ENVIRONMENT

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# 1 FOREWORD

This Draft Recirculated Supplemental Environmental Impact Report (EIR) has been prepared to provide an assessment of the potential environmental consequences of adoption and implementation of the proposed City of Tracy General Plan Amendment, which is an amendment to the City of Tracy's General Plan (adopted in 2006), and proposed Sustainability Action Plan. This assessment is designed to inform City of Tracy decision-makers, other responsible agencies and the public-at-large of the nature of the proposed General Plan Amendment and Sustainability Action Plan and their effects on the environment. This Supplemental EIR is a supplement to the City of Tracy General Plan EIR certified by the City of Tracy in 2006, and has been prepared in accordance with and in fulfillment of California Environmental Quality Act (CEQA) requirements. The City of Tracy is the Lead Agency for the project.

This chapter describes the history of the proposed General Plan Amendment and Sustainability Action Plan, proposed changes to the General Plan, and measures in the Sustainability Action Plan, as well as the scope and organization of this Draft Recirculated Supplemental EIR.

## *A. History of the General Plan Amendment*

In 2006, the City of Tracy adopted the General Plan, which was an update to the City's 1993 General Plan. Prior to adoption of the General Plan, the City of Tracy certified the General Plan EIR (SCH# 1992122069). Following the City Council adoption of the General Plan, the City submitted its proposed Sphere of Influence (SOI) to the Local Agency Formation Commission (LAFCO) for approval. The SOI is the area outside of the City limits that the City expects to annex and urbanize in the future.

The primary focus of LAFCO is to ensure efficient public services delivery and avoid duplication of services across jurisdictional boundaries. When a city submits a boundary change to LAFCO, the city is also required to submit a corresponding Municipal Services Review (MSR). LAFCO uses the MSR to determine whether the city, in its role as a service provider, has the

physical capacity and financial ability to accommodate the planned growth in its proposed SOI. In early 2007, LAFCO informed City staff that Tracy's MSR review would be subject to new LAFCO policies and guidelines, which were adopted on September 21, 2007. The LAFCO policy changes regarding SOIs necessitated that the SOI proposed by the City of Tracy in 2006 be reduced to show a 30-year development horizon and a 10-year development horizon.

On December 12, 2007, City staff conducted a community meeting to discuss the new LAFCO polices and to receive feedback. City staff presented the revised draft SOI at City Council meetings held on January 15, February 5, April 1 and June 3, 2008. In addition, a workshop was held with the City Council on July 15, 2008. The City Council accepted it with minor modifications, and directed staff to prepare a General Plan Amendment to formalize the revised SOI. This Draft Supplemental EIR addresses the resulting General Plan Amendment. In addition to the SOI changes described above, the General Plan Amendment incorporates new State legislation regarding flooding policies and enhanced goals, objectives, policies and actions regarding sustainability and the reduction of greenhouse gas (GHG) emissions, including measures called for in the proposed Sustainability Action Plan.

The City of Tracy has prepared this Draft Supplemental EIR to analyze the potential environmental consequences associated with this proposed General Plan Amendment. Because this amendment reflects only minor changes to the General Plan, this document is a supplement to the General Plan EIR in accordance with Section 15163 of the CEQA Guidelines.

In 2007, the City of Tracy commissioned an economic development report that was prepared by Gruen + Gruen Associates ("the Gruen report"). Using market research and analysis, this report forecasts demand for retail, office and industrial space through 2022, a similar period to that covered by the Tracy General Plan. The City's SOI Amendment Application to LAFCO relies on the development projections contained in the Gruen report.

In general, this EIR projects a greater amount of development than the Gruen report because it is based on past development trends, which have been high in recent years. Therefore, this EIR uses a conservative approach by analyzing a greater amount of development than is estimated in the Gruen report. However, the industrial projections in this EIR are lower than those shown in the Gruen report because this EIR reflects City policy to permit a wider mix of uses in industrial areas, such as retail and office uses that will help to make the industrial development successful. Therefore, this EIR's industrial development assumption is less intense than the assumptions used in the Gruen report, but is more accurate because it accounts for City policy.

### *B. General Plan Amendment Description*

This section describes the proposed General Plan Amendment. For a full description of the General Plan Amendment, readers should review the General Plan Amendment itself, which is being published separately and is available on the City's website, www.ci.tracy.ca.us. A summary of the General Plan Amendment is also shown in Appendix A.

The General Plan is the principal policy document for guiding future conservation and development of the City of Tracy. The General Plan Amendment is primarily aimed at revising the General Plan to comply with new LAFCO policies regarding the City's MSR and SOI. The General Plan Amendment proposes to contract the SOI drafted by approximately 9 square miles from the SOI contained in the General Plan. Figure 1-1 shows those areas in which the SOI is proposed to be reduced to comply with new LAFCO policies.

The revised SOI is 20 square miles, which is 9 square miles smaller than previously planned and drafted by the Tracy City Council. This represents a decrease of approximately 20,000 residential units. To comply with the new LAFCO policies, the City of Tracy has identified a 30-year SOI, as well as a 10-year horizon. The SOI and 10-year horizon are shown in Figure 1-2.

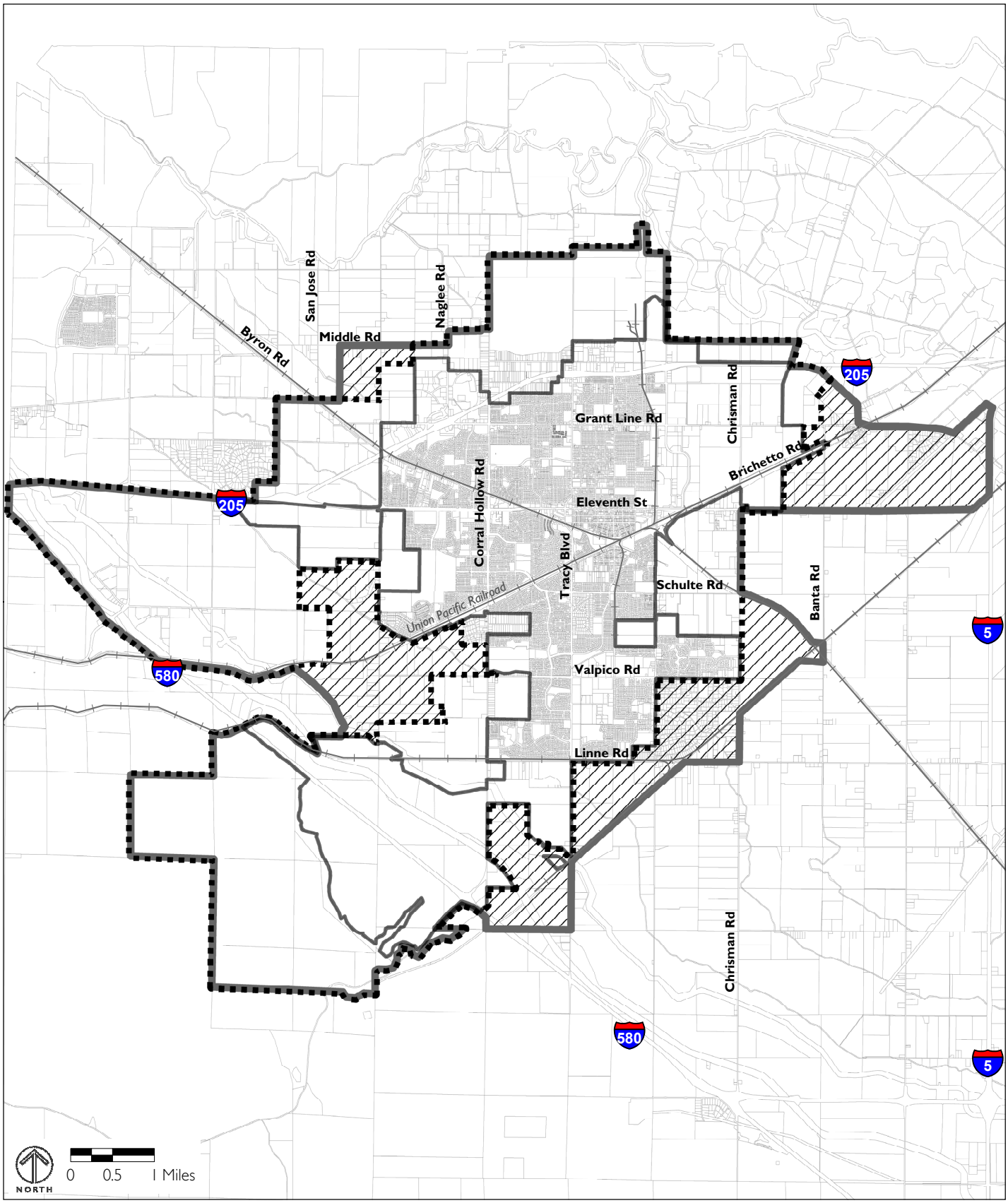



**FIGURE 1-1**

City Limits

2006 Draft Sphere of Influence

Proposed 2010 Sphere of Influence

Contraction

## CONTRACTIONS TO THE 2006 PROPOSED SPHERE OF INFLUENCE

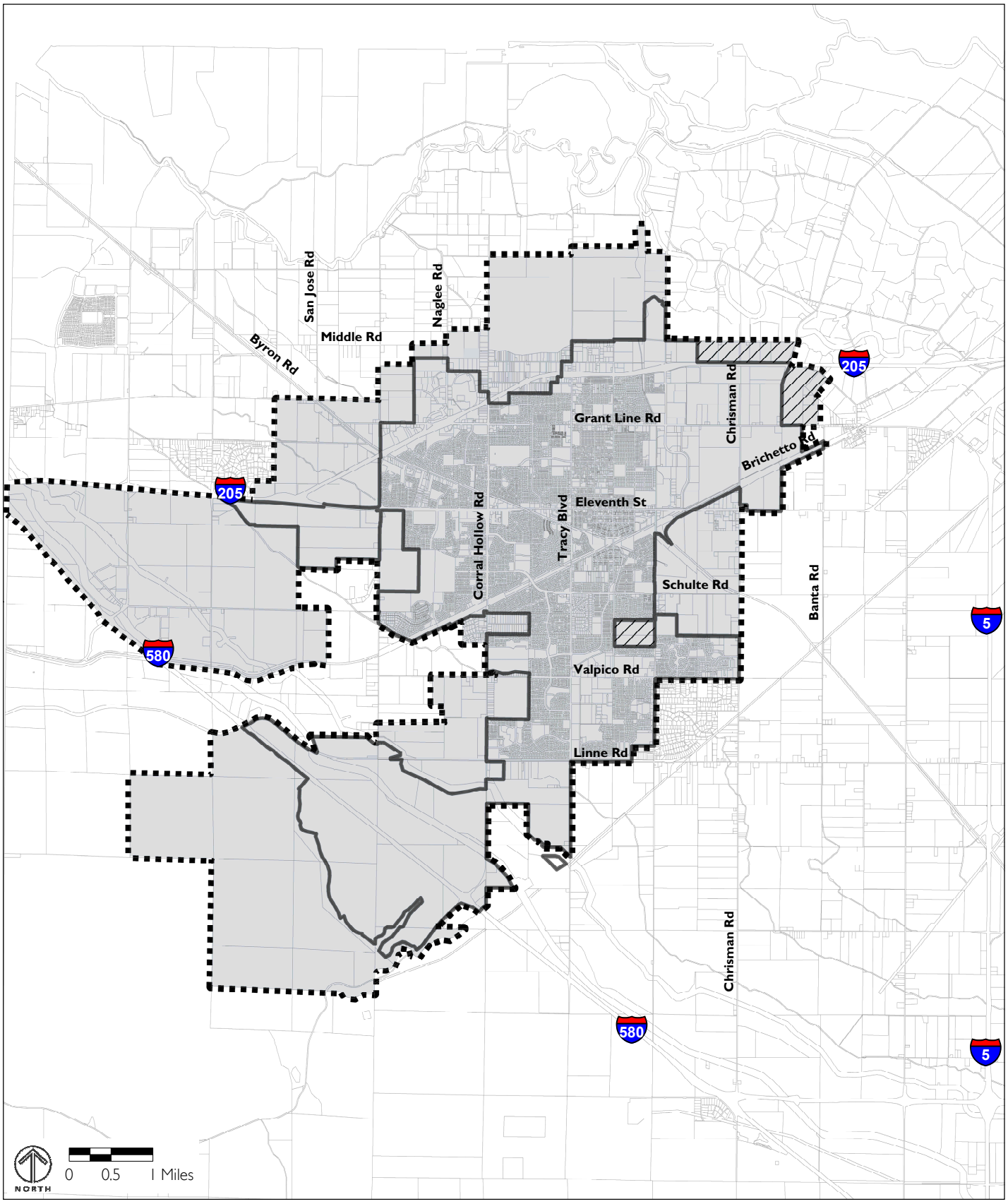



**FIGURE 1-2**

City Limits

Proposed Sphere of Influence

Proposed 10-year Horizon

Proposed 30-year Horizon

## PROPOSED 30-YEAR SPHERE OF INFLUENCE AND 10-YEAR HORIZON

**CITY OF TRACY**
GENERAL PLAN
DRAFT SUPPLEMENTAL EIR

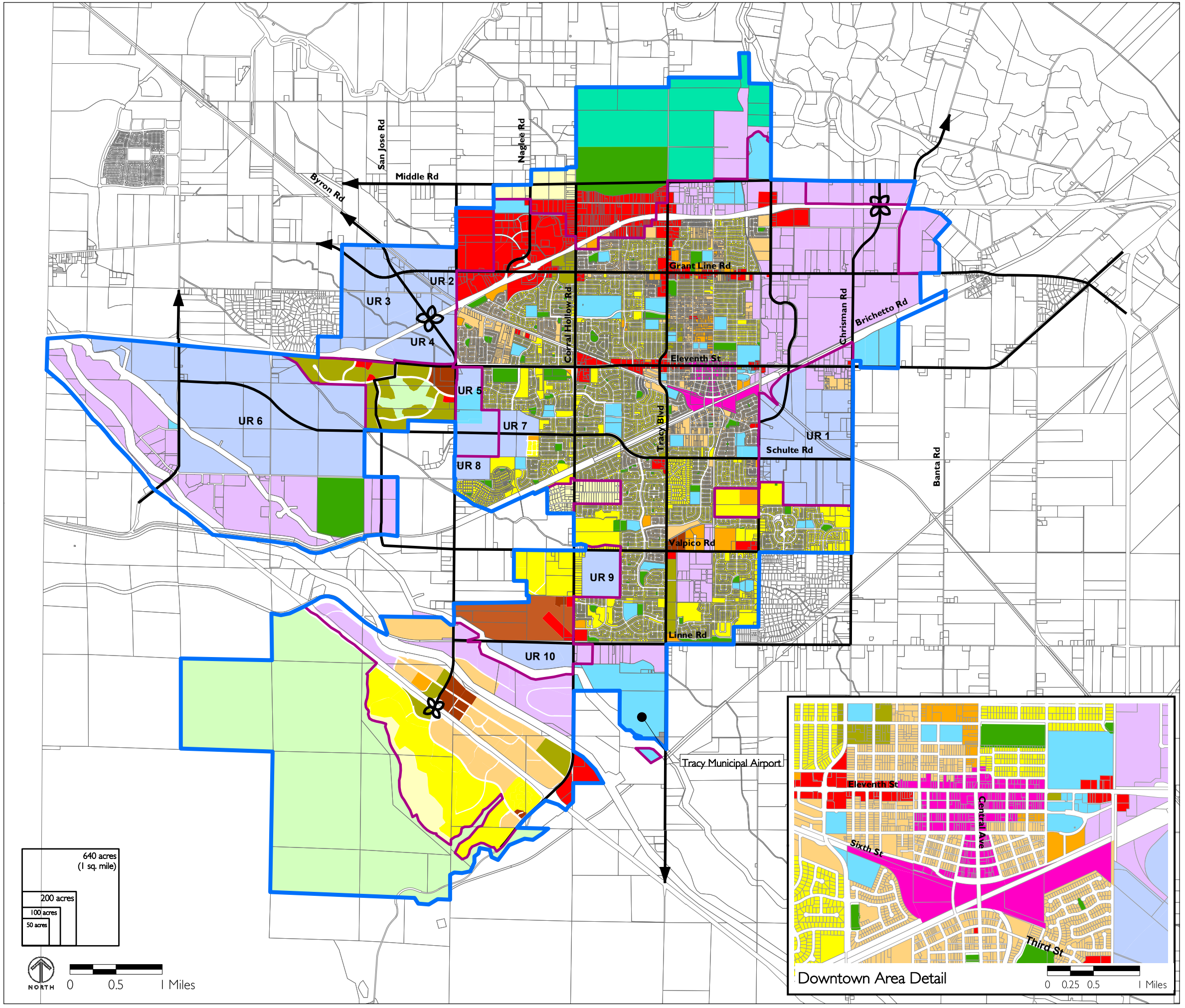
Because the SOI included in the proposed General Plan Amendment is 9 square miles smaller than the previously drafted SOI, there are several areas outside of the City limit that were included in the planning process for the General Plan (in 2006) that will no longer be subject to the General Plan under the General Plan Amendment. These areas are described below:

- **Area to the West of City Limits.** This contraction area includes approximately 1,650 acres of land that is roughly located west of Corral Hollow Road, between Eleventh Street and Linne Road. These lands were previously designated in the General Plan as Residential Low and Urban Reserve.
- **Area to the Northwest of City Limits.** This contraction area includes approximately 270 acres of land that is located south of Middle Road, between San Jose Road and Naglee Road. The area is located to the west of the I-205 Regional Commercial area and was previously designated as Urban Reserve.
- **Area to the Northeast of City Limits**. This contraction area includes approximately 1,655 acres of land that is located south of Interstate 205 and to the east of Chrisman Road, which was previously designated as Urban Reserve. This area includes the area commonly known as "Banta" that is situated around an existing agricultural town at the intersection of Grant Line Road and the Union Pacific Railroad. In addition, this contraction area includes approximately 4 acres of land to the east of Chrisman Road and south of Brichetto Road that was previously designated as Commercial.
- **Area to the Southeast of City Limits.** This contraction area includes approximately 2,435 acres of land that was previously designated as Aggregate, Commercial, Industrial, Public Facilities and Residential Very Low. These lands are located to the south of Schulte Road and to the north of Interstate 580, between Corral Hollow Road and Banta Road.

As a result of the proposed SOI contraction, some of the acreages of the land use designations in the SOI would be reduced. The land use designations are shown in Figure 1-3, below. Table 1-1 presents a comparison of the amount

**FIGURE 1-3**

# PROPOSED GENERAL PLAN LAND USE DESIGNATIONS




- City Limits
- Proposed Sphere of Influence
- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Traditional Residential - Ellis
- Commercial
- Office
- Industrial
- Downtown
- Village Center
- Public Facilities
- Park
- Open Space
- Agriculture
- Aggregate
- UR — Urban Reserve
- **Major Arterial/Expressway/Boulevard**

TABLE 1-1 **LAND USE DESIGNATION CHANGES (CITY LIMITS AND SOI)**

| Land Use Designation | General Plan (adopted in 2006) (Acres) | % of Total | General Plan Amendment (proposed 2010) (Acres) | % of Total |
|---|---|---|---|---|
| Residential Very Low | 1,138 | 3.9% | 456 | 2.0% |
| Residential Low | 3,808 | 13.5% | 3,875 | 17.0% |
| Residential Medium | 1,529 | 5.3% | 1,530 | 6.7% |
| Residential High | 247 | 0.9% | 245 | 1.1% |
| TR – Ellis | - | - | 287 | 1.3% |
| Commercial | 1,253 | 4.3% | 1,269 | 5.6% |
| Office | 546 | 1.9% | 546 | 2.4% |
| Downtown | 116 | 0.4% | 116 | 0.5% |
| Village Center | 123 | 0.4% | 131 | 0.6% |
| Industrial | 4,121 | 14.3% | 4,015 | 17.6% |
| Urban Reserve | 7,946 | 27.5% | 4,044 | 17.7% |
| Public Facilities | 1,433 | 5.0% | 1,057 | 4.6% |
| Park | 461 | 1.6% | 453 | 2.0% |
| Open Space | 3,834 | 13.3% | 3,551 | 15.6% |
| Aggregate | 1,042 | 3.6% | 10 | 0.0% |
| Agriculture | 1,230 | 4.3% | 1,230 | 5.4% |

of acres and percentage of each land use designation between the General Plan and the proposed General Plan Amendment. The proposed SOI contraction would eliminate the need for the previously planned extension of Valpico Road connecting a north-south arterial and Eleventh Street. This roadway extension was included in the General Plan and would be eliminated through the General Plan Amendment. The roadway extensions and classifications proposed under the General Plan Amendment are shown in Figure 1-4. The General Plan Amendment also adds new goals, objectives, policies and actions to strengthen the City's sustainability-related policy framework and to be consistent with the Sustainability Action Plan. A list of proposed policy revisions to the General Plan is included in this Draft Supplemental EIR as Appendix A. Additionally, the "Golden Valley Parkway," which was intended as a potential Interstate 205 alternative roadway, has been removed from the Circulation map, General Plan Land Use Designations map, and related Circulation Element policies. This is in response to on-going efforts with the San Joaquin Council of Governments (SJCOG) to alleviate Interstate 205 traffic with alternative expressways.

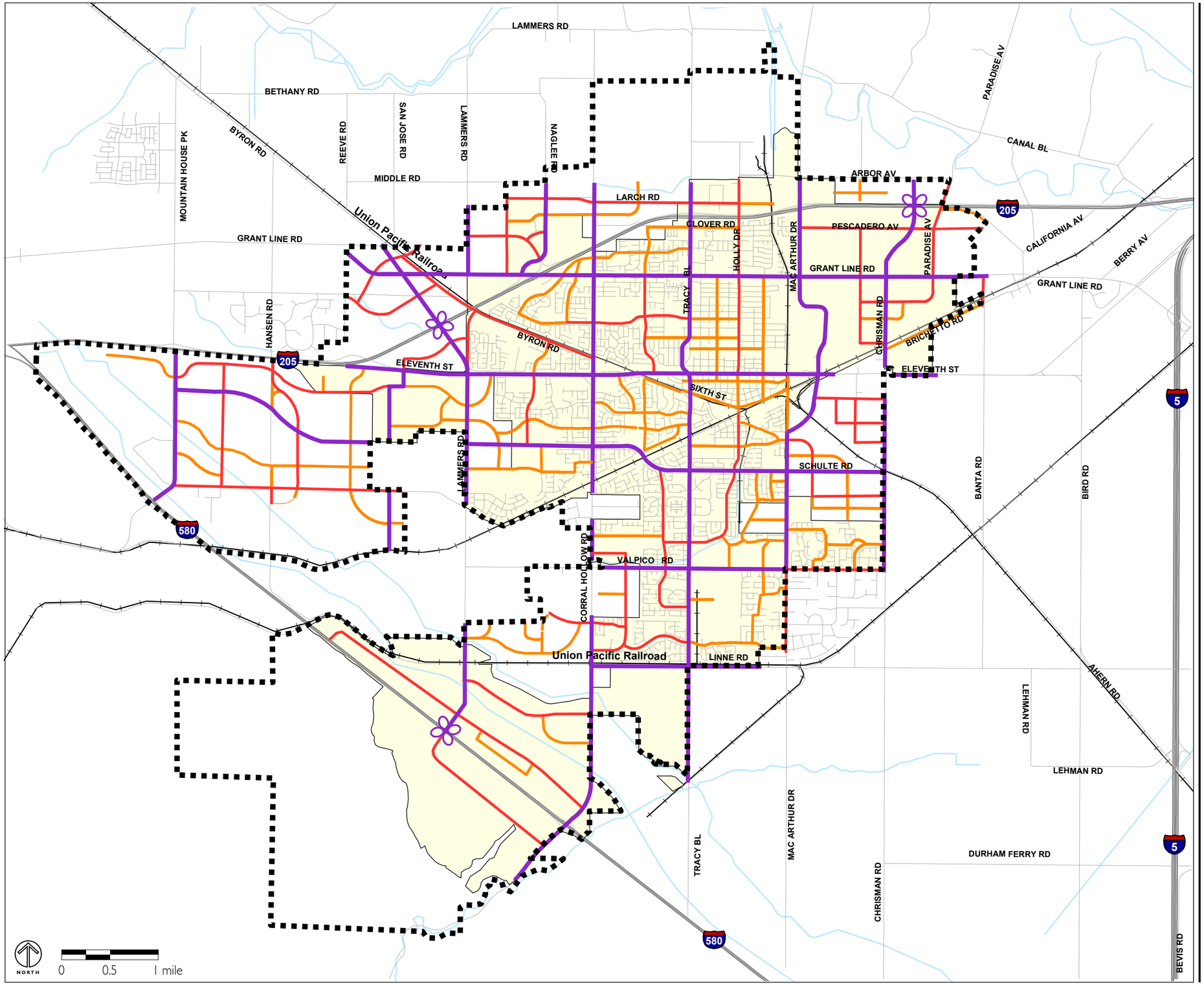
### *C. History of the Sustainability Action Plan*

The Sustainability Action Plan is a detailed, long-range strategy to achieve sustainability in the sectors of GHG emissions, energy, transportation and land use, solid waste, water, agriculture and open space, biological resources, air quality, public health, and economic development.

The Sustainability Action Plan is a result of the City's participation in the Emerald Cities Program, a public-private partnership sponsored by the California Natural Resources Agency (CNRA) and administered by the State Department of Conservation (DOC). Tracy is enrolled as one of two pilot cities in the Emerald Cities Program. Through this program, the City of Tracy is working with the DOC to accelerate progress toward the State's aggressive environmental goals, including those indicated in AB 32 and SB 375, by

FIGURE 1-4

# ROADWAY CLASSIFICATION AND CONCEPTUAL ALIGNMENTS




- Major Arterial / Expressway / Boulevard
- Minor Arterial / Major Collector
- Other Collector
- City Limits
- Sphere of Influence

Data Source: Fehr & Peers, 2005.

**Notes:**

**1. Conceptual layout only**

**2. Revisions/additions to minor arterials and other collectors will occur during development process.**

**3. The location of the Chrisman/Paradise interchange shown on this map represents one option for the interchange location, but a final location has not yet been selected. Another option for this area is to use Paradise Road rather than construct a new overcrossing.**

selecting environmental priorities and developing the Sustainability Action Plan.[1]

In the fall of 2009, the City launched a website for its Emerald Tracy program, www.emeraldtracy.org, to provide information on the City's sustainability goals and targets, and the process the City is undertaking to achieve them. Through an on-line survey, the website invited visitors to submit feedback to shape the Emerald Cities process. Survey respondents have submitted a range of ideas for reducing Tracy's environmental impacts, including following strategies:

- Additional jobs in Tracy to reduce commuting.
- Improved transit connectivity.
- Water-conserving landscaping guidelines.
- Expanded recycling and composting.
- Incentives for energy-efficient retrofits.
- Expanded bicycle and pedestrian paths.

The survey also asked for feedback on the desired outcomes of the Emerald Tracy process. Desired outcomes submitted by respondents include clean air, cost savings for the City and residents, a more dynamic downtown, and Tracy becoming a model of sustainability for other cities. The feedback collected through the Emerald Tracy website shaped the development of the measures included in the proposed Sustainability Action Plan.

The City held a Community Workshop on Wednesday, February 17, 2010 to discuss draft sustainability targets and measures for the Sustainability Action Plan, as well as priorities for future funding opportunities. The workshop also featured an interactive exercise in which participants used dots to identify their preferred measures among the draft sustainability measures and the new measures that were suggested during the brainstorming session. The follow-

[1] AB 32 and SB 375 are explained in detail in Chapter 4.16, Greenhouse Gas Emissions.

ing measures, which are discussed further in Chapter 3, were the most popular measures that received the most dots:

- Financing for Energy Efficiency and Renewable Energy Projects (17 dots)
- Increased Transit to Bay Area Cities and San Joaquin Valley Employment Centers (13 dots)
- Increased Recycling (13 dots)
- Solar Panel Installations on Municipal Facilities (13 dots)
- Farmland Preservation Around Tracy (13 dots)
- Smart Growth, Urban Design and Planning (formerly called "Pedestrian Safety and Walkable Neighborhoods") (10 dots)
- Recycling Service for Multi-Family Housing (9 dots)
- Green Building and Energy Efficiency in the Design Guidelines (8 dots)
- Support for Bicycling (8 dots)
- Green Business Program (8 dots)

### *D. Sustainability Action Plan Description*

Implementation of the proposed Sustainability Action Plan is intended to support the State of California's ambitious emission reduction targets by guiding Tracy's actions to reduce its GHG emissions, conserve and protect natural resources, improve public health, promote economic vitality, and engage residents.

The proposed Sustainability Action Plan establishes targets related to a variety of sustainability topics, and sets forth measures that will assist the City in reaching those goals. The proposed Sustainability Action Plan sets a target of a 29 percent reduction of GHG emissions from 2020 Business As Usual (BAU) projected levels. GHG emissions in 2020 under BAU conditions are projected to be 1,748,970 metric tons carbon dioxide equivalent ($MTCO_2e$). The target therefore translates into a reduction of 507,201 $MTCO_2e$.[2] Implementation of the proposed Sustainability Action Plan is projected to reduce

[2] This target was calculated by multiplying the 2020 BAU GHG projection (1,748,970 $MTCO_2e$) by 0.29, which equals 507,201 $MTCO_2e$.

GHG emissions in Tracy by between 382,422 and 486,115 $MTCO_2e$, which represents an achievement of between 75 and 96 percent of the overall target.[3]

The measures proposed in the Sustainability Action Plan cover the sectors of energy, transportation and land use, solid waste, water, agriculture and open space, biological resources, air quality, public health, and economic development. The measures proposed for each of these sections are summarized below:

- **Energy** measures are projected to reduce energy consumption in Tracy by 40 percent decrease from BAU conditions. The proposed Sustainability Action Plan includes 16 measures to assist the City in reaching its energy conservation targets and six measures to assist the City in reaching its renewable energy targets.
- **Transportation and land use** measures are projected to reduce VMT compared to BAU conditions. In total, 27 of the measures in this Sustainability Action Plan will reduce VMT.
- **Solid waste** measures are expected to assist the City in reaching its waste diversion targets. The proposed Sustainability Action Plan contains eleven measures to reduce waste.
- **Water** measures are expected to assist the City in reaching its water conservation targets. The proposed Sustainability Action Plan includes eleven measures to conserve water.
- **Agriculture and open space** measures are expected to assist the City in reaching its agricultural conservation targets. The proposed Sustainability Action Plan contains three measures to conserve and/or expand agricultural land and six measures to expand open space.

[3] The range of GHG emission reductions is based on different models for measuring the benefits from the external State-level measures that improve fuel and vehicle efficiency. The lower range represents a conservative modeling approach; the upper range is based on a method of modeling these fuel and vehicle efficiency standards by the Bay Area Air Quality Management District, but adjusted for Tracy-specific data.

- **Biological resources** measures aim to mitigate any loss of critical habitat corridors through the Habitat Conservation Plan. In total, the proposed Sustainability Action Plan includes 17 measures to conserve biological resources.
- **Air quality** measures are expected to assist the City in reaching its goal to reduce the number of days exceeding air quality standards. The proposed Sustainability Action Plan includes 26 air quality measures.
- **Public health** measures aim to reduce obesity, improve access to healthy food and improve access to opportunities for physical activity. The proposed Sustainability Action Plan includes 21 public health measures.
- **Economic development** measures include 15 measures to increase jobs, six measures to attract and retain business, and four measures to retain and increase the amount of affordable housing.

### *E. EIR Recirculation*

In April 2009, a Draft Supplemental EIR for the General Plan Amendment was published, and a public review period ensued. During the public review period, the City of Tracy developed plans to prepare the Sustainability Action Plan. As part of the Sustainability Action Plan project, the City planned to conduct a GHG inventory and forecast, and model the GHG benefits of the Sustainability Action Plan. Because the GHG emission modeling would provide additional quantitative analysis that would inform the EIR, and because the General Plan Amendment would require additional edits to account for the Sustainability Action Plan, this Draft Recirculated Supplemental EIR was prepared, and it accounts for the Sustainability Action Plan and incorporates the additional GHG modeling information. This Draft Recirculated Supplemental EIR is intended to fully replace the April 2009 Draft Supplemental EIR, and a Final EIR will be prepared in response to comments on this Draft Recirculated Supplemental EIR.

Because the traffic modeling for this EIR was conducted before the Sustainability Action Plan was prepared, the traffic and associated air analyses in this Draft Recirculated Supplemental EIR only take into account some, but not all, of the trip reduction benefits resulting from the Sustainability Action Plan. Therefore, the traffic and air quality chapters provide a conservative analysis of the trip-related impacts resulting from implementation of the General Plan and Sustainability Action Plan.

## *F. EIR Type, Scope and Organization*

This section describes the type, scope and organization of this EIR.

### 1. EIR Type

CEQA Guidelines §15162 and §15163 contain provisions regarding Supplemental EIRs, and when they may be used in place of a full EIR or Subsequent EIR. According to CEQA Guideline §15162, a Subsequent EIR shall be prepared if changes are made to a project following certification of an EIR. According to CEQA Guideline §15163, a Supplemental EIR may be prepared in lieu of a Subsequent EIR if only minor changes would be needed to make the previous EIR adequately apply to the revised project. The changes contained in the proposed General Plan Amendment do not significantly change the General Plan. In addition, the proposed Sustainability Action Plan is consistent with the General Plan, and does not result in the need for substantial changes to the previous EIR. Therefore, this EIR has been prepared as a Supplemental EIR.

As a Program EIR, this Supplemental EIR is not project-specific. It does not evaluate the impacts of specific projects that may be proposed under the General Plan. Such projects will require separate environmental review to secure the necessary discretionary development permits. While future environmental review may be tiered off this Supplemental EIR, this Supplemental EIR is not intended to address impacts of individual projects.

**2. EIR Scope**

While the 2006 General Plan Draft EIR evaluated 15 environmental topics, this Draft Supplemental EIR contains only those environmental analysis chapters for which the findings of the 2006 General Plan Draft EIR would change as a result of the General Plan Amendment. As a result, no changes to the ten other chapters of the GP EIR have been made. In addition, in order to account for updated CEQA Guidelines, this Draft Supplemental EIR contains a new chapter on GHG emissions. The issues addressed in this Draft Supplemental EIR include the following:

- Land Use
- Population, Employment and Housing
- Traffic and Circulation
- Noise
- Air Quality
- GHG Emissions

Overall, there is a decrease in the intensity of impacts in most environmental topics from the 2006 General Plan EIR as a result of the proposed General Plan Amendment. As discussed in Section G, below, the only new impacts as a result of the proposed General Plan Amendment are Impacts AIR-3 and GHG-1, which are related to air quality and GHG emissions, respectively. Impact GHG-1 was not found in the 2006 General Plan EIR because GHG emissions were not yet evaluated under CEQA in 2006.

The chapters that follow this Foreword chapter in this Supplemental EIR are intended to replace their respective chapters from the 2006 General Plan EIR in their entirety, and the GHG Emissions chapter is intended to be added to the 2006 General Plan EIR. To facilitate this process, the chapters in this Supplemental EIR use the same chapter numbers as the chapters that they are to replace from the 2006 General Plan EIR, and the GHG Emissions chapter is placed at the end of the analysis section. Figure 1-5 below summarizes the process leading from the 2006 General Plan and EIR to the General Plan Amendment, Sustainability Action Plan and this Draft Supplemental EIR.

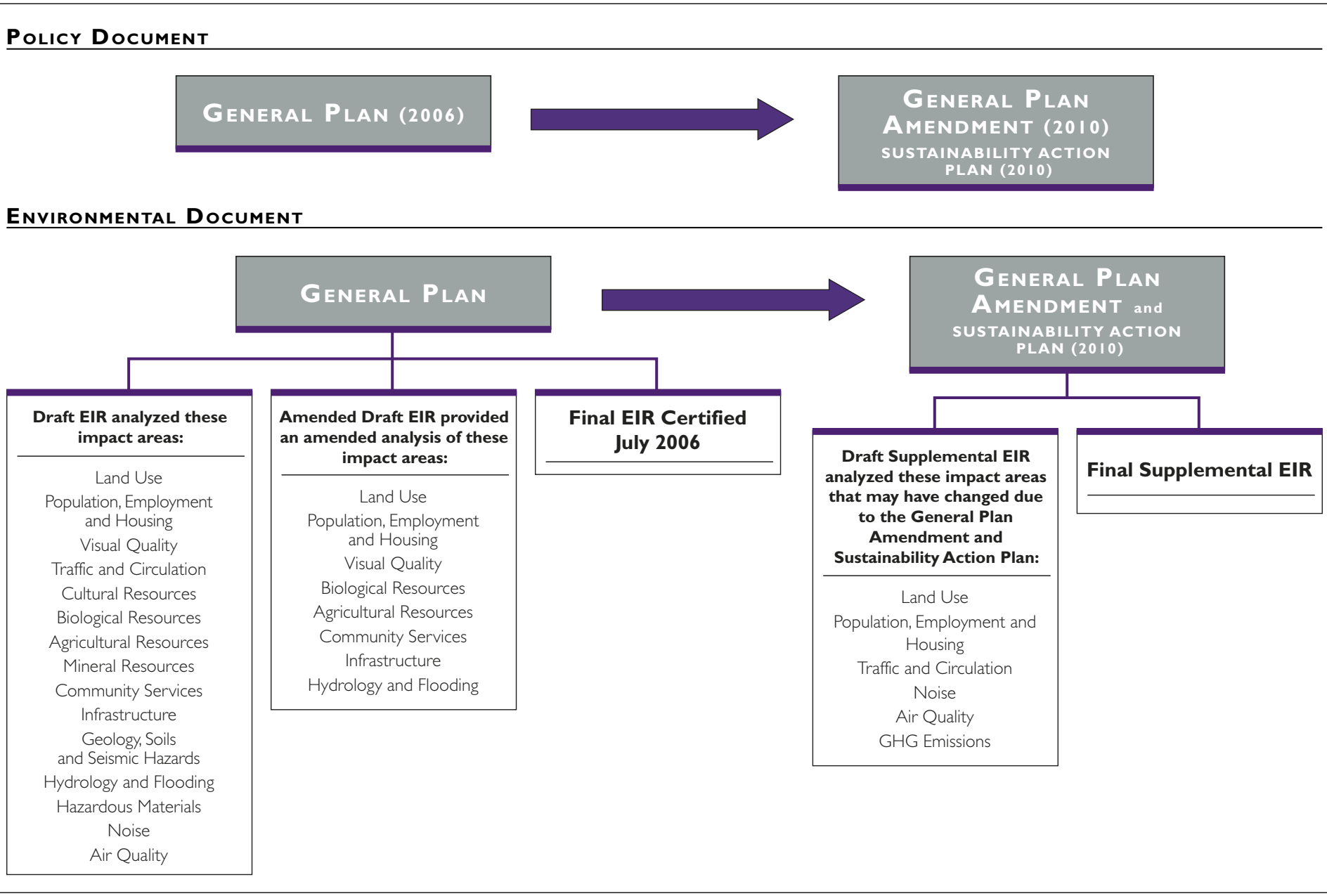



**FIGURE 1-5**

**HISTORY OF THE GENERAL PLAN AMENDMENT AND SUSTAINABILITY ACTION PLAN**

CEQA Guidelines §15126.6 requires that an EIR include the description and a comparative analysis of alternatives to the proposed project, including both a No Project Alternative and a reasonable range of alternatives that could feasibly attain the project's objectives and avoid or substantially lessen any of the significant effects of the project. However, CEQA Guidelines §15163(2b) states that a Supplemental EIR "need contain only the information necessary to make the previous EIR adequate for the project as revised." Because two new impacts are included in this EIR, this Supplemental EIR includes an additional alternatives analysis pertaining only to the new air quality and GHG impacts. For a full alternatives analysis of the 2006 General Plan, please see Chapter 5, Alternatives to the Proposed Project, of the 2006 General Plan Draft EIR.

It should be noted that there are a number of GHG emission reduction efforts underway at local, regional and State levels. Such efforts are described in detail in the Air Quality Element of the General Plan Amendment and Chapter 4.16, Greenhouse Gas Emissions, of this Supplemental EIR.

As described in Chapter 4.16, the Governor's Office of Planning and Research (OPR) recently released updated CEQA guidelines to address GHGs. The guidelines encourage agencies to consider a number of factors in evaluating GHG emissions, including the impact of the project on attaining the State's goal of reducing GHG emissions to 1990 levels by 2020, as directed in Assembly Bill (AB) 32, and the extent of potential reductions in GHG emissions from the proposed project in comparison to the existing setting.

The State is expected to experience population growth that would include increased vehicle usage and energy demand. As a result, long-term emissions would require substantial reductions to achieve AB 32 goals of reducing GHG emissions to 1990 levels by 2020, which is within the timeframe of the General Plan Amendment. Therefore, action to reduce emissions is necessary in order to reach that goal. As a result, in order to reduce a GHG impact to a less-than-significant level, an alternative would need to demonstrate how future growth would result in no additional GHG emissions, at a minimum.

### 3. EIR Organization

This Draft Supplemental EIR is organized into the following chapters:

- *Chapter 1, Foreword,* provides a preface and overview of the document and a description of the General Plan Amendment.
- *Chapter 2, Report Summary,* summarizes environmental consequences that would result from the proposed project, describes recommended mitigation measures, and indicates the level of significance of environmental impacts before and after mitigation. A Summary Table is also included for clarity.
- *Chapter 3, Project Description,* describes the proposed General Plan and Sustainability Action Plan in detail, including a summary of the chapters of the General Plan and a listing of proposed land use designation changes.
- *Chapter 4, Environmental Evaluation,* provides an analysis of the potential environmental impacts of the proposed project and presents recommended mitigation measures, if required, to reduce their significance. As noted above, it includes six subsections, on the subjects of land use; population, employment and housing; traffic and circulation; noise; air quality; and GHG emissions.
- *Chapter 6, CEQA-Required Assessment Conclusions,* discusses growth inducement, cumulative impacts, unavoidable significant effects and significant irreversible changes as a result of the General Plan.
- *Chapter 7, Report Preparers,* identifies the preparers of the Draft Supplemental EIR.

## *G. New Impacts Related to the General Plan Amendment*

The analysis in this EIR evaluates the environmental impacts associated with the General Plan, as amended in 2010. Therefore, this Draft Supplemental EIR includes environmental impacts that were also found in the 2006 General Plan Draft EIR.

There are two new significant impacts found in this Draft Supplemental EIR that were not found in the 2006 General Plan Draft EIR. Impact AIR-3, which is related to air quality in the San Joaquin Valley Air Basin, is found to be a significant and unavoidable cumulative impact. Impact GHG-1, which is related to an increase in GHG emissions, is found to be significant and unavoidable. Impact GHG-1 was not found in the 2006 General Plan EIR because GHG emissions were not analyzed in 2006. These new impacts could not be reduced to a less-than-significant level by any mitigation measure, as is discussed in detail in Chapters 6 and 4.16.

Overall, the intensity of environmental impacts as a result of the General Plan Amendment would decrease when compared to the General Plan because the SOI area is contracted, resulting in less growth, as well as new policies that address some of the environmental analysis topics.

### *H. Environmental Review Process*

This Draft Supplemental EIR will be available for review by the public and interested parties, agencies and organizations for a period of at least 45 days, as required by State law. A public hearing on the Draft Supplemental EIR will be held during the review period, during which oral comments are welcome. Written comments on the Draft Supplemental EIR are also encouraged for incorporation into the Final Supplemental EIR and should be submitted to:

Victoria Lombardo, Senior Planner
Development & Engineering Services, City of Tracy
333 Civic Center Drive
Tracy, CA 95376

Following the close of the public comment period, a Final Supplemental EIR will be prepared to respond to all substantive comments regarding the Draft Supplemental EIR. The Final Supplemental EIR will be made available for public review prior to Planning Commission review and consideration of its

certification by the Tracy City Council. Once the City Council certifies the Final Supplemental EIR, the Council will also consider adoption of the Tracy General Plan Amendment itself, which may be approved as drafted or modified.

# 2 REPORT SUMMARY

This summary presents an overview of the analysis contained in Chapter 4, Environmental Evaluation. It also summarizes the analysis of alternatives to the project and cumulative significant impacts discussed in Chapters 5 and 6, respectively. CEQA requires that this chapter summarize the following: 1) areas of controversy; 2) significant impacts; 3) unavoidable significant impacts; 4) implementation of mitigation measures; and 5) alternatives to the project.

## *A. Project Under Review*

This EIR provides an assessment of the potential environmental consequences of adoption of the City of Tracy General Plan and Sustainability Action Plan. The General Plan serves as the principal policy document for guiding future development and conservation in and around the City. The proposed General Plan includes goals, objectives, policies and actions which have been designed to implement the City's and the community's vision for Tracy. The policies and actions would be used by the City to guide day-to-day decision-making so there is continuing progress toward the attainment of the Plan's goals. The proposed General Plan proposes land use designations that would implement the overall goals and vision of the General Plan. The proposed Sustainability Action Plan is intended to guide Tracy's actions to reduce its GHG emissions, conserve and protect natural resources, improve public health, promote economic vitality, and engage residents. The proposed Sustainability Action Plan establishes targets related to a variety of sustainability topics, and sets forth measures that will assist the City of Tracy in reaching those goals. The General Plan and Sustainability Action Plan are further detailed in Chapter 3, Project Description.

## *B. Areas of Controversy*

The proposed General Plan and Sustainability Action Plan are largely self-mitigating with regard to environmental impacts. However, there has been controversy in the past regarding several issues related to the General Plan

and Sustainability Action Plan, which are provided below. The City of Tracy received comment letters in response to the Notice of Preparation that was issued on September 2, 2008 for the General Plan Amendment Draft EIR that highlight several issues related to the General Plan. The City has also received comment letters in response to the Notice of Preparation that was issued on April 10, 2010 for the Recirculated Draft EIR. Issues raised through the public comment process are summarized below.

- Rate, location and type of growth planned in the city limits and SOI.
- Potential congestion on County roads as development occurs in the SOI.
- Traffic impacts of development under the General Plan.
- SOI contractions that remove lands previously designated for development.
- Loss of agricultural lands and open space around the city and potential related impacts on income, jobs, food production, and vegetation.
- Buffers between agricultural lands and new urban uses.
- Availability of infrastructure to support new development.
- Availability of rail transit to support transportation needs.
- Protection and enhancement of the unique qualities and urban design character of the community.
- Preservation of existing communities outside of Tracy as growth occurs in the SOI.
- Provision of adequate parks and recreation facilities for the community.
- Opportunities for sustainable development on SOI properties.
- Balance between jobs and housing in Tracy.
- Pedestrian and vehicular safety at railroad crossings.
- Conversion of industrial lands to residential uses.
- Impacts of new growth on water supply.
- Air quality and greenhouse gas emissions impacts and planning efforts.

- Commercial and economic development.
- Impacts to biological resources, including waters of the United States.
- Land use compatibility with the Tracy Municipal Airport.
- Planning for a sustainable and logical SOI.

These issues were addressed in the proposed General Plan and Sustainability Action Plan. To the extent that they have environmental impacts, they are also addressed in this EIR.

### *C. Significant Impacts*

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

Implementation of the proposed General Plan and Sustainability Action Plan has the potential to generate 22 environmental impacts in a number of areas, including both plan level and cumulative impacts. These topic areas are listed below.

- Population, Employment and Housing
- Visual Quality
- Traffic and Circulation
- Cultural Resources
- Agricultural Resources
- Infrastructure
- Noise
- Air Quality
- Greenhouse Gas Emissions

Some of the impacts can be reduced to a less-than-significant level with mitigation measures, while others are significant unavoidable impacts. Each are discussed in the following two sections and summarized in Table 2-1.

### *D. Mitigation Measures*

This EIR suggests specific mitigation measures that would reduce four of the impacts in the topic areas identified above to a less-than-significant level. Topic areas where impacts are mitigated to a less-than-significant level area:

- Visual Quality
- Cultural Resources
- Noise
- Air Quality

The mitigation measures in this EIR will form the basis of a Mitigation Monitoring Program to be implemented in accordance with State law.

### *E. Significant Unavoidable Impacts*

The proposed General Plan would have 18 significant and unavoidable impacts, as follows. These impacts are discussed further in Sections 4.2, 4.3, 4.4, 4.7, 4.10, 4.14, 4.15 and 4.16 and in Chapter 6, which addresses cumulative impacts.

#### 1. Population, Employment and Housing

There would be two significant and unavoidable impacts to population and housing growth as a result of the proposed General Plan. Despite policies and regulations designed to reduce impacts to future population and housing growth, development under the proposed General Plan at total buildout would result in significant increases in residential and employee populations, relative to existing conditions, which would result in a project-level and a cumulative impact.

**2. Visual Quality**

There would be three significant unavoidable visual quality impacts under the proposed General Plan for the Tracy Planning Area and under cumulative conditions in the region as a whole. Despite policies in the proposed General Plan policies to preserve open space and agricultural lands, scenic resources and community character, policies in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) and the City's Agricultural Mitigation Fee Ordinance, development occurring within the city and its Sphere of Influence would result in a change in visual character from an agricultural appearance to a more urban appearance and a deterioration of views from scenic roadways.

**3. Traffic and Circulation**

The increase from current conditions in population and employment under the proposed General Plan and Sustainability Action Plan would result in two significant unavoidable impacts on the regional roadway system, as is discussed in Section 4.4 and Chapter 6. The five regional roadways that will be impacted are: Interstate 205, Interstate 580, Interstate 5, Patterson Pass Road and Tesla Road. The significant and unavoidable impacts would occur at the project and cumulative level.

**4. Agricultural Resources**

Four significant and unavoidable impacts to agricultural resources would occur under the proposed General Plan. Development under the General Plan would result in conversion of Prime and Unique Farmland, and Farmland of Statewide importance to urban uses. Buildout of the proposed Plan may also result in conversion of land under active Williamson Act contracts to urban uses. The proposed General Plan could also result in the development of incompatible urban uses adjacent to agricultural uses, which could result in the conversion of these lands from farmland. Finally, there would be a cumulative significant unavoidable impact associated with the proposed General Plan, which would contribute to the on-going loss of agricultural lands in the region as a whole. The permanent loss of farmland is considered, in each of these cases, to be a significant and unavoidable impact.

**5. Infrastructure**

Two significant and unavoidable impacts related to infrastructure would result under the proposed General Plan. While the project would not contribute to significant project-level or cumulative impacts associated with water services during the 20-year planning horizon, it would contribute to a project-level and a cumulative significant and unavoidable impact at total buildout. Despite policies included in the proposed General Plan calling for the acquisition of reliable, additional sources of water, current supplies are insufficient for the projected development at total buildout of the proposed General Plan; regional water supplies are also not ensured into the future beyond a 20-year planning horizon.

**6. Noise**

There would be two significant and unavoidable noise impacts under the proposed General Plan and Sustainability Action Plan. As discussed in detail in Section 4.14, future noise level increases (3 dBA $L_{dn}$ or greater) from increased traffic associated with new roadways facilitated by the proposed General Plan would occur adjacent to existing noise sensitive uses. This would result in a significant impact at the project and cumulative level.

**7. Air Quality**

There would be two significant and unavoidable air quality impacts as a result of the project. The proposed General Plan would be inconsistent with applicable air quality plans of the San Joaquin Valley Air Pollution Control District (SJVAPCD), since it results in a higher level of vehicle miles traveled than accounted for in the District's clean air planning efforts. The proposed General Plan and Sustainability Action Plan would also contribute cumulatively to on-going air quality issues in the San Joaquin Valley, to an extent that cannot be mitigated by policies and programs to reduce pollutant emissions.

**8. Greenhouse Gas Emissions**

The proposed General Plan is also expected to lead to one significant and unavoidable greenhouse gas (GHG) emission impact. The proposed General

Plan would result in substantial GHG emission increases, conflicting with State efforts to reduce GHG emissions and meet AB 32 targets by 2020. Although the proposed General Plan and Sustainability Action Plan incorporate policies and measures to reduce GHG emissions, reductions would not be sufficient to avoid a significant impact.

### *F. Alternatives to the Project*

This EIR analyzes alternatives to the proposed General Plan. The following four alternatives to the proposed project are considered and described in detail in Chapter 5 of the 2006 Draft EIR:

- No Project Alternative
- Concentrated Growth Alternative
- City Limits Alternative
- Existing SOI Alternative

As discussed in Chapter 5 of the 2006 Draft EIR, the Concentrated Growth Alternative is environmentally superior to both the proposed General Plan and the other alternatives. This alternative would offer a substantial improvement with respect to visual quality, community character and agriculture, although it would not avoid the significant and unavoidable impacts associated with those areas for the proposed General Plan. The Concentrated Growth Alternative would also offer an insubstantial improvement with respect to land use; population, employment and housing; traffic and circulation; biology; infrastructure; hydrology and flooding; hazardous materials and other hazards; and air quality.

The City Limits Alternative is also environmentally superior to the proposed General Plan, but on balance it is marginally inferior to the Concentrated Growth Alternative. As shown in Table 5-1 of the 2006 Draft EIR, the City Limits Alternative does not offer as much of an improvement as the Concentrated Growth Alternative with respect to visual quality and it also does not offer improvements with respect to land use, hazardous materials and hazards, and air quality.

The City of Tracy has developed the proposed General Plan to represent the best possible balance between on-going residential growth, development of employment areas, and open space and agricultural preservation. Although two of the alternatives each have the potential of substantially reducing significant impacts that have been identified in this EIR, overall, the alternatives analysis shows that none of the alternatives would result in a level of improvement that would completely avoid a significant impact that is associated with the proposed General Plan.

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **LAND USE** | | | |
| *There are no significant land use impacts, therefore, no mitigation measures are necessary.* | | | |
| **POPULATION, EMPLOYMENT AND HOUSING** | | | |
| **POP-1:** Despite policies in the Community Character Element of the proposed General Plan to maintain and enhance quality of life as future growth occurs, development permitted under the proposed General Plan would result in approximately an additional 43,000 to 70,000 residents, 163,000 employees and 13,225 to 21,300 housing units for a total of 124,500 to 151,500 residents, 193,000 employees and 38,700 to 46,700 housing units at total buildout. | SU | This is a *significant and unavoidable* impact. No additional mitigation is available. | |
| **POP-2:** Despite processes to plan for and control future growth by the City of Tracy and other jurisdictions, significant growth will occur under the proposed General Plan and in other communities in the region, constituting a significant cumulative impact on population and employment. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **VISUAL QUALITY** | | | |
| **V-1:** In addition to policies in the SJMSCP and the City's Agricultural Mitigation Fee Ordinance, the proposed General Plan contains policies to preserve open space and agricultural lands and community character. Despite such policies to enhance "hometown feel" and preserve open space, development permitted under the proposed General Plan for both the 2025 and total buildout of the City limits and SOI will result in a significant impact to the existing visual identity and character of the City. | SU | No additional mitigation is available for this impact, since the permanent visual change from rural, agricultural lands to urban use is considered *significant and unavoidable*. | |
| **V-2:** Despite policies in the proposed General Plan to protect scenic resources, including those along state designated scenic highways for development projected through 2025, a significant and unavoidable impact would occur with regards to scenic resources along the state designated scenic routes I-580 (between I-205 and I-5) and I-5 (south of I-205) at total buildout of the proposed General Plan. | SU | This is a *significant and unavoidable* impact. No additional mitigation is available. | |
| **V-3:** Development permitted under the proposed General Plan would increase levels of light and glare to a significant level resulting in adverse impacts to the visual quality of Tracy. | S | V-3: The City should include a policy under Objective CC-1.1 to require that lighting on private and public property should be designed to provide safe and adequate lighting while minimizing light spillage to adjacent properties. | LTS |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **V-4:** The proposed General Plan, in combination with cumulative growth in San Joaquin County, would convert the visual character from the current rural/agricultural character to a more urban visual character. This change in visual quality will constitute a significant cumulative impact. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |
| **TRAFFIC AND CIRCULATION** | | | |
| **CIR-1:** The General Plan incorporates a range of features to help reduce the potential impact of future growth on regional roadways. However, traffic levels along regional roadways listed below will increase, creating a significant and unavoidable impact.<br>♦ I-205<br>♦ I-580<br>♦ I-5<br>♦ Patterson Pass Road<br>♦ Tesla Road | SU | This is a *significant and unavoidable* impact. No additional mitigation is available. | |
| **CIR-2:** Despite measures in the proposed General Plan and Sustainability Action Plan to help reduce the potential impact of future growth in Tracy to regional roadways, traffic levels along regional roadways will increase. Significant regional roadway impacts are anticipated to continue to occur after 2030. This will constitute a significant cumulative impact. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **CULTURAL RESOURCES** | | | |
| **CUL-1:** Undiscovered archaeological and paleontological sites in the Planning Area, including human burial sites that could be impacted from development activities involving soil removal or disturbance. | S | CUL-1a: The City shall include a policy under Objective CC-3.1 (Policy 4) to require, as part of the development review process, a standard condition of approval that if any resources are found during construction, all operations within the project area shall halt until an assessment can be made by appropriate professionals regarding the presence of archaeological and paleontological resources and the potential for adverse impacts on these resources.<br><br>CUL-1b: The City shall include a policy under Objective CC-3.1 (Policy 5) to require that any archaeological or paleontological resources on private property be either preserved on their sites or adequately documented and conserved as a condition of removal. The policy shall further require that if any resources are found unexpectedly during development, then construction must cease immediately until accurate study and conservation measures are implemented.<br><br>CUL-1c: The City shall include a policy under Objective CC-3.1 (Policy 6) requiring that if Native American artifacts are discovered on a site, the City shall consult representatives of the Native American community to ensure the respectful treatment of Native American sacred places. | LTS |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **BIOLOGICAL RESOURCES** | | | |
| *There are no significant biological impacts, therefore, no mitigation measures are necessary.* | | | |
| **AGRICULTURAL RESOURCES** | | | |
| **AG-1:** The proposed General Plan contains policies to preserve agricultural lands, in addition to policies in the SJMSCP and the City's Agricultural Mitigation Fee Ordinance. Despite these policies and regulations, development permitted under the proposed General Plan would result in the conversion of Prime Farmland, Unique Farmland and Farmland of Statewide Importance to urban uses. | SU | No additional mitigation is available, since the permanent loss of farmland is considered *significant and unavoidable*. | |
| **AG-2:** Despite policies in the proposed General Plan to support and encourage preservation of Williamson Act lands and the voluntary nature of the Williamson Act program, total buildout of the City limits and SOI may result in the conversion of land under active contracts to urban uses. | SU | No additional mitigation is available, since the permanent loss of farmland is considered *significant and unavoidable*. | |
| **AG-3:** The proposed General Plan contains several policies to mitigate impacts to agricultural resources due to the conversion of additional farmland to urban uses. However, implementation of the proposed General Plan would result in additional and incompatible urban development adjacent to agricultural uses. | SU | No additional mitigation is available, since the permanent loss of farmland is considered *significant and unavoidable*. | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **AG-4:** Significant growth will occur under the proposed General Plan and in other communities in the region, constituting a significant cumulative impact on agricultural resources. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |
| **MINERAL RESOURCES** | | | |
| *There are no significant impacts on mineral resources; therefore, no mitigation measures are necessary.* | | | |
| **COMMUNITY SERVICES** | | | |
| *There are no significant impacts to community services, including police, fire, schools, solid waste collection and disposal, and parks and recreation facilities; therefore, no mitigation measures are necessary.* | | | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **INFRASTRUCTURE** | | | |
| **INF-1:** No significant water-related impacts have been identified for development projected through 2025. However, despite policies in the Land Use and Public Facilities Elements of the proposed General Plan directing the City to acquire reliable, additional sources of water supplies to meet the city's future demand as new development occurs, there is currently insufficient water supply secured to serve projected development under total buildout of the proposed General Plan.<br><br>No additional mitigation is available. Despite policies in the proposed General Plan to ensure infrastructure is in place or planned to support growth, current water supplies would be insufficient to accommodate projected development at total buildout. However, no significant impacts would occur related to development through 2025, since current water supply could accommodate projected development through this period. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |
| **INF-2:** The proposed General Plan at total buildout, in combination with cumulative growth in San Joaquin County, would not have ensured water supplies. This will constitute a significant cumulative impact. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |
| **GEOLOGY, SOILS AND SEISMIC HAZARDS** | | | |
| *There are no significant impacts to geology, soils and seismic hazards; therefore, no mitigation measures are necessary.* | | | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **HYDROLOGY AND FLOODING** | | | |
| *There are no significant impacts to hydrology and flooding; therefore, no mitigation measures are necessary.* | | | |
| **HAZARDOUS MATERIALS AND OTHER HAZARDS** | | | |
| *There are no significant impacts to hazardous materials and other hazards; therefore, no mitigation measures are necessary.* | | | |
| **NOISE** | | | |
| **NOI-1:** The City's Noise Ordinance and policies in the proposed General Plan serve to control excessive sources of noise in the city and ensure that noise impacts from new projects are evaluated when they are reviewed. Despite these policies and regulations, significant noise levels increases (3 dBA $L_{dn}$ or greater) associated with increased traffic would occur adjacent to existing noise sensitive uses along portions of I-205, Grant Line Road, Schulte Road, Linne Road, Lammers Road, Corral Hollow Road, Tracy Boulevard, and MacArthur Drive. New roadways facilitated by the General Plan would also increase existing noise levels at receivers in Tracy. | SU | This is a *significant and unavoidable* impact. No additional mitigation is available. | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **NOI-2:** Construction associated with development projected during the planning horizon of the proposed General Plan would temporarily elevate noise levels at adjacent land uses by 15 to 20 dBA or more. | S | Mitigation Measure NOI-2: In addition to the time-of-day restriction and construction noise control measures in Objective N-1.2, Policy 4, the following standard construction noise control measures should be included as requirements at construction sites to minimize construction noise impacts:<br>♦ When necessary, temporary noise control blanket barriers shall shroud pile drivers or be erected in a manner to shield the adjacent land uses. Such noise control blanket barriers can be rented and quickly erected.<br>♦ Foundation pile holes shall be pre-drilled to minimize the number of impacts required to seat the pile. The pre-drilling of foundation pile holes is a standard construction noise control technique. Pre-drilling reduces the number of blows required to seat the pile.<br>♦ All construction projects shall comply with the Article 9 of the City of Tracy Municipal Code, the City's Noise Control Ordinance. | LTS |
| **NOI-3:** Increases in traffic associated with new roadways facilitated by the proposed General Plan and Sustainability Action Plan would contribute to significant noise levels increases adjacent to existing noise sensitive uses. These noise level increases related to regional traffic are anticipated to continue to occur after 2030. This will constitute a significant cumulative impact. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **AIR QUALITY** | | | |
| **AIR-1**: The General Plan and Sustainability Action Plan would not be consistent with applicable clean air planning efforts of the SJVAPCD, since vehicle miles traveled that could occur under the proposed General Plan would exceed that projected by the SJCOG, which are used in projections for air quality planning. The projected growth could lead to an increase in the region's VMT beyond that anticipated in the SJCOG and SJVAPCD clean air planning efforts. Development in Tracy would contribute to the on-going air quality issues in the San Joaquin Valley Air Basin. | SU | AIR-1: The City of Tracy will facilitate development applicants' participation in the San Joaquin Valley Air Pollution Control District's Indirect Source Review program. The Indirect Source Review program requires developers of larger projects to reduce emissions and provides on-site mitigation measures to help developers reduce air impacts. However, the mitigation measure identified above may not completely mitigate this impact. Therefore, it is considered a *significant and unavoidable* impact. | SU |
| **AIR-2**: The proposed General Plan does not provide adequate buffers between new or existing sources of toxic air contaminants and new or existing residences or sensitive receptors. | S | AIR-2: Add a new Action under Objective AQ-1.2 as follows:<br>"Require supplemental project studies that evaluate air quality health risks for proposed developments that place sensitive receptors within 400 feet of Interstate 205, within 230 feet of Interstate 580, or within 1,000 feet of large truck warehousing facilities or truck facilities where trucks with transportation refrigeration units operate almost continuously. Mitigation measures to reduce significant health risks shall be included in final project designs." | LTS |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|---|---|---|
| **AIR-3**: Buildout under the proposed General Plan and Sustainability Action Plan is projected to lead to substantial increases in vehicle miles traveled and contribute to existing air quality issues in the San Joaquin Valley Air Basin. These air quality impacts associated with increases in regional traffic are anticipated to occur after 2030, constituting a cumulatively significant impact. | SU | No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact. | |
| **GREENHOUSE GAS EMISSIONS** | | | |
| **GHG-1**: Implementation of the proposed General Plan and Sustainability Action Plan would reduce GHG emissions from 2020 projected BAU conditions by 22 and 28 percent. Therefore, the project would not meet the San Joaquin Valley Air Pollution Control District's threshold of reducing GHG emissions by 29 percent. | SU | While the General Plan and Sustainability Action Plan do not meet the GHG threshold, the documents include all measures that are considered to be feasible at this time. The process to develop the Sustainability Action Plan and General Plan included a comprehensive review of other climate-related plans and policies, including the California Air Pollution Control Officers Association's (CAPCOA) *Model Policies for Greenhouse Gases in General Plans* and Green Cities California's *Best Practices*, and recommendations from the consultant team in order to identify a wide array of potential measures. All measures that were considered feasible were included in the General Plan and Sustainability Action Plan. Therefore, no additional mitigation would be feasible and the impact is considered *significant and unavoidable*. | SU |

LTS = Less-Than-Significant S = Significant SU = Significant Unavoidable Impact

# 3 PROJECT DESCRIPTION

The proposed City of Tracy General Plan (General Plan) contains the following elements: Land Use, Community Character, Economic Development, Circulation, Open Space and Conservation, Public Facilities and Services, Safety, Noise, and Air Quality. The Housing Element was prepared and reviewed under a separate environmental review process. The proposed Sustainability Action Plan establishes targets related to a variety of environmental topics and sets forth measures designed to reach those targets. This chapter describes the proposed General Plan and Sustainability Action Plan.

## *A. Location and Setting*

Tracy is located in San Joaquin County, east of the Coastal Range that separates California's Central Valley from the San Francisco Bay Area. The city lies 68 miles south of Sacramento and 60 miles east of San Francisco. Interstate 205 runs through the northern-most part of the city, and connects Interstate 580 to Interstate 5, a major north-south interstate corridor east of Tracy. Figure 3-1 shows Tracy's regional location.

Tracy began as an agricultural community centered on several rail lines, and eventually became the San Joaquin Valley headquarters for the Central Pacific Railroad. The City was incorporated in 1910 and grew rapidly after the first irrigation district was established in 1915. Towards the latter part of the twentieth century, the city transitioned into a primarily residential community, as more people arrived from the Bay Area seeking affordable housing, a small-town feel, and respite from the highly-urbanized San Francisco region.

Today, Tracy is one of the fastest growing cities in California. Between 1990 and 2008, the population has increased 143 percent, from 33,500 to 81,548[1] residents. This growth has brought proportionally more families to Tracy and increased percentages of home ownership and household size. From 1990 to 2006, Tracy became more racially and ethnically diverse, as the percentage

[1] California Department of Finance estimate for January, 2008.

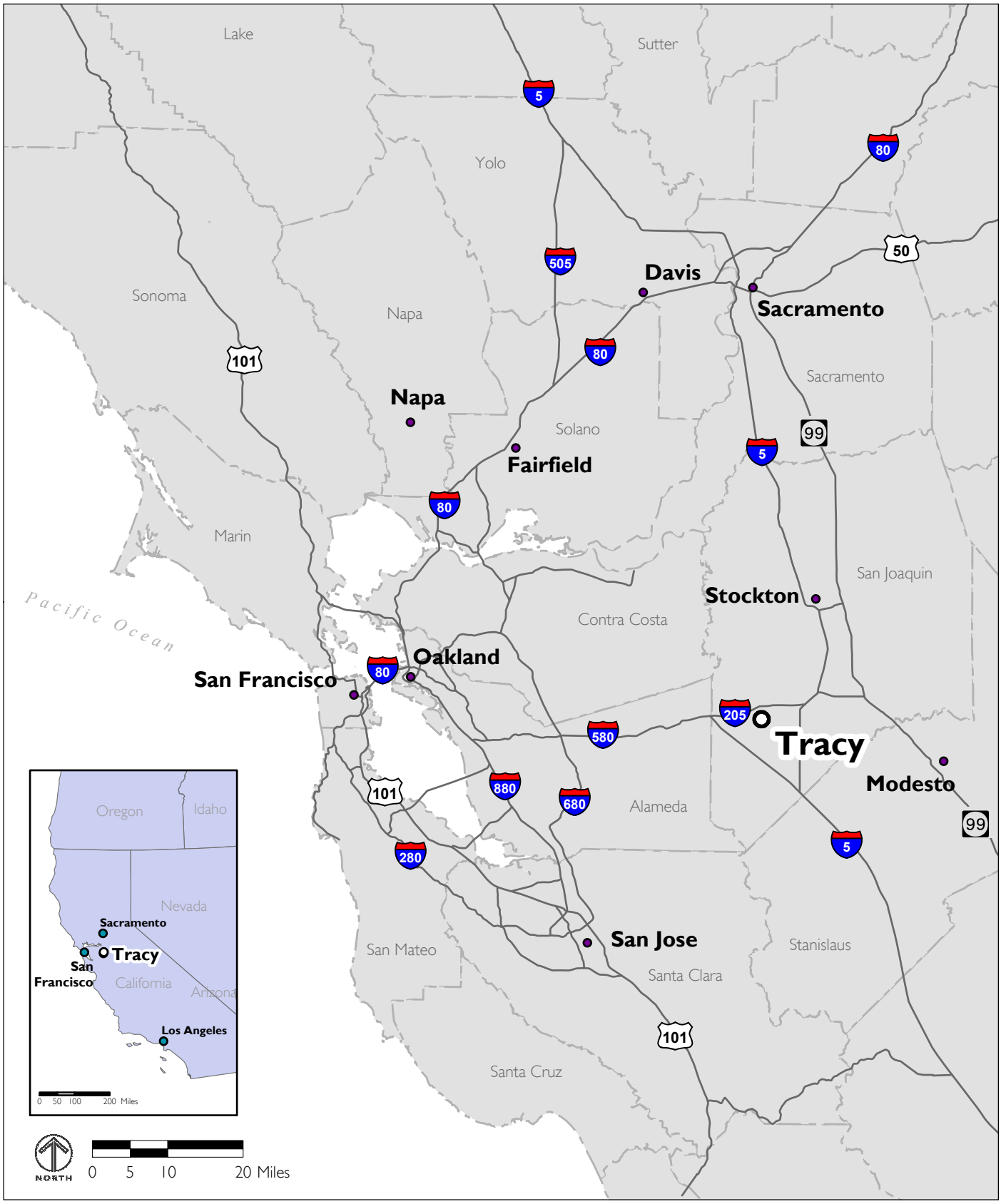



**FIGURE 3-1**

**REGIONAL LOCATION**

of Caucasians dropped from 86 to 53 percent and African Americans, Asians and Hispanics each increased by 7 to 9 percent.[2]

During this period of growth, the percentage of owner-occupied housing increased from 60 percent to 67 percent[3] and the average household size increased from 3.0[4] to 3.27 persons.[5] This trend has been attributed in part to the increase of families with children and the shift in racial and ethnic composition, since Asian and Hispanic households are typically 30 percent larger than white households.[6] Between 1990 and 2006, the median household income also increased from $65,488[7] to $79,976[8] and the city became proportionally more educated as the percentage of the population with associate, college or graduate degrees increased from 21 percent to 29 percent.[9]

As the population has grown and diversified, so too has the economy, aided in part by numerous companies that have established facilities in Tracy to take advantage of inexpensive land and proximity to three major freeways.

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[2] U.S. Census, 1990 Decennial Census (STF 3) Table P008 and P010. U.S. Census, 2006 American Community Survey Fact Sheet for Tracy, California.

[3] U.S. Census, 1990 Decennial Census (STF 3) Table PH008. U.S. Census, 2006 American Community Survey Fact Sheet for Tracy, California.

[4] California Department of Finance, estimate for April, 1990, http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E8/documents/E-8_90-00main.xls, accessed on September 15, 2008.

[5] California Department of Finance, estimate for January, 2008, http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/, accessed on September 15, 2008.

[6] U.S. Census 2000.

[7] U.S. Census, 1990 Decennial Census (STF 3) Table P080A. Adjusted to 2006 dollars using Bureau of Labor Services Consumer Price Index Calculator.

[8] U.S. Census, 2006 American Community Survey Fact Sheet for Tracy, California.

[9] U.S. Census, 1990 Decennial Census (STF 3) Table P057. U.S. Census, 2006 American Community Survey Selected Social Characteristics Table for Tracy, California.

Between 1990 and 2003, the number of jobs in Tracy increased from 11,112 to 29,758.[10] There is also a greater diversity of job types in the city, with over 8,000 jobs in each of the professional services and retail sectors and over 4,000 jobs in the manufacturing sector.

The existing incorporated area of the city is approximately 22 square miles as of 2008.[11] The majority of the city is located on flat land at the intersection of several Interstate highways (Interstates 205, 580 and 5). The city also contains two large undeveloped areas to the southwest (the future Tracy Hills development) and the northeast (the expansion area for the Northeast Industrial Area).

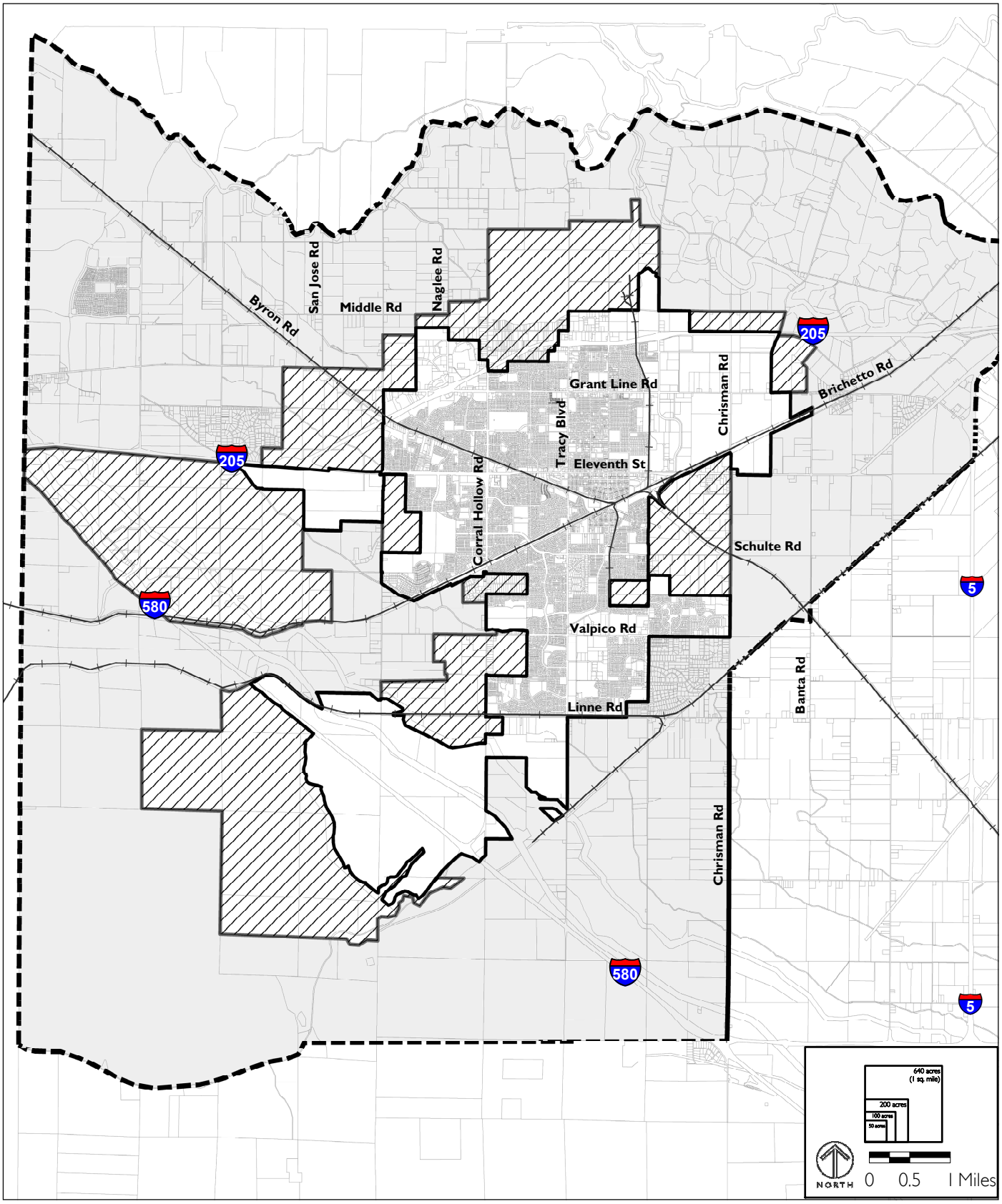
The State of California encourages cities to look beyond their borders when undertaking the sort of comprehensive planning required of a General Plan. For this reason, the General Plan assesses two delineated areas known as the Sphere of Influence (SOI) and the Planning Area, both of which are larger than the City limits. Figure 3-2 depicts the boundaries for each area, as proposed in the updated General Plan.

The SOI is the area outside of the City limits that the City expects to annex and urbanize in the future. As in many communities, the SOI can accommodate more growth than is expected during the planning horizon of the General Plan. The proposed General Plan would make some changes to the existing SOI, as described further in Section 5.a below. The proposed SOI is approximately 42 square miles and is 20 square miles larger than the City limits.

State law also allows cities to identify a Planning Area. This is an area outside of its boundaries that bears a relation to the City's planning. While Tracy does not have any regulatory authority within the Planning Area, it is included in the General Plan as a signal to the County and to other nearby local

[10] *State of the City*, Presentation by Andrew Malik, City of Tracy Economic Development Director, 2004.

[11] City of Tracy GIS, 2008.




City Limits

Proposed Sphere of Influence

Planning Area

**FIGURE 3-2**

**TRACY CITY LIMITS, PROPOSED SPHERE OF INFLUENCE AND PLANNING AREA**

and regional authorities that Tracy recognizes development within this area as having an impact on the future of the city. Under State law, the City is invited to comment on development within the Planning Area that is subject to review by the County. The unincorporated portion of the Tracy Planning Area will remain under the jurisdiction of San Joaquin County. The Planning Area contains approximately 114 square miles and is 92 square miles larger than the City limits and 72 square miles larger than the SOI.

### *B. Proposed General Plan Description*

This section describes the proposed City of Tracy General Plan.

#### 1. What is the General Plan?

The City of Tracy's General Plan is the principal policy and planning document for guiding future conservation, enhancement and development in the city. It represents the basic policy direction of the Tracy City Council on community values, ideals and aspirations to govern a shared environment through 2025. The General Plan addresses all aspects of development including land use, transportation, housing, economic development, public facilities and infrastructure, and open spaces, among other topics.

State planning and zoning law requires that the General Plan must be comprehensive, internally consistent and long-term. Although required to address the issues specified in State law, the General Plan may be organized in a way that best suits the City. The plan must be clearly written, available to all those concerned with the community's development, and easy to administer.

The City of Tracy General Plan meets these requirements. The Plan articulates a vision for the city's long-term physical form and development. It also brings a deliberate overall direction to the day-to-day decisions of the City Council, its commissions and City staff.

The overall role of the City of Tracy General Plan is to:

- Define a realistic vision of what the City intends to be in 20 years.
- Express the desires of Tracy residents in regard to the physical, social, economic, cultural and environmental character of the city.
- Serve as a comprehensive guide for making decisions about land use, community character, economic development, circulation, protecting open space and the environment, and public health and safety.
- Chart the course of coordinated development and conservation that will preserve the character and heritage of Tracy.
- Serve as the City's "constitution" for land use and community development by providing the legal foundation for all zoning, subdivision and public facilities, decisions and projects, all of which must be consistent with the General Plan.

**2. The General Plan Update Process**

The General Plan Update process began in 2002. At that time, a consultant team working for the City conducted an assessment of existing conditions in the City of Tracy and its environs on five major topic areas to help identify key issues:

- Land Use, Population and Housing
- Environmental Conditions
- Transportation and Circulation
- Infrastructure and Services
- Assessment of the 1993 General Plan

To complete these assessments, the consultant team conducted field observations, interviews, and database and archival research. Planning documents, government laws and regulations, and City codes and ordinances were also reviewed.

Concurrently, City staff and the consultant team worked closely with the City Council and Planning Commission to determine the scope and direction on policy issues to be addressed in the General Plan. Twenty-one joint City Council/Planning Commission workshops were held on the topics listed be-

low. Members of the public were invited to comment at the end of each of the workshops.

- General Plan Update Process, Urban Design Principles, Vision Development (April 22, 2003)
- Urban Design and Transportation (May 12, 2003)
- Housing Element (May 20, May 25 and October 6, 2003 and May 10, 2004)
- Community Character (June 30 and November 3, 2003)
- Land Use Element (December 1, 2003)
- Land Use Designations (February 2 and March 1, 2004)
- Transportation and Circulation (April 5 and May 3, 2004)
- Open Space (April 12, 2004)
- Vision Statement and Open Space and Conservation Element (July 12, 2004)
- Presentation of City Council/Planning Commission Review Draft General Plan (November 15, 2004)
- Major Policies Discussion (December 16, 2004)
- Residential Growth Priorities (January 11, 2005)
- Affordable Housing (January 27, 2005)
- Jobs and Open Space (January 31, 2005)
- Final Comments to City Council/Planning Commission Review Draft General Plan (May 16, 2005)

In addition to the joint Planning Commission/City Council workshops, three community workshops were held on the following topics:

- Introduction to the General Plan Update Planning Process (September 17, 2003)

- Land Use Designations within the City limits (January 13, 2004)
- Land Use Designations within the SOI (February 18, 2004)

After the General Plan was adopted in 2006, the City submitted its proposed SOI to the Local Agency Formation Commission (LAFCO) for approval. In early 2007, LAFCO informed City staff that Tracy's Municipal Services Review (MSR) would be subject to new LAFCO policies and guidelines, which were adopted on September 21, 2007. The LAFCO policy changes regarding SOIs necessitated that the SOI proposed by the City of Tracy in 2006 be reduced to show a 30-year development horizon and a 10-year development horizon. The following meetings and workshops were conducted in order to draft a new SOI that complies with LAFCO policies:

- Community meeting to discuss new LAFCO policies and receive feedback (December 12, 2007)
- Revised draft SOI presentation to City Council (January 15, February 5, April 1 and June 3, 2008)
- City Council workshop to accept draft SOI with minor modifications (July 15, 2008)

### 3. General Plan Vision

The General Plan is based on a vision to enable the City of Tracy to retain its small-town character and provide a high-quality of life for its residents, while continuing to grow new opportunities for businesses, job creation for local employment and housing development. The following vision statement is included in the General Plan:

> *Through the year 2025, the City of Tracy will continue to enhance its place as a great community in which to live, work and play. Drawing on its small town character, the City will grow in a manner that provides a high quality of life for all current and future residents and employees. In the coming years, Tracy will:*

1. *Balance the development of new retail, job creating commercial, office and industrial development with the development of new housing so that residents have the opportunity to work in Tracy.*
2. *Continue to provide a healthy setting for existing businesses while actively facilitating the establishment of new businesses, particularly those that reflect community aspirations.*
3. *Preserve its "hometown feel" by creating residential neighborhoods with a sense of place and that are diverse, attractive, safe, walkable and affordable and by preserving significant historic and cultural resources.*
4. *Meet the transportation challenges of the future, so that people can travel safely and conveniently on foot or by car, bicycle and transit.*
5. *Require development and redevelopment to adhere to basic principles of high quality urban design.*
6. *Strengthen its downtown and develop the cultural, retail and civic amenities of a vibrant city, without losing the spirit of a small town.*
7. *Protect its unique identity and preserve buffers from neighboring cities with open spaces, parks and agricultural lands.*
8. *Protect public health, safety and the environment by taking steps to reduce noise and air pollution, conserve water and energy, and prepare for natural and man-made disasters.*
9. *Provide beautiful parks, exciting cultural amenities and civic institutions that inspire community pride.*
10. *Encourage high quality schools.*
11. *Enhance the cultural environment in the city by promoting arts and cultural activities.*
12. *Welcome people from all backgrounds, ages, income levels and physical capabilities and invite them to put down roots and stay awhile.*

*The City will achieve its vision through bold civic leadership, citizen participation and assistance, and responsive, accountable government.*

The vision statement is intended to guide the goals, objectives, policies and actions of the General Plan, which in turn guide growth and preservation in the city through 2025.

**4. Proposed General Plan**

The City of Tracy General Plan is guided by the vision statement and includes an introduction and a brief overview of Tracy, as well as ten separate "elements" that set goals, objectives, policies and actions for a given subject. Seven of these elements cover the topics required by State law, while the remaining three elements have been prepared by the City to meet local needs and concerns.

a. General Plan Elements

The ten elements that form the General Plan are briefly described below. Nine of the ten elements form the *General Plan Update*, which are reviewed in this document and are listed below.

- *Land Use Element.* The required Land Use Element designates all lands within the city for a specific use such as residential, office, commercial, industry, open space, recreation or public uses. The Land Use Element provides development regulations for each land use category, and also provides overall land use policies for the City.
- *Community Character Element.* The Community Character Element is not required by State law. However, due to the importance of Tracy's hometown feel, the community has decided to include this optional element to identify, protect and enhance the urban design character of the community.
- *Economic Development Element.* This optional element contains goals, objectives, policies and actions to encourage the development of desired economic activities throughout the city. The information in this element is derived from the City's Economic Development Strategy prepared in 2002.
- *Circulation Element.* This required element specifies the general location and extent of existing major streets, level of service, transit facilities, and

bicycle and pedestrian network. As required by law, all facilities in the Circulation Element are correlated with the land uses foreseen in the Land Use Element.

- *Open Space and Conservation Element.* The Open Space Element and the Conservation Element are required under State law and are combined in this General Plan. Issues addressed include the preservation of open space and agricultural land; the conservation, development and utilization of natural resources; and the provision of parks and recreational facilities. Open Space goals for public health and safety are covered in the Safety Element.
- *Public Facilities and Services Element.* This optional element covers a wide range of topics related to the provision of public services and infrastructure in the city. Topics covered include law enforcement; fire protection; schools; public buildings; solid waste, including diversion; and the provision of water, wastewater and stormwater infrastructure.
- *Safety Element.* State law requires the development of a Safety Element to protect the community from risks associated with the effects of flooding, seismic and other geologic hazards, and wildland fires.
- *Noise Element.* This required element addresses noise in the community and analyzes and quantifies current and projected noise levels from a variety of sources, such as traffic, industry, rail and the airport. The Noise Element includes goals, objectives, policies and actions to address current and foreseeable noise problems.
- *Air Quality Element.* All jurisdictions in the San Joaquin Valley Air Pollution Control District are required to address air quality impacts in their general plan. Therefore, this Element outlines goals, objectives, policies and actions to mitigate the air pollution impacts of land use, the transportation system and other activities that occur in the City of Tracy.

A tenth element, the *Housing Element*, is being prepared and reviewed as part of a separate environmental review process. Each city and county has an obligation to contribute its part by including a Housing Element as one of the

seven mandatory elements of the General Plan. The Housing Element provides a long-term, comprehensive plan to address the housing needs for all economic segments of the community. The Housing Element addresses existing and projected housing demand and establishes goals, objectives, policies and actions to assist the City in implementing the plan in accordance with other General Plan policies. Copies of the Housing Element and its environmental document will be available at the City of Tracy Development and Engineering Services Department.

b. Organization of the Elements

Each element of the General Plan contains background information and goals, objectives, policies and actions. Some elements also have additional sections that are specific to them. For example, the Land Use Element contains a series of land use designations that guide overall development in the city and the Circulation Element contains information on the network and hierarchy of streets in the city.

**5. Proposed Land Use Changes**

As part of the General Plan Update process, jurisdictions typically revisit the extent of the SOI and land use designations, and modify both as necessary to meet the vision for the future of the city, and to meet City goals. The following is a summary of the proposed changes to the SOI, land use designation categories and land use designations on specific parcels.

a. Changes to the Sphere of Influence

The draft General Plan proposes to revise the City's existing SOI to more accurately reflect locations where the City may grow in the future. The proposed SOI in the updated General Plan consists of approximately 42 square miles, approximately 20 square miles of which are outside of the existing City limits. Although the proposed SOI includes some expansion areas, other areas are contracted, resulting in a proposed SOI that is approximately 7 square miles smaller than the current SOI. Figure 3-3 shows both the existing and the proposed boundary for the SOI.

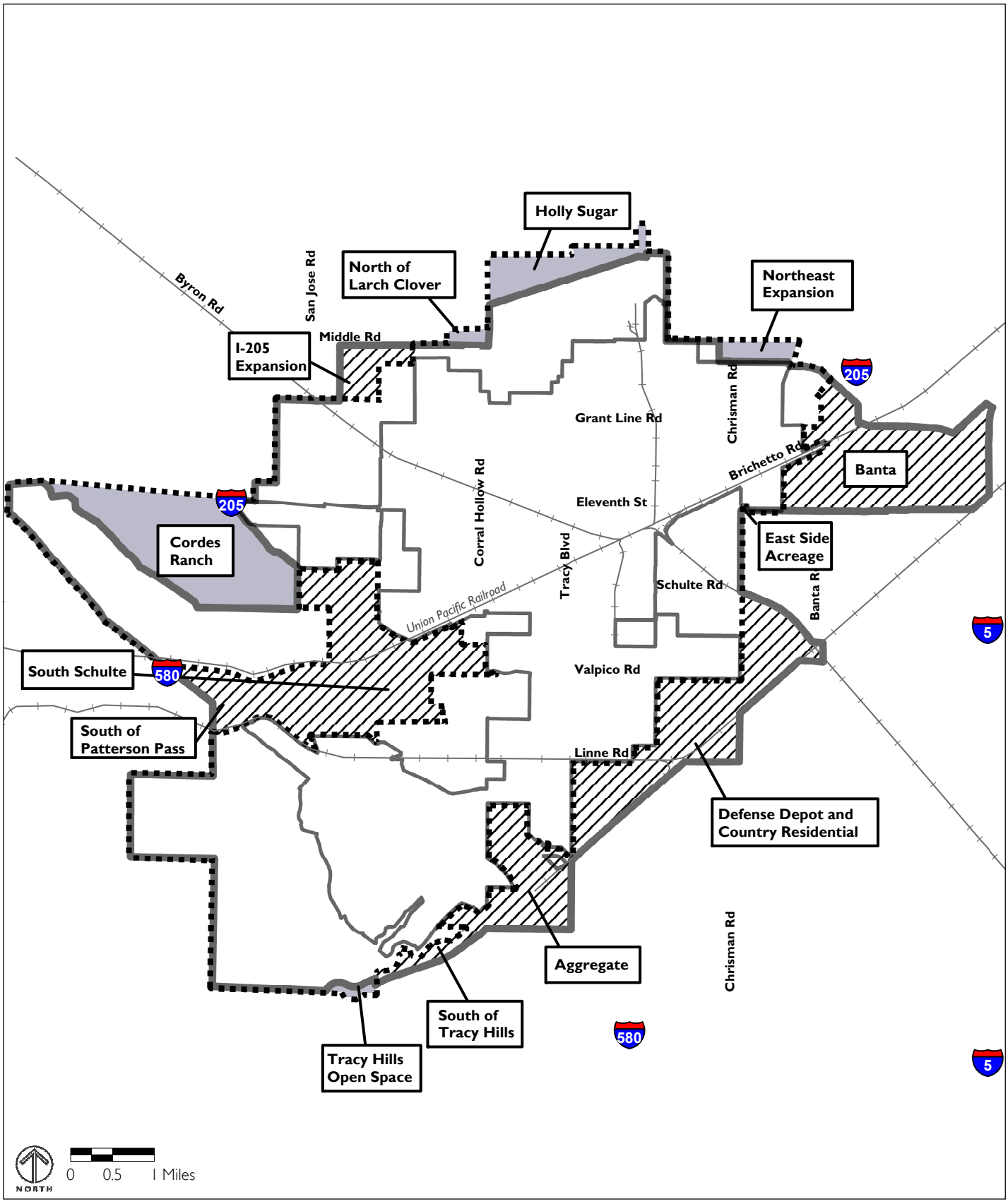
*i. Proposed Expansion Areas*

The draft General Plan includes areas where the SOI would expand. These areas are described below and identified in Figure 3-3.

- **Cordes Ranch.** In August 2003, the West Tracy Owners Group approached the City with a proposal to modify the SOI and annex Cordes Ranch. The proposed Plan calls for industrial and flex office uses with supporting commercial development. This area is approximately 1,535 acres in size, and largely comprises the area referred to as Urban Reserve 6 in the proposed General Plan.
- **Holly Sugar.** In 2003, the City purchased a portion of the Holly Sugar plant. The former Holly Sugar property is included in the proposed SOI and will be designated as Agriculture with provisions to allow for the land application of treated effluent and effluent cooling. This area is an addition of approximately 400 acres.
- **North of Larch Clover.** A small expansion of approximately 50 acres is proposed to rectify the SOI line which cut across property boundaries. The area added to the SOI is designated as Residential Very Low and will help to create a smooth transition between the urbanized area of Tracy and rural county land.
- **Northeast Expansion.** The proposed General Plan includes an expansion of the SOI east of MacArthur Drive and north of Interstate 205. This area is designated as Industrial and represents an increase of approximately 140 acres.
- **Tracy Hills Open Space.** A small expansion of approximately 43 acres is proposed in an area south of the Tracy Hills Specific Plan that is designated as Open Space.

*ii. Proposed Contraction Areas*

The draft General Plan also includes areas where the SOI would contract. These areas are described below and identified in Figure 3-3.




City Limits

Proposed 2010 Sphere of Influence

1993 General Plan Sphere of Influence

Contraction

Expansion

**FIGURE 3-3**

**1993 AND PROPOSED SPHERES OF INFLUENCE**

**CITY OF TRACY**
GENERAL PLAN
DRAFT SUPPLEMENTAL EIR

- **Aggregate/South of Tracy Hills.** A contraction of nearly 1,000 acres is proposed to the south of City limits. This contraction area was previously designated as Aggregate and Public in the 1993 General Plan. This contraction area also includes an area south of the Tracy Hills Specific Plan and east of Interstate 580. This area consists of approximately 230 acres and contains a 44-acre former landfill. The remaining area consists of land that is vacant or in agricultural use.
- **Banta.** A contraction of approximately 1,650 acres is proposed in the Banta area east of City limits. This area was designated as Low Density Residential, Industrial and Commercial under the 1993 General Plan.
- **Defense Depot and Country Residential.** A large contraction of nearly 1,700 acres is proposed along the southeastern City limit. This area was designated as Aggregate, Commercial, Industrial and Residential Very Low under the 1993 General Plan.
- **East Side Acreage.** Approximately 4 acres to the east of Chrisman Road and south of Brichetto Road is proposed to be removed from the SOI. This area was designated as Commercial under the 1993 General Plan.
- **I-205 Expansion.** A 270-acre area to the northwest of City limits is proposed to be removed from the SOI. The area was designated as Low Density Residential under the 1993 General Plan.
- **South Schulte and South of Patterson Pass.** A large 2,350-acre area to the west of City limits is proposed to be removed from the SOI under the General Plan. Part of this area consists of 575 acres south of Patterson Pass Business Park, which is proposed for removal from the SOI because of its location between Interstate 580, the Delta Mendota Canal and the California Aqueduct. This area is isolated and would likely be difficult and expensive to provide with urban services. This contraction area was designated as a variety of land use designations under the 1993 General Plan.

b. Proposed Land Use Designations

The General Plan proposes to retain most of the land use categories in the 1993 General Plan. Figure 3-4 shows a map of the proposed land use designations. The land use categories from the 1993 General Plan that are also in the proposed General Plan are as follows:

- Residential Very Low (VL)
- Residential Low (L)
- Residential Medium (RM)
- Residential High (RH)
- Commercial (C)
- Industrial (I)
- Public Facilities (Pub)
- Park (P)
- Open Space (OS)
- Aggregate (Agg)
- Agriculture (Ag)

The General Plan also proposes the addition of several new land use categories, as described below:

- **Office (O).** The Office designation specifies a density/building intensity of 0.4 FAR[12] and applies to medium- to large-scale office, such as research and development uses that accommodate high-tech, medical/hospital, legal, insurance and similar uses.
- **Downtown (D).** A density of 15 to 40 dwelling units per gross acre for residential development or up to 50 units per gross acre for senior housing is allowed within the Downtown designation. Non-residential (e.g. retail, service commercial and office) may have a maximum FAR of 1.0. Characteristics of areas with the proposed Downtown designation include pedestrian-oriented environment, vertical mixed-use development, a diverse mix of public and private uses, streets on a grid or modified grid,

[12] Floor Area Ratio (FAR) describes the relationship between the total floor area contained in a building as compared to the area of the land under the building. Cities often establish minimum and maximum FARs as part of a zoning ordinance.

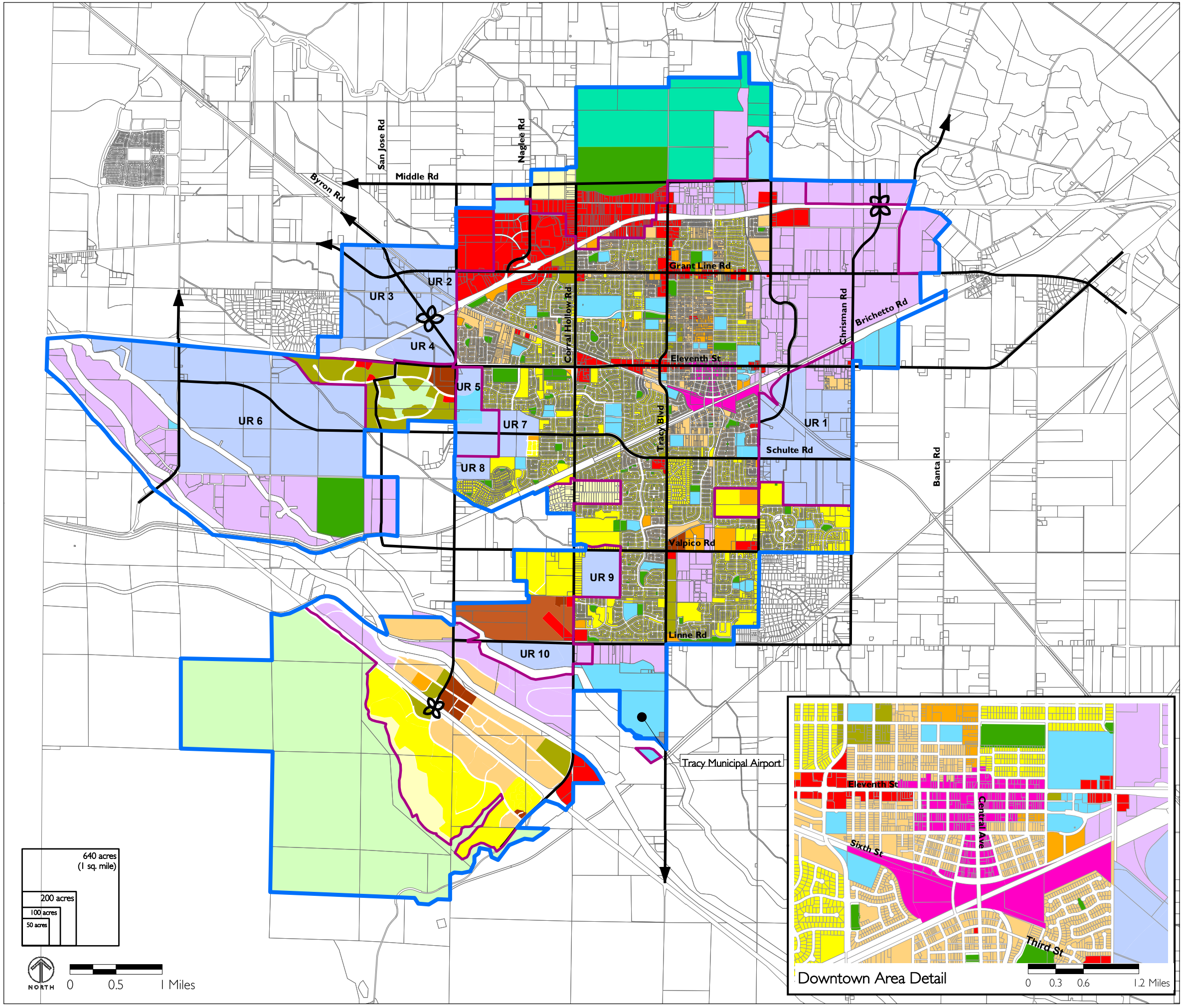
multi-modal street design, and direct pedestrian and bicycle connections to residential neighborhoods.

- **Traditional Residential (TR).** Traditional Residential (TR) areas consist of a mix of residential densities and housing types reminiscent of traditional neighborhoods, ranging from single-family detached housing to attached medium and high density housing types, sometimes adjacent to or above retail, commercial or other compatible uses. At least four important residential criteria are required to be established at the time a property is designated to "TR" through a General Plan Amendment so that dwelling unit and population density, design, and neighborhood compatibility standards can be established: (1) the maximum and minimum number of residential units allowed in the TR area and the average number of people per unit; (2) the density ranges allowed in terms of dwelling units per acre, and the maximum and minimum numbers of each such residential housing type allowed in the TR area; (3) a "Design Book" to ensure design quality, interesting and diverse architectural treatments, and an attractive streetscape; and (4) the criteria that will be used to establish the location/mix of residential design and housing types in the TR area to encourage an interesting and compatible neighborhood and to discourage the domination of a sub-area with only one or a few residential housing types and designs. Park and recreation uses are also required as part of the TR planning process. The re-designation of a property to the TR designation can be implemented only in combination with the particular project's development-level planning process (e.g. Specific Plan process, or if no Specific Plan is required, through the City's zoning process) that addresses the residential criteria set forth above.

- **Traditional Residential – Ellis (TR-Ellis).** The Traditional Residential – Ellis (TR-Ellis) designation includes between 1,200 and 2,250 total residential units, for an overall site density of between 4 and 7 units per gross acre. This designation also includes three residential sub-designations: “Residential Mixed Low,” “Residential Mixed Medium,” and “Residential Mixed High.” Between 256 and 976 residential units and approximately 122 acres are allowed for the Residential Mixed Low designation (2.1 to 8 units per gross acre), between 372 and 1,488 residential units and

**FIGURE 3-4**

# PROPOSED GENERAL PLAN LAND USE DESIGNATIONS




- City Limits
- Proposed Sphere of Influence
- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Traditional Residential - Ellis
- Commercial
- Office
- Industrial
- Downtown
- Village Center
- Public Facilities
- Park
- Open Space
- Agriculture
- Aggregate
- UR — Urban Reserve
- **Major Arterial/Expressway/Boulevard**

approximately 93 acres are allowed for the Residential Mixed Medium designation (4 to 16 units per gross acre), and between 250 and 780 residential units and approximately 31 acres are allowed for the Residential Mixed High designation (8 to 25 units per gross acre). Additionally, up to 50 of the 2,250 residential units are allowed in the adjacent Village Center (4 to 16 units per gross acre for approximately 7 acres). Finally, the TR-Ellis area includes approximately 18 acres of parks, with the possibility of an additional 16 acres of Community Park.

- **Urban Reserve (UR)**. The proposed Urban Reserve designation would apply in areas which are not expected to develop for a number of years. It would allow a mix of land uses, in accordance with the statistical profiles for each Urban Reserve, without designating a specific location for these uses. Of the eleven Urban Reserves, some areas are proposed to accommodate a mix of commercial and industrial uses, while others are to accommodate a mix of residential uses. This new designation would require comprehensive planning prior to development while also providing flexibility for the future.

- **Village Center (VC)**. The proposed Village Center designation would apply to relatively small retail or mixed-use development including, but not limited to, grocery stores, drug stores, banks, restaurants, small-scale professional offices such as beauty salons, daycare facilities and higher density residential development. The proposed density/building intensity is 12.1 to 25 units per acre. Non-residential (e.g. retail, service commercial and office) may have a maximum FAR of 1.0. Residential and non-residential uses may be combined on individual parcels. A higher FAR may be permitted where upper-story housing, off-site or structured parking, and/or pedestrian amenities are provided.

In addition to land use designations and goals, objectives, policies and actions, the proposed General Plan includes additional, detailed and design guidance for eight specific areas, identified as Areas of Special Consideration. These Areas of Special Consideration are shown in Figure 3-5.

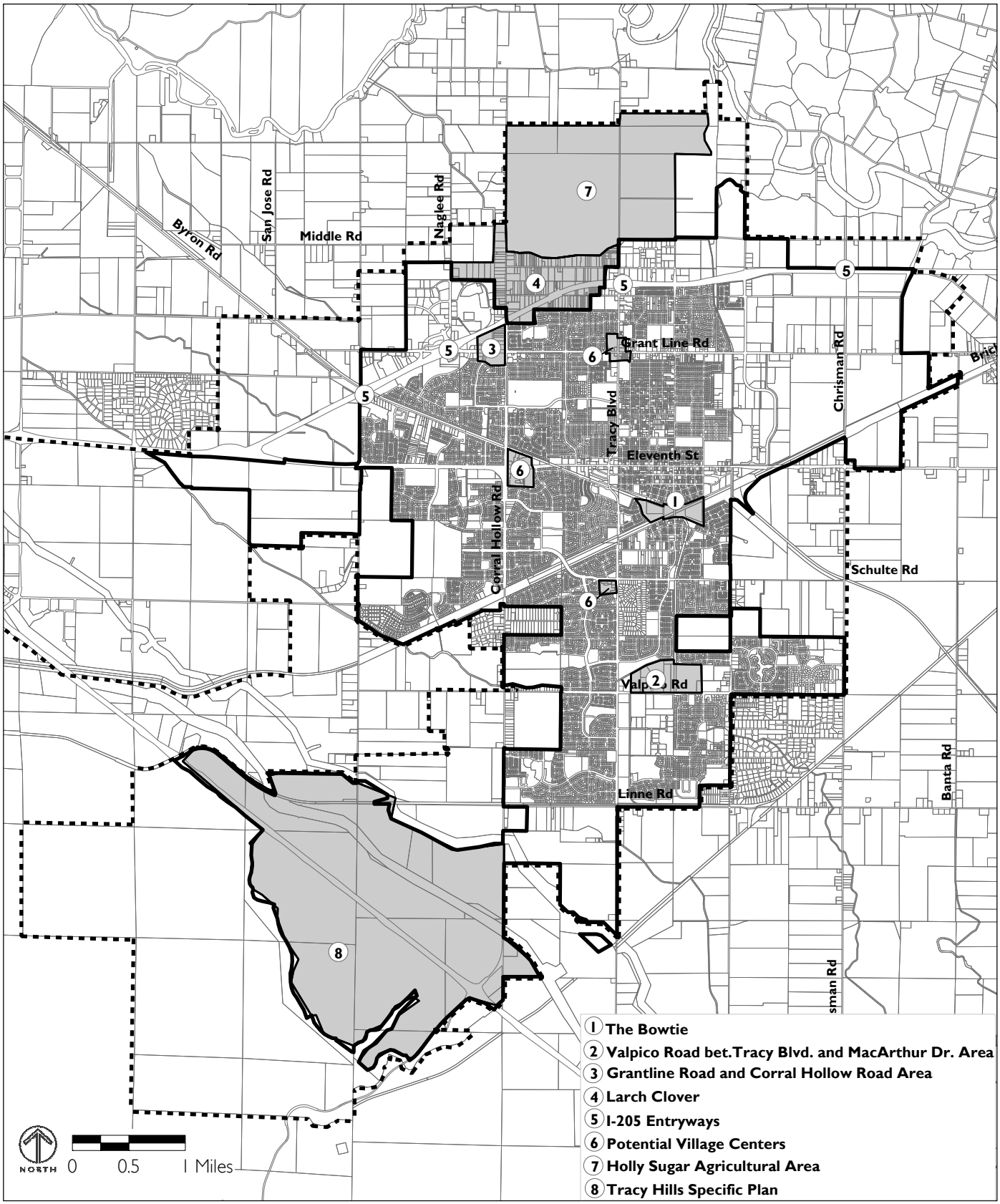



**FIGURE 3-5**

City Limits

Proposed Sphere of Influence

Areas of Special Consideration

## AREAS OF SPECIAL CONSIDERATION

**CITY OF TRACY**

GENERAL PLAN
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Four existing land use designations that appear in the 1993 General Plan would be removed in the proposed General Plan, and lands that currently carry them would be redesignated. These designations are:

- **Urban Centers.** The 1993 General Plan identifies approximate locations on the Land Use Diagram for "Urban Centers," which are defined as areas 60 to 80 acres in size that are intended to serve as a high intensity-use, "full-service 'downtown'" for areas outside of the City limits that have not yet been developed. Based on an analysis of prevailing market and economic trends and in support the City of Tracy's vision of preserving and enhancing its unique "hometown" character, the proposed General Plan has removed the "Urban Center" designation. Instead, the proposed General Plan establishes the Downtown and Village Center land use designations to promote the concept of focusing on the city's existing downtown area as the public and cultural focus of the entire city, with small-scale retail and mixed-use or "village" centers distributed throughout the city on major corridors to serve the city's neighborhoods.

- **Community Plan Areas.** The existing General Plan put forth the concept of the Community Plan Area to organize future planning efforts and guide development. All areas within the 1993 SOI were divided into seven Community Plan Areas. One Community Plan Area, the "City Core Contiguous Community Area," consists of the existing urbanized area (as of 1993). The remaining six Community Areas are large, undeveloped areas outside of the City limits. The 1993 General Plan lays out short descriptions and summary tables indicating the type and mix of development envisioned for each Community Area. The Community Plan Areas do not change the underlying land use designations. The Community Area concept has been refined and replaced in the proposed General Plan by the Urban Reserve land use designation.

- **Federal Reserve (FR).** According to the 1993 General Plan, this designation was applied to federally-owned lands where specialized testing and other operations occur that are outside of the jurisdiction of the City of Tracy. The only area in the current General Plan with this designation, "Site 300" or the Lawrence Livermore Laboratory, is outside of the City's

1993 and proposed SOIs, but within the Planning Area. The City does not have regulatory authority in areas within the Planning Area and outside of the SOI; instead, San Joaquin County General Plan land use designations apply. Moreover, City General Plan land use designations outside the City's SOI are not shown in the proposed General Plan land use map. Thus, this land use designation was removed.

- **Special Study Area (/S).** In the 1993 General Plan, this land use designation is defined as "a suffix to other land use designations to identify special study areas."[13] Only one area, the residential area northwest of the Tracy Municipal Airport's overflight zone, was designated with this overlay. Standards regarding compatibility and safety in areas near the Tracy Municipal Airport are set by the Federal Aviation Administration and promulgated by the San Joaquin County Airport and Land Use Commission (ALUC). In place of having a separate land use designation for areas that require "further study," the proposed General Plan's Land Use Element includes policy direction for new development and expansion of existing development to conform to the safety and development restrictions specified in the San Joaquin County Airport Land Use Plan.

c. Land Use Designation Changes

The draft General Plan proposes several revisions to the land use designations of properties within the City limits and SOI as compared to the land use designations in the 1993 General Plan. These changes, which are intended to be in keeping with the goals, objectives, policies and actions of the proposed General Plan, are presented in Figure 3-6. In addition, Table 3-1 presents a comparison of the amount of acres and percentage of each land use designation between the 1993 General Plan and the proposed General Plan. The following is a summary of the types of changes proposed:

- **Specific Plans.** The City has approved numerous Specific Plans since the 1993 General Plan was adopted, including the Industrial Area Specific Plan, I-205 Corridor Specific Plan, Tracy Hills Specific Plan, and Ellis

[13] City of Tracy 1993 General Plan.

TABLE 3-1 **LAND USE DESIGNATION CHANGES (CITY LIMITS AND SOI)**

| Land Use Designation | 1993 General Plan (Acres) | % of Total | Proposed General Plan (Acres) | % of Total |
|---|---|---|---|---|
| Residential Very Low | 1,445 | 5.6% | 456 | 2.0% |
| Residential Low | 7,690 | 29.8% | 3,875 | 17.0% |
| Residential Medium | 2,315 | 9.0% | 1,530 | 6.7% |
| Residential High | 145 | 0.6% | 248 | 1.1% |
| TR – Ellis | N/A | -- | 287 | 1.3% |
| Commercial | 1,675 | 6.5% | 1,266 | 5.5% |
| Office | N/A | -- | 546 | 2.4% |
| Downtown | N/A | -- | 116 | 0.5% |
| Village Center | N/A | -- | 131 | 0.6% |
| Industrial | 6,310 | 24.4% | 4,015 | 17.6% |
| Urban Reserve | N/A | -- | 4,044 | 17.7% |
| Public Facilities | 1,135 | 4.4% | 1,057 | 4.6% |
| Park | 280 | 1.1% | 767 | 3.4% |
| Open Space | 3,435 | 13.3% | 3,551 | 15.6% |
| Aggregate | 1,045 | 4.0% | 10 | 0.0% |
| Agriculture | 365 | 1.4% | 916 | 4.0% |

Notes:
1. The designation, "Urban Center," used in the *1993 General Plan* is not included in the table above since the designation only was applied to approximate geographic areas which had other underlying General Plan land use designations; the acreages of the underlying land use designations are included in the table.
2. Total acres of the SOI and City limits differ between the *1993 General Plan* and the proposed General Plan due to annexations and SOI changes.

Specific Plan. Land use designations in the proposed General Plan reflect the land use designations in these adopted specific plans.

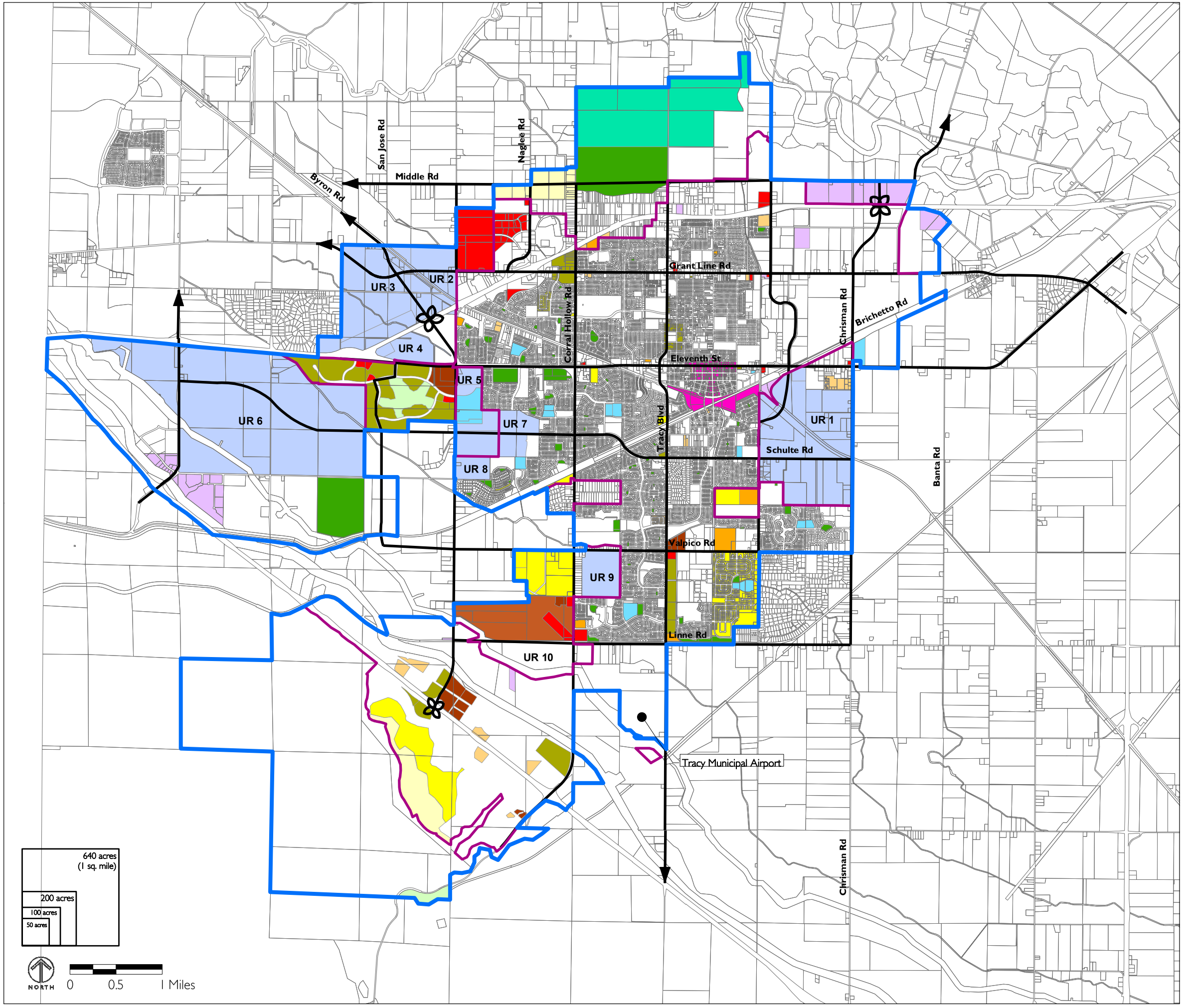
- **Planned Unit Developments (PUDs).** Since the 1993 General Plan was developed, there were numerous PUDs approved and/or built. These include Tracy Gateway, the Northeast Industrial Area PUD and numerous residential developments on the south and west sides of the city. In some instances, the approved PUD differed from the underlying land use designation in the 1993 General Plan. The proposed General Plan would change land use designations to be consistent with these PUDs.

- **New Land Use Designations**. The proposed land use designation map identifies locations where the new land use designations discussed in the previous section apply. Please note that the new land use designation called "Traditional Residential" (TR) described in Section 5.b above is not applied on the General Plan land use map. The TR designation is only applied through a particular project's development-level planning process (e.g. Specific Plan), and includes an identifier specific to the project in the designation name. The TR-Ellis designation described below is the only TR application on the General Plan land use map at this time.

  - *Downtown*. This designation is to be applied to areas around the existing Downtown area in order to support the vision of this area becoming a vibrant, cultural and economic focal point for the City.
  - *Village Centers*. Several Village Centers are identified in order to provide the community with mixed-use, walkable "main street" areas.
  - *Office*. This designation is to be applied to parcels where the City would like to see medium- and large-scale office projects. The Office designations are primarily located in Tracy Gateway, Tracy Hills and along Tracy Boulevard south of Valpico Road.
  - *Traditional Residential – Ellis*. This designation is to be applied to the Ellis Specific Plan area, covering approximately 287 acres near the Tracy Municipal Airport and including a mix of residential densities and park uses.

**FIGURE 3-6**

# PROPOSED CHANGES TO 1993 GENERAL PLAN LAND USE DESIGNATIONS

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- Aggregate
- UR — Urban Reserve; Urban Reserve
- **Major Arterial/Expressway/Boulevard**

- *Urban Reserve*. This designation is to be applied to large undeveloped parcels outside of the City limits but inside of the SOI. Ten urban reserves were identified.

In addition, land use designation changes are proposed on some other parcels based on requests from property owners, comments made by the public, recommendations by the City Council and Planning Commission, and to rectify potential conflicts between existing and proposed uses.

**6. Community Character Element**

The proposed General Plan includes a new Community Character Element that is intended to protect and enhance the unique qualities and urban design character of the community. The Element identifies six "building blocks" for the City of Tracy: Neighborhoods, Employment Areas, the I-205 Regional Commercial Area, the Downtown, Village Centers and Corridors. Each area of the city is intended to conform to the design principles of one of these building blocks.

Neighborhoods are the primary residential areas of Tracy. They are to contain a mix of housing types designed around a focal point such as a park or school. Employment Areas are the primary job centers for Tracy and contain industrial, commercial and retail uses, as well as public spaces such as parks or plazas. The Downtown is the cultural and historic heart of the city. Characteristics of the Downtown that are described and supported by the Community Character Element include a concentration of civic and cultural uses, mixed-use development with a backbone of retail use, streets on a grid or modified grid, multi-modal street design, a pedestrian-oriented environment, and direct pedestrian and bicycle connections to residential neighborhoods. The I-205 Regional Commercial Area is destination-oriented and serves as the city's primary retail environment outside of the Downtown. Village Centers are retail and commercial areas that may also contain residential and small-scale public or publicly-oriented uses. Corridors are primarily linear commercial areas that may also contain residential and office uses.

The Community Character Element contains goals, objectives, policies and actions for the design quality and character of each of the building blocks. Important concepts include creating focal points for residential neighborhoods such as a park or plaza, orienting buildings and sites to the pedestrian environment, creating a mix of uses, providing access to goods and services, enhancing multi-modal connectivity, and ensuring high quality urban design and architecture.

**7. Open Space Policies**

The proposed General Plan includes new policies and actions intended to preserve and enhance open spaces in and around the City of Tracy. These concepts are detailed in the Open Space and Conservation Element but reinforced in the Land Use Element.[14] Proposed policies and actions include the following:

- Preparing a comprehensive plan that identifies areas for different types of open space and determines the best methods of preserving, acquiring and maintaining open spaces.
- Working with San Joaquin County and the City of Lathrop to develop community separators or to retain significant undeveloped lands between the communities of Tracy, Mountain House and Lathrop.
- Identifying locations for soft and hard edges to the city. Soft edges are defined as a feathering of density between urban and rural uses. Hard edges are an abrupt separation between urban and rural uses such as a landscaped buffer, a fence or a highway.
- Working with landowners, non-profit organizations and San Joaquin County to identify and preserve agricultural uses.
- Ensuring that additional parks and recreational facilities are provided for residents that are available concurrently with need.

**8. Circulation Improvements**

Under the proposed General Plan, the City will implement a significant number of new roadways and other changes to its roadway network. These are described below and shown in Figure 3-7. These new roadways primarily consist of arterials and new interchanges to serve future development in the western portion of Tracy, including connections from Interstate 205 to Byron, Lammers and Grant Line Roads, and a westward extension of Schulte and Linne Roads. There is a also a major arterial which connects Chrisman Road to Interstate 205 and Arbor Avenue to the north, and several minor arterial and collector roadways which are proposed for the eastern edge of Tracy. In addition, as development occurs, more localized improvements to existing roadways will be necessary. These improvements include the addition of travel lanes, new signals, widening of intersection and reclassifications of roadways.

In addition, proposed General Plan policies call for regular updates to plans for the bicycle, transit, freight and other circulation systems. However, no specific changes to these transportation systems are proposed in the General Plan.

**9. General Plan Development Projections**

This EIR provides an analysis of development that is projected to occur through the 2025 planning horizon of the General Plan, as well as total future growth within the City limits and SOI. This section summarizes the amount of residential and non-residential development expected under both scenarios, as shown in Table 3-2.

The residential development projections in this EIR are based on the City's Growth Management Ordinance. Non-residential projections are based primarily on past trends in the City of Tracy and neighboring jurisdictions.

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[14] The 1993 General Plan has separate elements for the topics of Open Space and Conservation, whereas the proposed General Plan combines them into one element.

a. Development through 2025

Although the SOI is designed to accommodate a 30-year growth horizon, this EIR focuses on development projections for 2025, which is the planning horizon for the General Plan. The development projection analyzed in this EIR is based on best available forecasts of actual growth in 2025, as discussed further in this section.

It is generally held that modeling of traffic and associated air quality and noise impacts much beyond a 20-year time period is inaccurate and unreliable. Therefore, this EIR analyzes growth occurring between 2008 and 2025, a 17-year buildout horizon, with the exception of the traffic, noise and air quality analyses, which extend to a 2030 horizon, or 22 years. The 2030 development projection is used for those sections because the traffic modeling, which also affects the air quality and noise analyses, is based on the San Joaquin Council of Governments (SJCOG) regional travel demand model, which was recently updated to 2030. The amount of growth projected for the period between 2008 and 2025 has been calculated for residential, industrial, retail and office development using the methodology described below.

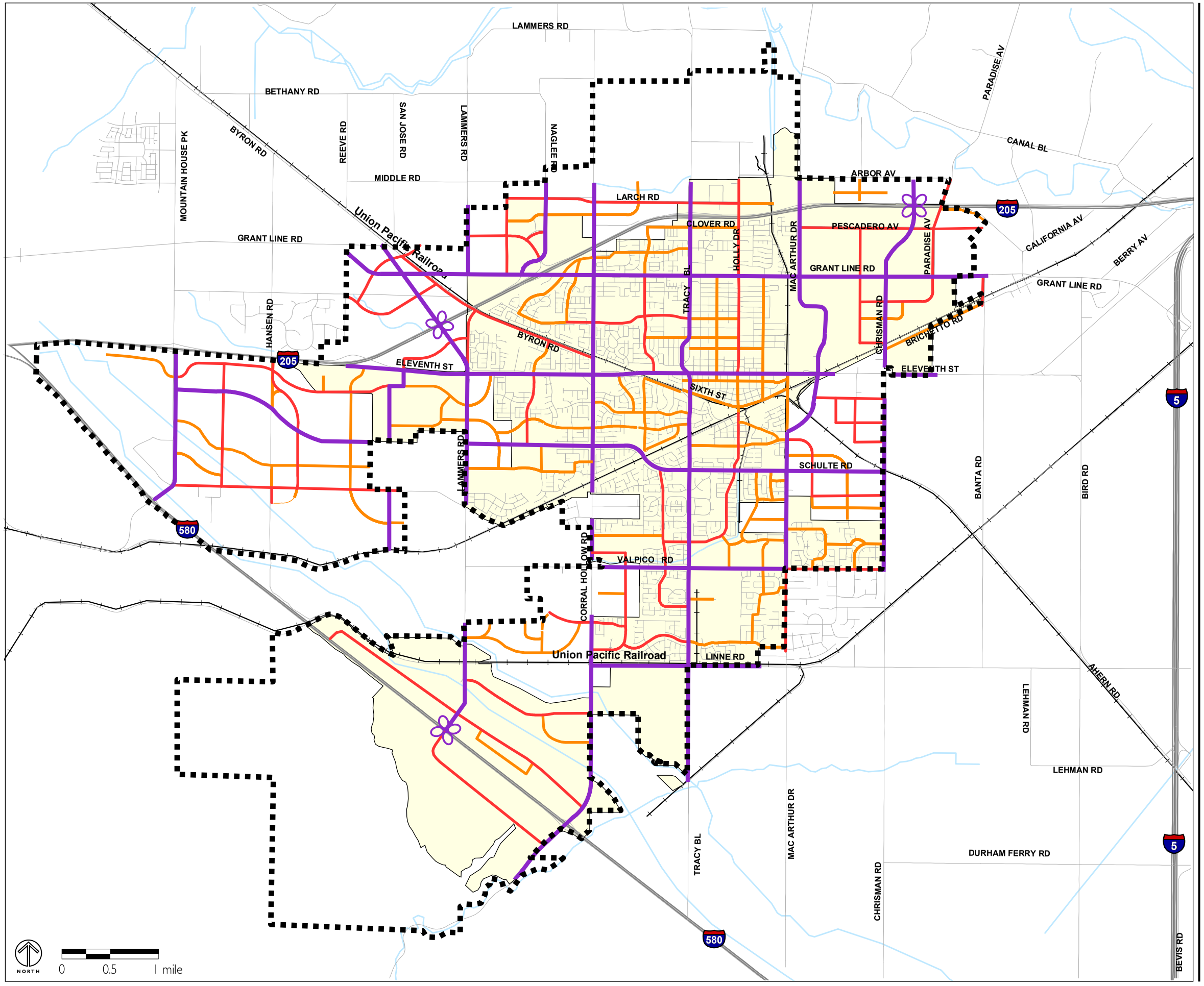
As shown in Table 3-2, during the period between 2008 and 2025, the proposed General Plan is expected to result in approximately 9,500 new housing units, 9.4 million square feet of industrial development, 3.4 million square feet of retail development and 1.7 million square feet of office development. In 2025, Tracy's total residential population is projected to be approximately 112,600 people and the employee population is projected to be approximately 53,800 people. The amount of projected buildout for the 2025 planning horizon in each of the eleven Urban Reserve areas is shown in Table 3-3.

*i. Residential Development*

The General Plan 2025 development projections are based on land use designations, available acres and the existing building allotment regulations in Tracy.

FIGURE 3-7

# ROADWAY CLASSIFICATION AND CONCEPTUAL ALIGNMENTS




Major Arterial / Expressway / Boulevard

Minor Arterial / Major Collector

Other Collector

City Limits

Sphere of Influence

Data Source: Fehr & Peers, 2005.

**Notes:**

**1. Conceptual layout only**

**2. Revisions/additions to minor arterials and other collectors will occur during development process.**

**3. The location of the Chrisman/Paradise interchange shown on this map represents one option for the interchange location, but a final location has not yet been selected. Another option for this area is to use Paradise Road rather than construct a new overcrossing.**

TABLE 3-2 **2025 AND TOTAL CITY + SOI PROJECTIONS**

| | Through 2025 | Total Additional City and SOI |
|---|---|---|
| **Residential*** | 9,500 units | 13,225 to 21,300 units |
| **Non-Residential** | | |
| Retail | 3,400,000 SF | 19,600,000 SF |
| Office | 1,700,000 SF | 13,800,000 SF |
| Industrial | 9,400,000 SF | 82,700,000 SF |
| Population (Additional/***Total)*** | 31,000/***112,600*** | 43,000 to 70,000 /*124,500 to 151,500* |
| Employees (Additional/***Total)*** | 21,300/***53,800*** | 163,000/ *193,000* |

Note: This table shows new growth only, unless otherwise specified.
*Note that Urban Reserves permit a range of densities.
Source: City of Tracy and Design, Community & Environment, 2008.

The City adopted a residential Growth Management Ordinance (GMO) in 1987. The goal of the GMO is to achieve a steady and orderly growth rate that allows for the adequate provisions of services and community facilities, and includes a balance of housing opportunities. According to the GMO, builders must obtain a Residential Growth Allotment (RGA) in order to secure a residential building permit. One RGA equals the public services and facilities required by one dwelling unit.[15]

Residential growth under the General Plan will be limited by the GMO. As shown in Table 3-4, for the years 2008 through 2011, the GMO allows 100 building permits per year. In 2012, the GMO will allow for at least 219 building permits, possibly more, based on the permit activity between 2009 and 2012.

[15] City of Tracy *Residential Growth Management Plan*, 2005, page 5.

TABLE 3-3 **PROJECTED DEVELOPMENT THROUGH 2025 IN URBAN RESERVE AREAS**

| | Population | Dwelling Unit (DU) | % of Total DUs[a] | Jobs | % of Total Jobs[b] |
|---|---|---|---|---|---|
| UR 1 | 167 | 51 | < 1% | – | – |
| UR 2 | 327 | 100 | < 1% | 444 | 1% |
| UR 3 | – | – | – | 815 | 2% |
| UR 4 | – | – | – | 222 | < 1% |
| UR 5 | 2,453 | 750 | 2% | – | – |
| UR 6 | – | – | – | 3,495 | 6% |
| UR 7 | 2,453 | 750 | 2% | – | – |
| UR 8 | 657 | 200 | 1% | – | – |
| UR 9 | 2,214 | 677 | 2% | – | – |
| Ellis | 5,232 | 1,600 | 5% | 578 | 1% |
| UR 11 | – | – | – | – | – |
| **Total** | **13,503** | **4,128** | | **5,554** | |

Note: < = less than.

[a] Based on 35,000 total dwelling units projected total for 2025.

[b] Based on 53,800 total jobs projected for 2025.

Between 2013 and 2025, 600 building permits per year (on average) will be allowed under the GMO. Thus, between the years 2008 and 2025, the number of residential units allowed under the City's GMO is 8,419 units.[16]

[16] The total building permits for 2008 through 2025 was calculated with the following methodology: (100 building permits x 4 years [2008 through 2011] + 219 building permits x 1 year [2012] + 600 building permits x 13 years [2013 through 2025] = 8,419.

TABLE 3-4 **RESIDENTIAL GROWTH ALLOTMENTS (2008 TO 2025)**

| Year | Building Permits per Year |
|---|---|
| 2008 | 100 |
| 2009 | 100 |
| 2010 | 100 |
| 2011 | 100 |
| 2012 | 219 |
| 2013 through 2025 | 600 |
| **Subtotal** | **8,419** |
| Affordable Units | 1,080 |
| **Total New Units** | **9,499** |
| **Existing Units** | **25,478** |

Source: City of Tracy. January 15, 2008. City Council Agenda Packet, Agenda Item 5, page 3.

The GMO includes exceptions to allow for additional affordable housing. The General Plan Housing Element sets a goal of 60 affordable housing units per year, or 1,080 units between 2008 and 2025. Therefore, it is assumed that 1,080 affordable housing units over and above the 8,419 market rate units will be built between 2008 and 2025. Thus, the 2025 development scenario includes the addition of 9,499 units of housing. Added to the 25,478 housing units in Tracy in 2008, these 9,499 housing units will bring the total housing unit count to approximately 35,000 in 2025.

These 9,499 new housing units can be expected to result in an additional 31,000 people (using a multiplier of 3.27 persons per household).[17] This would result in a total population of approximately 112,600 people.[18]

*ii. Industrial Development*

The projected increase in industrial development from 2008 to 2025 has been determined based on past trends. An analysis of the past five years of industrial development revealed that approximately 550,000 square feet on average was constructed each year. This EIR assumes that this trend will continue into the future. Thus, 9.4 million square feet of new industrial space is projected to be developed through 2025. Based on an average of one employee per 1,000 square feet of building space, this translates into 9,400 new employees in the industrial sector.

*iii. Retail Development*

The increase in retail development from 2008 to 2025 has been projected based on past trends. An analysis of the past five years of retail development revealed that approximately 200,000 square feet on average was constructed each year. This EIR assumes that this trend will continue into the future. Thus, 3.4 million square feet of new retail space is assumed to be developed through 2025. Based on an average of two employees per 1,000 square feet of building space, this translates into 6,800 new employees in the retail sector.

*iv. Office Development*

In order to determine a reasonable estimate for new office uses for the planning horizon, an analysis of office development trends over the last five years in the City of Tracy and City of Livermore was conducted. Livermore was selected since it is close to Tracy and experienced an expansion of office development over the last decade.

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[17] California Department of Finance, estimate for January 2008, http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/, accessed on September 15, 2008.

[18] According to the 2008 Department of Finance estimate, the population of Tracy was approximately 81,548 in 2008.

Based on this analysis, this EIR assumes that an average of approximately 100,000 square feet per year of office space would be constructed. This translates into 1.7 million square feet of office space through 2025 and, based on three employees per 1,000 square feet, an addition of 5,100 new employees.

*v. Development Locations*

The amount of vacant and underutilized land within the existing City limits and proposed SOI will accommodate a larger amount of growth than is assumed for the planning horizon of the General Plan. The additional land proposed for the SOI is needed to provide for a healthy real estate market, and is also allowed by LAFCO policies that provide for an SOI to account for local policies related to the rate of residential and non-residential growth, anticipated absorption of land, and policies and strategies for economic and employment growth.

Since the land supply will not all be developed by 2025, this EIR must make assumptions regarding future development locations. For the purposes of this EIR, new residential and non-residential growth is expected to be distributed throughout the City limits and SOI based on a number of factors, including the availability of land, vested RGAs for projects that have not completed construction, existing approved specific plans, conversations with developers and landowners, and residential growth policies in the proposed General Plan. This represents a "best estimate" as to where growth will locate through 2030. It is not a statement of policy.

In this EIR, new residential growth is assumed to be distributed throughout the existing City limits and largely on the west side of the SOI. It is assumed that 2,000 units would be infill development; that is, within the existing urbanized areas on vacant or underutilized parcels. This EIR also projects concentrations of housing in and around the Downtown, along Valpico Road, and in the northern portion of Urban Reserve 5 that abuts Eleventh Street. Additionally, housing is projected to be located along the western and southern edge of the City (inside and outside of the City limits) in Urban Reserves 5, 7, 8, 9 and 10, and in Tracy Hills.

New non-residential development is also projected to be located throughout the SOI. Industrial growth is assumed to be located in the Northeast Industrial Area, Urban Reserves 3 and 6, as well as a few areas in the Industrial Specific Plan (ISP) area, in Tracy Hills along Interstate 580, and near the Tracy Municipal Airport in southern Tracy. Retail growth is assumed to be distributed in the Downtown/Bowtie area, the Interstate 205 area, along Grant Line and Valpico Roads, Larch Clover, Urban Reserves 3, 4 and 10, as well as in Tracy Hills. Office growth is projected to focus in Tracy Gateway and on Tracy Boulevard south of Valpico Road, near the intersection of Grant Line Road and Tracy Boulevard and in Tracy Hills along Interstate 580.

b. Total Buildout

In this EIR, the term "total buildout" refers to a scenario in which all available land within the SOI would be developed according to the land use designations in the proposed General Plan. As noted above, the amount of vacant and underutilized land within the SOI will accommodate a larger amount of growth than is assumed to occur during the planning horizon of the proposed General Plan. When compared to the 2025 development projections, total buildout would result in more development and would occur farther into the future.

As is shown in Table 3-2, buildout of the SOI is expected to add between 13,225 and 21,300 new housing units; 82.7 million square feet of industrial development; 19.6 million square feet of retail development; and 13.8 million square feet of office development. The total residential population at total buildout is projected to be between 124,500 and 151,500 people, and the total employee population is projected to be approximately 193,000.

Total buildout for residential and non-residential development was estimated by applying land use designations in the proposed General Plan to vacant and underutilized land within the SOI. For parcels with the Urban Reserve land use designation, the amounts and types of land uses provided in the statistical profiles for each Urban Reserve were used for estimating purposes. For the Tracy Hills Specific Plan and Tracy Gateway PUD areas, the amounts of to-

tal future residential and non-residential development included in the approved plans were used in estimating total buildout. These buildout estimates were then refined based on site constraints.

Congruent with the 2025 development projection, the total buildout scenario makes similar assumptions regarding residential and employee populations. Based on this methodology, the total buildout scenario would result in between 13,225 and 21,300 new units. Using a multiplier of 3.27 persons per household based on the 2008 Department of Finance estimate, total buildout of the SOI would result in between 43,000 to 70,000 new people for a total of between 124,500 and 151,500 people.[19]

The total buildout scenario uses the same employee generation rates as the 2025 development projection for retail, office and industrial uses. Thus, based on an average of one employee per 1,000 square feet of industrial building space, this translates into approximately 83,000 new employees in the industrial sector. Based on an average of two employees per 1,000 square feet of retail building space, this translates into approximately 39,000 new employees. Based on an average of three employees per 1,000 square feet of office building space, this translates into approximately 41,000 new employees. As shown in Table 3-2, the number of new employees is estimated to be 163,000, for a total of 193,000 employees when added to the existing employee figure.

### *C. Proposed Sustainability Action Plan Description*

The proposed Sustainability Action Plan is a detailed, long-range strategy to achieve sustainability in the sectors of GHG emissions, energy, transportation and land use, solid waste, water, agriculture and open space, biological resources, air quality, public health, and economic development. The Sustainability Action Plan establishes targets related to a variety of sustainability

[19] Additional population projected from total buildout was added to the 2008 Department of Finance estimate, which was 81,548.

topics, and sets forth measures that will assist the City of Tracy in reaching those goals.

**1. Targets**

The proposed Sustainability Action Plan establishes the following targets for each of the sustainability topics.

a. Greenhouse Gas Emissions

- Target #1a: 29 percent reduction of community GHG emissions from 2020 Business As Usual (BAU) projected levels.
- Target #1b: 29 percent reduction of municipal GHG emissions from 2020 BAU projected levels.

b. Energy

- Target #2a: 25 percent of all community energy needs provided by renewable sources.
- Target #2b: 25 percent of all municipal energy needs provided by renewable sources.
- Target #3a: New residential and non-residential buildings powered by 10 percent using on-site solar panels.
- Target #3b: New municipal buildings powered by 10 percent using on-site solar panels.
- Target #4a: 15 percent reduction in community energy consumption from current (2006) levels.
- Target #4b: 10 percent reduction in the municipal peak electrical load from current (2006) levels.

c. Transportation and Land Use

- Target #5a: 20 percent increase in the percentage of non-City employees who participate in travel demand management programs from current (2006) levels.

- Target #5b: 20 percent increase in the percentage of City employees who participate in travel demand management programs from current (2006) levels.
- Target #6a: 20 percent reduction in the community VMT per capita from current (2006) levels.
- Target #6b: 20 percent reduction in the municipal VMT from current (2006) levels.

d. Solid Waste

- Target #7a: 75 percent of the community waste stream is diverted from landfills.
- Target #7b: 75 percent of the municipal waste stream is diverted from landfills.
- Target #8a: 50 percent of community construction waste is reused or recycled.
- Target #8b: 50 percent of municipal construction waste is reused or recycled.

e. Water

- Target #9a: 20 to 40 percent reduction in per capita water use from current (2006) levels.
- Target #9b: 20 to 40 percent reduction in municipal water use from current (2006) levels.

f. Agriculture and Open Space

- Target #10: No loss of Prime Farmland, Farmland of Statewide Significance, or Unique Farmland outside of the City's Sphere of Influence (SOI).

- Target #11: Any loss of such farmland inside of the SOI is offset by mitigation fees to a qualified agricultural preservation trust such as the Central Valley Farmland Trust, at a ratio related to every acre that is lost.

g. Biological Resources

- Target #12: Any loss of critical habitat corridors is mitigated through the Habitat Conservation Plan.

h. Air Quality

- Target #13: 25 percent reduction in the number of days exceeding National and California Ambient Air Quality Standards.

i. Public Health

- Target #14a: 50 percent reduction in the percentage of obese adults in Tracy from current (2006) levels.
- Target #14b: 50 percent reduction in the percentage of obese children in Tracy from current (2006) levels.
- Target #15: 90 percent of households within ½ mile of a retail outlet selling fresh food, and/or with a retail outlet selling fresh food as their closest food retailer.
- Target #16: 90 percent of households within ¼ mile of a neighborhood or regional park or recreation facility.

j. Economic Development

- Target #17: Ratio of jobs to employed residents with matched skills between .90 and 1.10.
- Target #18: 10,000 square feet of neighborhood-serving retail within ¼ mile of 75 percent of all residents.
- Target #19: 50 percent of all new housing starts at densities of 15 units per acre or greater.

- Target #20: "Economic Diversity Index" score equal to or better than the statewide average.
- Target #21: 10 percent of jobs are "green" by practice or product.

**2. Sustainability Measures**

To meet each of the targets listed above, the proposed Sustainability Action Plan contains measures that the City of Tracy will implement to achieve its sustainability goals. While the Sustainability Action Plan includes separate greenhouse gas emission and air quality targets, separate measures specific to those sectors are not provided since they are closely tied to the other sectors, such as energy, transportation and land use, solid waste, and water.

a. Energy

The proposed Sustainability Action Plan includes the following nine sustainability measures within the energy sector:

- Green Building Ordinance
- Energy Efficiency in Site Planning and Design
- Green Building and Energy Efficiency Design and Education
- Energy-Efficient Products and Retrofits
- Weatherization for Low-Income Households
- Financing for Energy Efficiency and Renewable Energy Projects
- LED Retrofits for City Street Lights
- Solar Panel Installations on Municipal Facilities
- Energy Efficiency Settings for City Desktop Computers

b. Transportation and Land Use

The proposed Sustainability Action Plan includes the following 22 sustainability measures in the transportation and land use sectors:

- Live-Work and Work-Live Uses
- Reduced Parking Requirements
- Support for Bicycling
- Support for Transit
- Smart Growth, Urban Design and Planning
- Traffic Smoothing Through Congestion Management

- San Joaquin County Park and Ride Lot Master Plan Implementation
- Alternative Transportation Choices for Students
- Car-Share Program
- Comprehensive Signal Coordination Program
- Ramp Metering on Interstate 205
- Increased Transit to Bay Area Cities and San Joaquin Valley Employment Centers
- Altamont Route Approval and Transit-Oriented Development Around Rail
- Reduce Commute Trips
- Parking Cash-Out Programs for Employees
- Reduced Commuting from Out of the Region
- Transit Passes for Residents And Employees of New Developments
- Increased Use of Low Carbon Fueled Vehicles
- Carbon Sequestration on Municipal Property
- Mixed-Use and Traditional Residential Development
- Employment-Generating and High-Density Infill Projects
- Compressed Natural Gas Buses for the City's Fleet

c. Solid Waste

The proposed Sustainability Action Plan includes the following four sustainability measures in the solid waste sector:

- Diversion of Construction Waste from Landfills
- Increased Recycling
- Recycling Service for Multi-Family Housing
- Municipal Recycling and Reuse

d. Water

The proposed Sustainability Action Plan includes the following four sustainability measures in the water sector:

- Potable Water Conservation through Development Standards, Public Education, and Municipal Wastewater Reuse
- Water Efficient Landscape Ordinance

- Incentives for Water Efficiency Retrofits
- Water Conservation Pricing

e. Agriculture and Open Space

The proposed Sustainability Action Plan includes the following seven sustainability measures in the agriculture and open space sectors:

- Agricultural Mitigation Fee Ordinance
- Farmland Preservation Around Tracy
- Small-Scale and Pesticide-Free Food Production
- Increased Attendance at Weekly Farmers' Markets
- Parkland Requirement Increase
- Natural Landscape and Minimal Turf in City Parks
- Carbon Sequestration through Cultivation Practices

f. Biological Resources

The proposed Sustainability Action Plan includes the following seven sustainability measures in the biological resources sector:

- Setbacks and Buffers Along Riparian and Critical Habitat Corridors
- Consistency with Federal, State and Regional Regulations for Habitat and Species Protection
- Native Landscaping
- San Joaquin County Habitat Conservation Plan
- Stormwater Best Management Practices
- Joint Use of Retention and Detention Facilities
- Sustainable Storm Drainage Design

g. Public Health

The proposed Sustainability Action Plan includes the following 12 sustainability measures in the public health sector:

- Public Education and Outreach on Healthy Eating and Exercise
- Healthy Practices at City Offices and City-Sponsored Events
- Recreational Programs and Activities
- Joint-Use Agreements for Recreational Facilities
- Grants for Increased Park Capacity

- Active Recreation in Parks
- Goods, Services, and Recreation in Underserved Neighborhoods
- Community Garden Inventory and Development
- Process for Community Garden Adoption By Neighborhoods
- Public Food Benefits at Farmers' Markets
- Municipal Integrated Pest Management (IPM) Program
- Non-Toxic Building Materials

h. Economic Development

The proposed Sustainability Action Plan includes the following 14 sustainability measures in the economic development sector:

- Job Training and Job Placement
- Opportunity Sites Inventory for Affordable Housing
- Shared and Public Parking
- Technical Assistance to Businesses
- Retention, Recruitment, and Support of Industry Clusters and High-Wage Jobs
- Work Groups with Industry Leaders
- Recruitment of Firms to Match Skills and Education Levels of Tracy Residents
- Local Hiring for Contracts and Services
- Child Care Services Near Jobs
- Accessible Locations for Local Government and Civic Institutions
- Warehousing, Transportation and Manufacturing Uses Along Rail Spurs in the Northeast Industrial Area
- Green Business Program
- Variable Frequency Drives in City Water Pumps
- Methane Recovery at Wastewater Treatment Facilities

i. Outreach and Education

The proposed Sustainability Action Plan also includes six measures categorized as outreach and education. These measures will foster public awareness of sustainability issues and efforts, and will support implementation of other sustainability measures. The outreach and education measures are as follows:

- Sustainability Criteria in Evaluation of Proposals and Applications
- Green Building Training for City Staff
- Emerald Tracy Website
- Sustainable Communities Strategy
- Coordination with Other Agencies for Green Building Policies and Programs
- Public Education on Non-Petroleum Waste Oil Collection Locations

**3. Sustainability Benefits**

The measures described above are expected to provide the following sustainability benefits:

- **Greenhouse Gas Emissions.** Implementation of the Sustainability Action Plan would reduce GHG emissions by between 382,422 and 486,115 metric tons of carbon dioxide equivalent ($MTCO_2e$).
- **Energy.** Implementation of the Sustainability Action Plan would reduce electricity consumption in Tracy by approximately 293 million kilowatt hours (kWh) per year and natural gas consumption by approximately 5 million therms per year. In addition, 16 measures would assist the City in reaching its energy conservation targets, and six measures would assist the City in reaching its renewable energy targets.
- **Transportation and Land Use**. The 27 transportation and land use sector measures will reduce vehicle miles traveled, reduce GHG emissions, and improve air quality through a variety of strategies, including: efficient land use patterns; provisions to increase transit ridership, walking, and bicycling; carbon sequestration; and use of alternative fuels.
- **Solid Waste**. Eleven measures in the Sustainability Action Plan would reduce the amount of waste going to landfills through increased reuse and recycling.
- **Water**. Eleven measures in the Sustainability Action Plan would conserve water, reduce potable water consumption through efficiency measures, and promote use of wastewater where possible.

- **Agriculture and Open Space**. Three measures in the Sustainability Action Plan would conserve and expand agricultural land, and six measures would expand open space.
- **Biological Resources**. Seventeen measures in the Sustainability Action Plan would conserve biological resources and assist the City in reaching its biological resource target.
- **Air Quality**. Twenty-six measures in the Sustainability Action Plan would improve air quality and assist the City in reaching its air quality target.
- **Public Health**. Twenty-one measures in the Sustainability Action Plan would improve public health and assist the City in its targets to reduce obesity, improve access to healthy food, and improve access to opportunities for physical activity.
- **Economic Development**. Fifteen measures would increase jobs, six measures would attract and retain business, and four measures would retail and increase the amount of affordable housing.

# 4 ENVIRONMENTAL EVALUATION

This chapter consists of six sections that evaluate the environmental impacts of the proposed General Plan and Sustainability Action Plan. Each section generally follows the same format, and consists of the following subsections:

- The *Existing Setting* portion describes current conditions with regard to the environmental factor reviewed.
- The *Standards of Significance* explain how an impact is judged to be significant in this EIR, based on various CEQA Guidelines standards.
- The *Impact Discussion* gives an overview of potential impacts, and tells why impacts were found to be significant or less than significant.
- The *Impacts and Mitigation Measures* number and list identified impacts and, where possible, identify measures that would mitigate each impact. A statement regarding the level of significance after mitigation is also included.

Each numbered impact discussed under the *Impacts and Mitigation Measures* section is considered significant prior to mitigation. As required, mitigation measures have been suggested that will reduce significant environmental impacts to less-than-significant levels, where feasible. Where mitigation would not reduce impacts to a less-than-significant level, impacts are noted as significant and unavoidable in the text.

All mitigation measures are stated with conditional language ("should") because they are recommendations, and not conditions of approval for the project, unless they are specifically adopted as conditions by the City. Under CEQA, although an EIR is required to identify mitigation measures that could reduce identified impacts to less-than-significant levels, a City is not required by State law to adopt these mitigation measures, even after the EIR is certified. The City could instead require alternative mitigation measures that are equally effective, or it could find that the identified measures are infeasible and approve the General Plan and Sustainability Action Plan without a specific mitigation under a finding of overriding consideration. If the City adopts the suggested mitigation measures as conditions of approval, then their language will be changed from the conditional "should" to the mandatory "shall."

As required by CEQA Guidelines, potential cumulative impacts for Sections 4.1 through 4.16 are considered and discussed in Chapter 6.

# 4.1 LAND USE

This section presents information on existing land uses in the City of Tracy and describes potential environmental impacts that the proposed General Plan and Sustainability Action Plan would have on these uses.

## *A. Existing Setting*

This section describes existing land uses in Tracy, the 1993 City of Tracy General Plan land use designations, existing plans and policies related to land use, and San Joaquin County's land use designations for those unincorporated areas within the City's proposed Sphere of Influence (SOI).

### 1. Existing Land Use

The following provides qualitative and quantitative descriptions of existing land uses in the City of Tracy, both for the area within the City limits and the area in the SOI. Data on existing land use is based on information collected by the San Joaquin County Assessor and verified by the City of Tracy. Figure 4.1-1 shows the existing land uses and Table 4.1-1 lists detailed acreages for each existing land use within the City limits and SOI, which are grouped into the following categories:

- **Residential — Single-Family Dwelling Unit**. This classification describes parcels that contain one residential unit with possible related structures such as secondary residential units, a garage or shed. Ninety percent of residential units within Tracy's City limits and the SOI are single-family dwellings. There are a total of approximately 3,586 acres in this category, 3,218 acres of which are in the City limits and 368 acres of which are in the SOI.
- **Residential — Two or More Dwelling Units.** Sites containing more than one residence, such as a duplex, apartment building or townhouse are included in this category. In Tracy, approximately 9 percent of residential parcels contain more than one dwelling unit. There are a total of approximately 347 acres in this category, 279 acres of which are in the City limits and 68 acres of which are in the SOI.

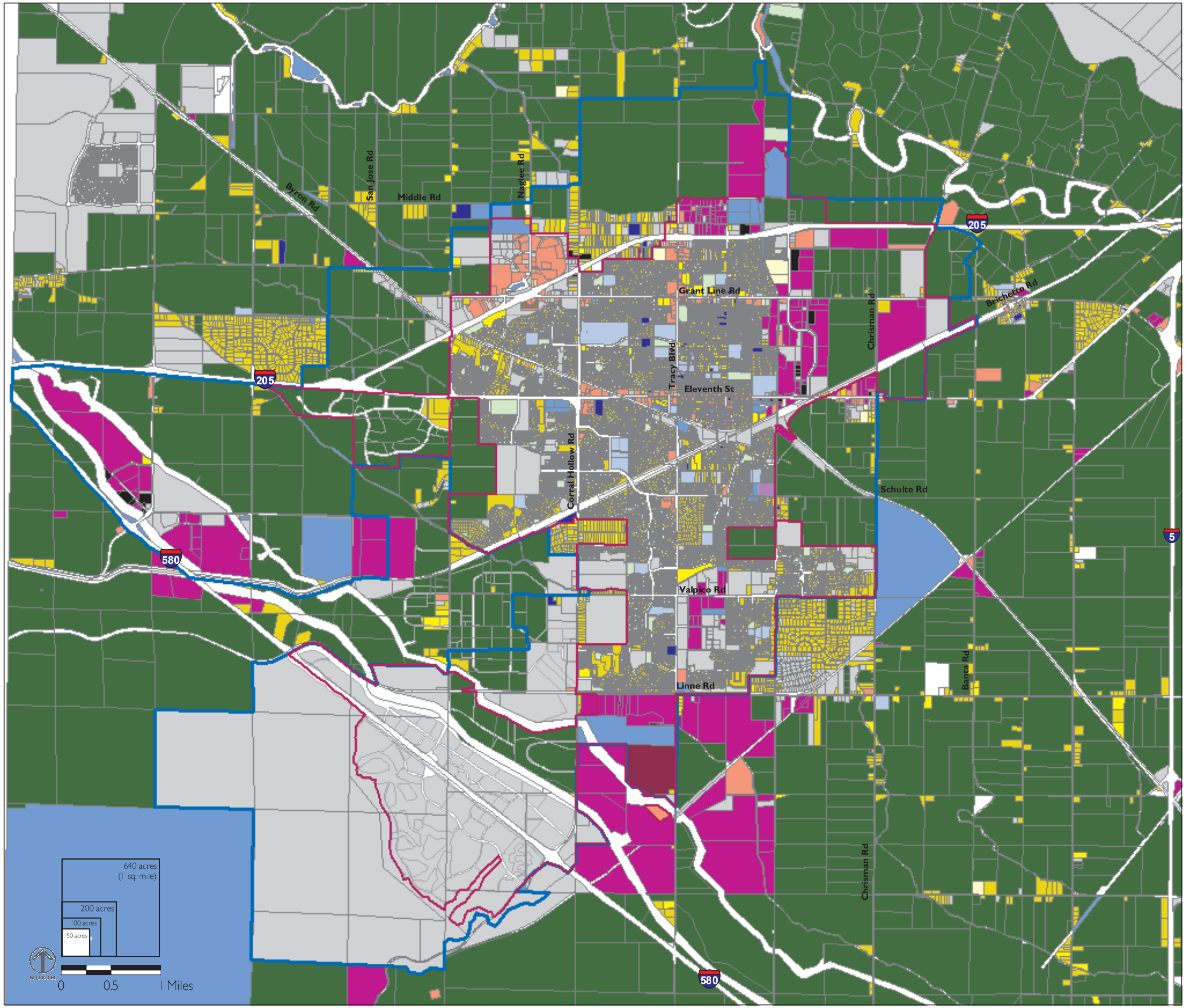
TABLE 4.1-1 **EXISTING LAND USE ACREAGE IN TRACY**[a]

| Land Use Category | City Limits | % of Total in City Limits | SOI | % of Total in SOI | Total Acres |
|---|---|---|---|---|---|
| Residential – Single Unit | 3,218 | 30% | 368 | 3% | 3,586 |
| Residential – Two+ Units | 279 | 3% | 68 | 1% | 347 |
| Residential – Mobile Home | 45 | Less than 1% | 13 | Less than 1% | 58 |
| Motel/Hotel | 13 | Less than 1% | - | - | 13 |
| Commercial | 482 | 4% | 34 | Less than 1% | 516 |
| Industrial | 849 | 8% | 912 | 8% | 1,761 |
| Mixed-Use | 7 | Less than 1% | - | - | 7 |
| Medical | 21 | Less than 1% | - | - | 21 |
| Park | 221 | 2% | 20 | Less than 1% | 241 |
| Public Facility | 442 | 4% | 289 | 2% | 731 |
| Vacant Building | 42 | Less than 1% | 35 | Less than 1% | 76 |
| Vacant Land | 3,114 | 29% | 4,445 | 37% | 7,558 |
| Agriculture | 1,618 | 15% | 5,699 | 48% | 7,318 |
| School | 305 | 3% | - | - | 305 |
| Airport | 148 | 1% | - | - | 148 |
| Place of Worship | 52 | Less than 1% | 22 | Less than 1% | 73 |
| Cemetery | 16 | Less than 1% | 1 | Less than 1% | 17 |
| **Total** | **10,872** | **100%** | **11,904** | **100%** | **22,776** |

[a] Information current as of December 31, 2003. Acreages have been rounded. Acreages do not include rights-of-way, canals or other waterways.

FIGURE 4.1-1

# EXISTING LAND USES IN TRACY (AS OF 2003)




- City Limits
- Sphere of Influence
- Residential - Single Dwelling Unit
- Residential - Two or More Dwelling Units
- Residential - Mobile Home Park
- Motel or Hotel
- Commercial
- Industrial
- Mixed Use
- Medical
- Public Facilities
- Park
- Vacant Building
- Vacant Land
- Agriculture
- School
- Airport
- Church
- Cemetery

- **Residential — Mobile Home Park.** Lands included in this category contain mobile homes or recreational vehicles that are for long-term residences. There are a total of approximately 58 acres of mobile home parks, 45 acres of which are within the City limits and 13 acres of which are in the SOI.

- **Motel/Hotel.** This use contains commercial lodging facilities of varying sizes. It includes bed and breakfast inns, motels and hotels. There are a total of approximately 13 acres within this category, all of which are within the City limits. A few hotels and motels are located along Eleventh Street close to the downtown area, with the remainder clustered in the northwest portion of the city, close to the I-205 Regional Commercial Area.

- **Commercial.** Sites with one or more types of retail and office facilities are included in this category. Typical parcels contain restaurants, grocery stores, shopping centers and office parks. There are approximately 516 total acres in this category, 482 acres of which are in the City limits and 34 acres of which are in the SOI. Major concentrations are along the Eleventh Street corridor and in association with the I-205 Regional Commercial Area in the northwest corner of the city.

- **Industrial.** These sites contain uses such as warehouses and distribution facilities, light manufacturing, self-storage facilities, aggregate deposits and extraction operations, and automobile garages. There are approximately 1,761 acres containing industrial uses, 849 acres of which are in the City limit and 912 acres of which are in the SOI. Several concentrations of these uses are in and around Tracy, including the Northeast Industrial Area, near Tracy Boulevard, West Tracy around Mountain House Parkway, and around the Airport.

- **Mixed-Use.** The mixed-use category includes parcels containing both commercial and residential uses, such as apartment units above retail stores. Currently there are approximately 7 acres of mixed-use in Tracy, all of which are within the City limits.

- **Medical.** This classification refers to parcels containing doctor, dentist and health care provider offices, as well as hospitals. There are a total of approximately 21 acres of medical land uses, all of which are within the City limits. Sutter Tracy General Hospital, the city's single hospital, is located on Tracy Boulevard, approximately ¼-mile north of the Eleventh Street intersection. In addition, a new medical facility for Kaiser Permanente was recently constructed near the intersection of Grant Line Road and Tracy Boulevard.

- **Park.** This category refers to established public and private open spaces and recreational facilities, such as playing fields, mini-parks and neighborhood and community parks. Currently there are approximately 241 acres of park land, 221 acres of which are within the City limits and 20 acres of which are in the SOI. Parks are typically moderately-sized and distributed throughout the city, often in the context of playing fields associated with schools. There is one large public sports complex on the west side of town, south of Eleventh Street.

- **Public Facility.** Public facilities are government-owned parcels, and include civic uses such as libraries, police and fire stations, municipal offices and the court house, and utilities. There are a total of approximately 731 acres in this category, 442 acres of which are within the City limits and 289 acres of which are in the SOI. Large concentrations of this land use include the wastewater treatment facility on the north side of town, the Defense Depot on the eastern edge of the city and the Civic Center.

- **Vacant Building.** Parcels containing unoccupied structures are classified as vacant. There are approximately 76 total acres of this use, 42 acres of which are in the City limits and 35 acres of which are in the SOI. Several smaller vacant buildings are located within the downtown area and a few larger parcels are located on the northern edge of the City limits.

- **Vacant Land.** This category refers to parcels without any structure or building, or that are used for agriculture. Currently there are approximately 7,558 total acres of vacant land, 3,114 acres of which are in the City limits and 4,445 acres of which are in the SOI. There are both large

single vacant parcels and groupings of smaller vacant parcels within the City limits.

- **Agriculture.** Working and non-working agricultural lands, for crops, grazing, dairy farms and related production are included in this category. A total of approximately 7,318 acres of agricultural lands exist on all four sides of Tracy, 1,618 acres of which are within the City limits and 5,699 acres of which are in the SOI, adjacent to the urban edge.
- **School.** This use includes public elementary, middle and high schools in school districts that serve the city, as well as private schools. There are 305 total acres for schools, all interspersed throughout the City limits.
- **Airport.** Tracy has one regional airport within its City limits, located on 148 acres on the south side of the city.
- **Place of Worship.** This use includes churches, synagogues, mosques, religious residences and spiritual retreat locations, but does not include private homes used for individual or small-group study. There are 73 total acres of land for places of worship, 52 acres of which are within the City limits and 22 acres of which are in the SOI.
- **Cemetery.** There is a 16-acre cemetery located within the City limits and a 1.3-acre cemetery located within the SOI.

### 2. Existing General Plan Land Use Designations

The land use map in the 1993 City of Tracy General Plan includes twelve land use designations, within which a broad range of uses is permitted. These land use designations are shown in Figure 4.1-2 and the amount of land within the City limits and SOI associated with each of these classifications are detailed in Table 4.1-2.

### 3. San Joaquin County General Plan Land Use Designations

Twenty square miles of the Planning Area in the proposed General Plan are beyond the City limits and designated as within the Tracy SOI. Although the City of Tracy General Plan proposes land use designations for these lands

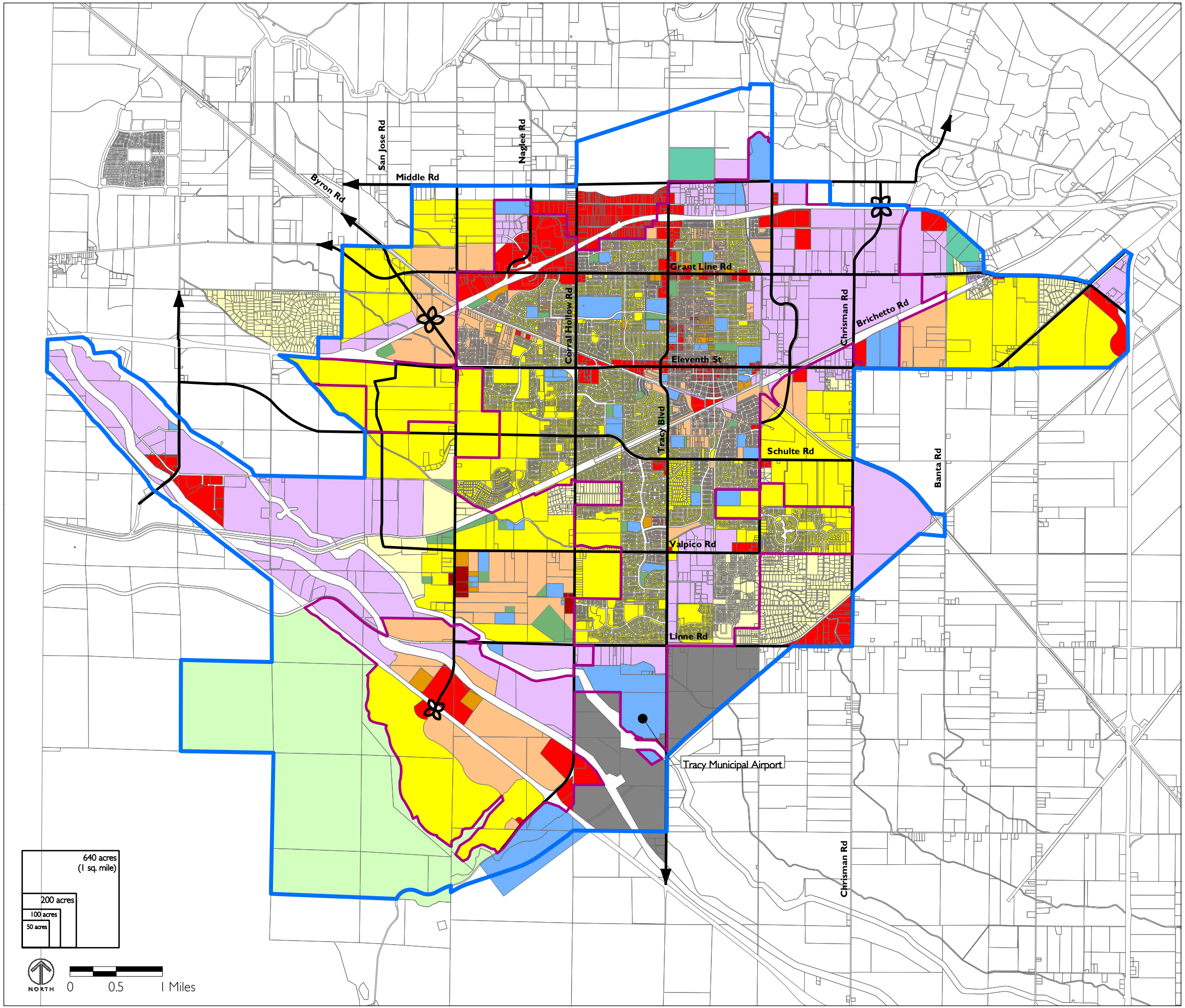
TABLE 4.1-2 **1993 GENERAL PLAN LAND USE DESIGNATIONS IN ACRES**

| Land Use Designations | City Limits | % of Total in City Limits | SOI | % of Total in SOI | Total Acres |
|---|---|---|---|---|---|
| Residential Very Low | 227 | 2.0% | 1,098 | 7.6% | 1,325 |
| Residential Low | 4,514 | 40.4% | 3,606 | 24.8% | 8,119 |
| Residential Medium | 1,670 | 14.9% | 1,240 | 8.5% | 2,910 |
| Residential High | 161 | 1.4% | 22 | 0.2% | 183 |
| Commercial | 1,020 | 9.1% | 574 | 4.0% | 1,595 |
| Industrial | 2,523 | 22.6% | 2,917 | 20.1% | 5,440 |
| Public Facilities | 938 | 8.4% | 359 | 2.5% | 1,297 |
| Parks | 112 | 1.0% | 159 | 1.1% | 272 |
| Open Space | 0 | 0% | 3,298 | 22.7% | 3,298 |
| Aggregate | 10 | 0.1% | 1,033 | 7.1% | 1,042 |
| Agriculture | 0 | 0% | 182 | 1.2% | 182 |
| Urban Center/ Mixed Use | 0 | 0% | 51 | 0.3% | 51 |
| **Total** | **11,175** | **100%** | **14,538.0** | **100%** | **25,713** |

beyond City limits, these lands remain under San Joaquin County's jurisdiction. The lands beyond the City limits, but within the proposed SOI, are primarily designated by San Joaquin County as General Agriculture, Industrial and Limited Agriculture, which typically includes wetlands or steep slopes that are difficult to cultivate, but may be used for grazing or habitat

**FIGURE 4.1-2**

# 1993 GENERAL PLAN LAND USE DESIGNATIONS




- City Limits
- 1993 Sphere of Influence
- Aggregate
- Agriculture
- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Commercial
- Urban Center/Mixed Use
- Public
- Industrial
- Open Space
- Park
- Federal Reserve/Open Space
- **Major Arterial/Expressway/Boulevard**

conservation. County land use designations for this area are shown in Figure 4.1-3.[1]

**4. Existing Plans and Policies**

In addition to the 1993 General Plan, other policy and planning documents that affect Tracy are described below.

a. Zoning Ordinance

Eighteen zoning designations are currently used in Tracy, which can be grouped into five basic types of land uses: residential, commercial, office, industrial and agriculture. The residential category is further subdivided by density, office and commercial categories are determined by type, and industrial zones are based on intensity of use. Zoning designations for the City are shown in Figure 4.1-4. The City of Tracy Zoning Ordinance is currently in the process of being updated.

b. Growth Management Ordinance

The City of Tracy adopted a residential Growth Management Ordinance (GMO) in 1987 that has since been amended several times, including an amendment in 2001 by the voter-initiated Measure A, which was passed in November of 2000. In general terms, the goal of the GMO is to achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities, and includes a balance of housing opportunities. Under the GMO, builders must obtain a Residential Growth Allotment (RGA) in order to secure a residential building permit. One RGA equals the public services and facilities required by one detached single-family dwelling unit.[2] The GMO limits the number of RGA's and building permits to an average of 600 housing units per year for market rate housing, with a maximum of 750 units in any single year. There are exceptions for affordable housing.

[1] *San Joaquin County General Plan*, 2000.

[2] *City of Tracy Residential Growth Management Plan*, 2005, p.5.

Implementation of the GMO to meet the goals and policies of the General Plan, including concentrated growth, infill development, and affordable housing as high priorities, is through the GMO Guidelines, which are adopted by resolution of the City Council. The GMO and GMO Guidelines establish the requirements to be eligible to apply for RGAs. The Guidelines also include specific qualitative and quantitative criteria for the allocation of RGAs with said criteria periodically updated as provided by the resolution.

c. Specific Plans and Large Planned Unit Developments

Numerous specific plans and large-scale planned unit developments (PUDs) have been adopted within the Tracy City limits and SOI to provide additional direction for development within each study area. The following is a list of the larger Plans:

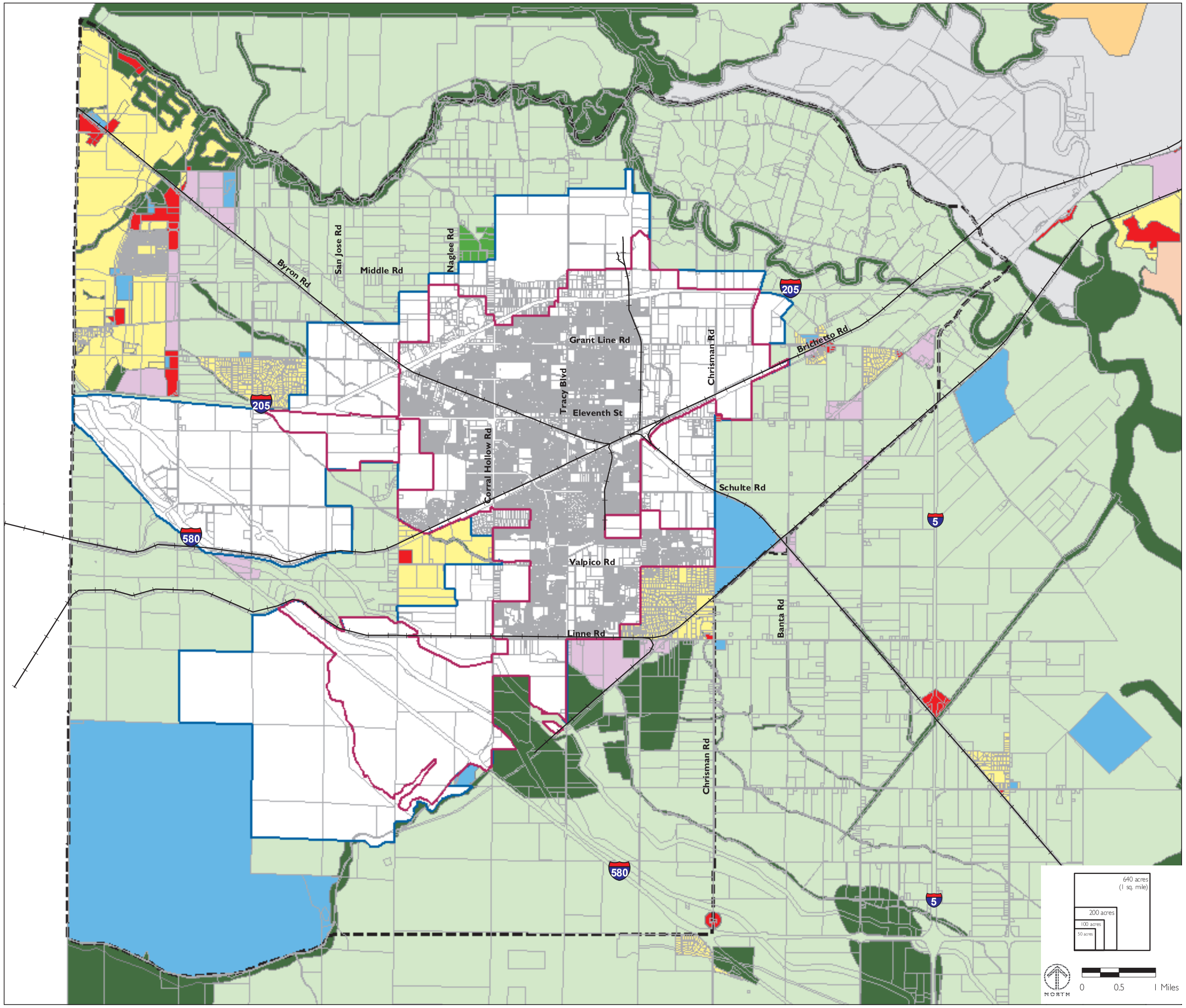
- Tracy Residential Areas Specific Plan
- Plan C (a collection of PUDs)
- I-205 Corridor Specific Plan
- Northeast Industrial PUD
- Industrial Area Specific Plan
- Ellis Specific Plan
- Tracy Gateway PUD
- Tracy Hills Specific Plan

d. San Joaquin County Airport Land Use Compatibility Plan

The Tracy Municipal Airport is subject to the *San Joaquin County Airport Land Use Compatibility Plan*. This Plan identifies future improvements for the airport to meet future aviation needs. The Plan also addresses land uses surrounding the airport by identifying compatible land uses for the various safety zones, since the type of development occurring in the airport environs impacts the safety of aircraft operation, as well as impacting the number of people exposed to aircraft hazards, such as airplane crashes.

FIGURE 4.1-3

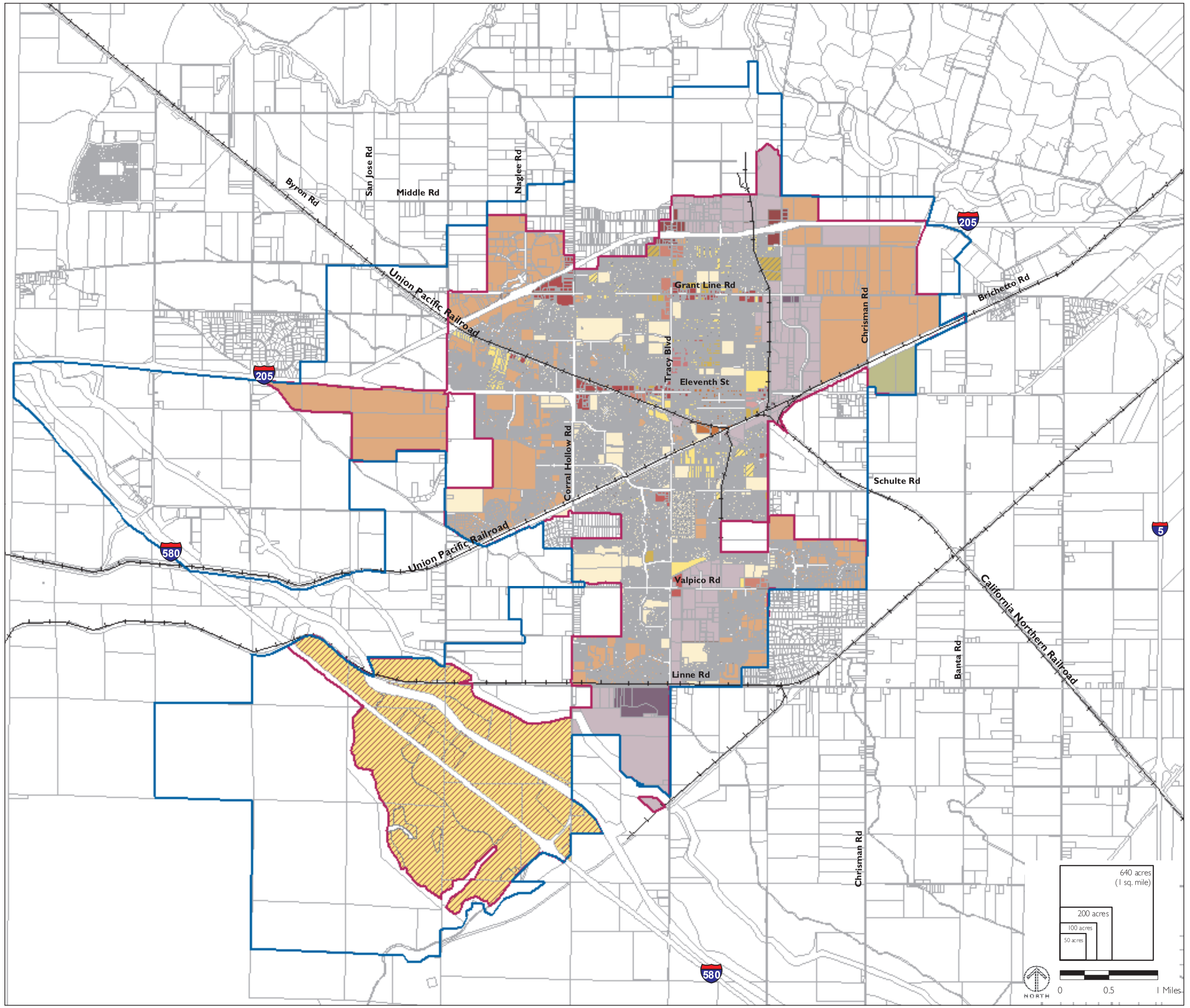
# SAN JOAQUIN COUNTY GENERAL PLAN LAND USE DESIGNATIONS OUTSIDE OF TRACY SPHERE OF INFLUENCE




- City Limit
- Proposed Sphere of Influence
- Planning Area
- Residential
- Commercial
- Industrial
- Public
- Park/Open Space
- General Agriculture
- Limited Agriculture
- Urban Reserve
- City of Lathrop
- City of Manteca

FIGURE 4.1-4

# CITY OF TRACY ZONING




- Residential Estate (RE)
- Low Density Residential (LDR)
- Medium Density Residential (MDR)
- Medium Density Cluster (MDC)
- High Density Residential (HDR)
- Residential Mobile Home (RMH)
- Planned Unit Development (PUD)
- Central Business District (CBD)
- Community Shopping Center (CS)
- Neighborhood Shopping Center (NS)
- General Highway Commercial (GHC)
- Highway Service (HS)
- Light Industrial (M-1)
- Heavy Industrial (M-2)
- Professional and Medical Offices (POM)
- Medical Office (MO)
- Agricultural (AG)
- Tracy Hills Specific Plan
- Proposed Sphere of Influence
- City Limit

e. San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

Tracy is part of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), which covers the entire county, with the exception of the federally-owned Site 300 (Lawrence Livermore National Lab), which is located in the foothills southwest of the city. The SJMSCP was prepared by the San Joaquin Council of Governments under a Memorandum of Understanding adopted by the San Joaquin Council of Governments, San Joaquin County, the US Fish and Wildlife Service, the California Department of Fish and Game, Caltrans, and the Cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy. The City of Tracy adopted the SJMSCP on November 6, 2001.

This 50-year plan addresses impacts to 97 special-status plant, fish and wildlife species found in 52 vegetative communities that occur in scattered localities throughout San Joaquin County. The SJMSCP compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing preserves, and similar public agency projects.[3]

f. Land Use and Resource Management Plan for the Primary Zone of the Delta

The Primary Zone of the Sacramento-San Joaquin Delta includes approximately 500,000 acres of waterways, levees and farmed lands extending over portions of five counties: Solano, Yolo, Sacramento, San Joaquin and Contra Costa. The Delta's environment supports a strong agricultural economy in

[3] *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan*, November 2000, page 1-1.

the region and has a critical role in preserving the region's water quality. In addition, the Delta provides habitat for many aquatic species as well as year-round and seasonal habitat for amphibians, reptiles, mammals and birds, including several rare and endangered species. The area is also extremely popular for water-oriented recreation, including fishing, boating and water-skiing.

Recognizing the threats to the Primary Zone of the Delta from potential urban and suburban encroachment and the need to protect the area for agriculture, wildlife habitat and recreation uses, the California Legislature passed and the Governor signed into law on September 23, 1992, the Delta Protection Act of 1992 (Senate Bill 1866). The Act directs the Delta Protection Commission to prepare a comprehensive resource management plan for land uses within the Primary Zone of the Delta.

The Delta Protection Act also includes a Secondary Zone; the Secondary Zone is not within the planning area of the Delta Protection Commission. The land use section of the *Land Use and Resource Management Plan for the Primary Zone of the Delta* does include one recommendation that "to the extent possible, any development in the Secondary Zone should include an appropriate buffer zone to prevent impacts of such development on the lands in the Primary Zone. Local governments should consider needs of agriculture in determining such a buffer."[4] All areas in the Tracy Planning Area that are part of the "Legal Delta" are classified as Secondary Zone areas by the Delta Protection Commission.

g. San Joaquin Local Agency Formation Commission Policies

The San Joaquin Local Agency Formation Commission (LAFCO) is required to adopt SOIs for each government agency within its jurisdiction, including the City of Tracy. SOIs are used by the San Joaquin LAFCO to:

[4] Delta Protection Commission, *Land Use and Resource Management Plan for the Primary Zone of the Delta*, Adopted February 23, 1995, http://www.delta.ca.gov/plan.asp; accessed on 9/13/05.

- Promote orderly growth and urban development.
- Promote cooperative planning efforts among cities, the county and special districts to address concerns regarding land use and development standards, premature conversion of agriculture and open space lands, efficient provision of services, and discouragement of urban sprawl.
- Serve as a master plan for future local government reorganization by providing long range guidelines for efficient provision of public services.
- Guide consideration of proposals and studies for changes of organization or reorganization.[5]

In approving an SOI, LAFCO is required to consider and make written determinations regarding the following factors:

- Present and planned land uses in the area, including agricultural and open space lands.
- Present and probable need for public facilities and services in the area.
- Present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.
- Existence of any social or economic communities of interest in the area relevant to LAFCO.[6]

LAFCO guidelines for determining an SOI require that "sphere horizons," or planning increments, depict a city's logical boundaries of between five and ten years, and up to 30 years. SOI areas must be consistent with General Plan land use elements, and with the municipal services review (MSR). Territory not in need of urban services, including open space, agriculture, recreational

[5] San Joaquin LAFCO, 2007, *Policies and Procedures for Spheres of Influence*. (http://www.co.san-joaquin.ca.us/lafco/Policies/New%20Policy%20&%20Procedures/SOI.pdf)

[6] San Joaquin LAFCO, 2007, *Policies and Procedures for Spheres of Influence*. (http://www.co.san-joaquin.ca.us/lafco/Policies/New%20Policy%20&%20Procedures/SOI.pdf)

lands, rural lands, and residential rural areas, shall not be included in an SOI unless exclusion would impede planned, orderly development. SOIs should maintain a separation between existing communities to protect open space and agricultural lands. The SOI for a City should include the agency's policies and approaches to meet its fair share of regional housing needs.[7]

### *B. Standards of Significance*

The City of Tracy General Plan and Sustainability Action Plan would create a significant land use impact if they would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- Allow development of land uses that would be incompatible with existing or planned surrounding uses.

### *C. Impact Discussion*

The proposed General Plan provides a guide to future growth within the City limits and SOI, as well as a general discussion of the Planning Area. Chapter 3 of this EIR provides an overview of the proposed General Plan (as amended), including the location of land uses proposed within the City limits and SOI, and projections of future growth occurring during the 17-year plan-

[7] San Joaquin LAFCO, 2007, *Policies and Procedures for Spheres of Influence*. (http://www.co.san-joaquin.ca.us/lafco/Policies/New%20Policy%20&%20Procedures/SOI.pdf)

ning period of the proposed General Plan and anticipated future growth within the City limits and SOI.

Implementation of the proposed General Plan would result in a change in land use for various parcels, both within the City limits and SOI. Table 3-1 in Chapter 3 depicts the anticipated change from existing General Plan land use designations to proposed land use designations. Figure 4.1-5 displays the proposed General Plan land use designations.

**1. Divisions of Existing Communities**

As described in Chapter 3, the majority of the growth under the General Plan is anticipated to occur on land that is currently vacant or under agricultural production. In those areas where development is proposed in existing neighborhoods, the Community Character, Circulation and Land Use Elements would work to promote the redevelopment of Tracy's existing neighborhoods in a way that preserves and enhances the character, identity and quality of the areas and does not allow new development to physically divide an existing neighborhood (Objective CC-6.3, Policy 4); and directs the City to ensure that there is a high level of street connectivity (Objective CIR-1.2, Policy 1 through Policy 6). As a result of the fact that the majority of development would occur on vacant land where no established community exists, and with implementation of the policies to preserve the character, identity and quality of redeveloped neighborhoods, the proposed General Plan and Sustainability Action Plan would not physically divide an established community and no associated impact would occur.

**2. Consistency with Related Plans**

Implementation of the proposed General Plan and Sustainability Action Plan could theoretically impact related land use plans that have been adopted for the purpose of avoiding or mitigating an environmental effect. This section evaluates the potential impacts.

a. Zoning Ordinance

Per State law, the General Plan is the primary planning document for a community. The proposed General Plan would replace the City's 1993 General Plan once adopted. Therefore, upon approval and implementation of the proposed General Plan, other City documents may need to be updated to ensure consistency. The General Plan includes Objective LU-1.1, Action 1, which requires the City to amend the Zoning Ordinance and map for overall consistency with the General Plan. Implementation of this action would avoid a significant impact related to consistency with the Zoning Ordinance.

b. Growth Management Ordinance

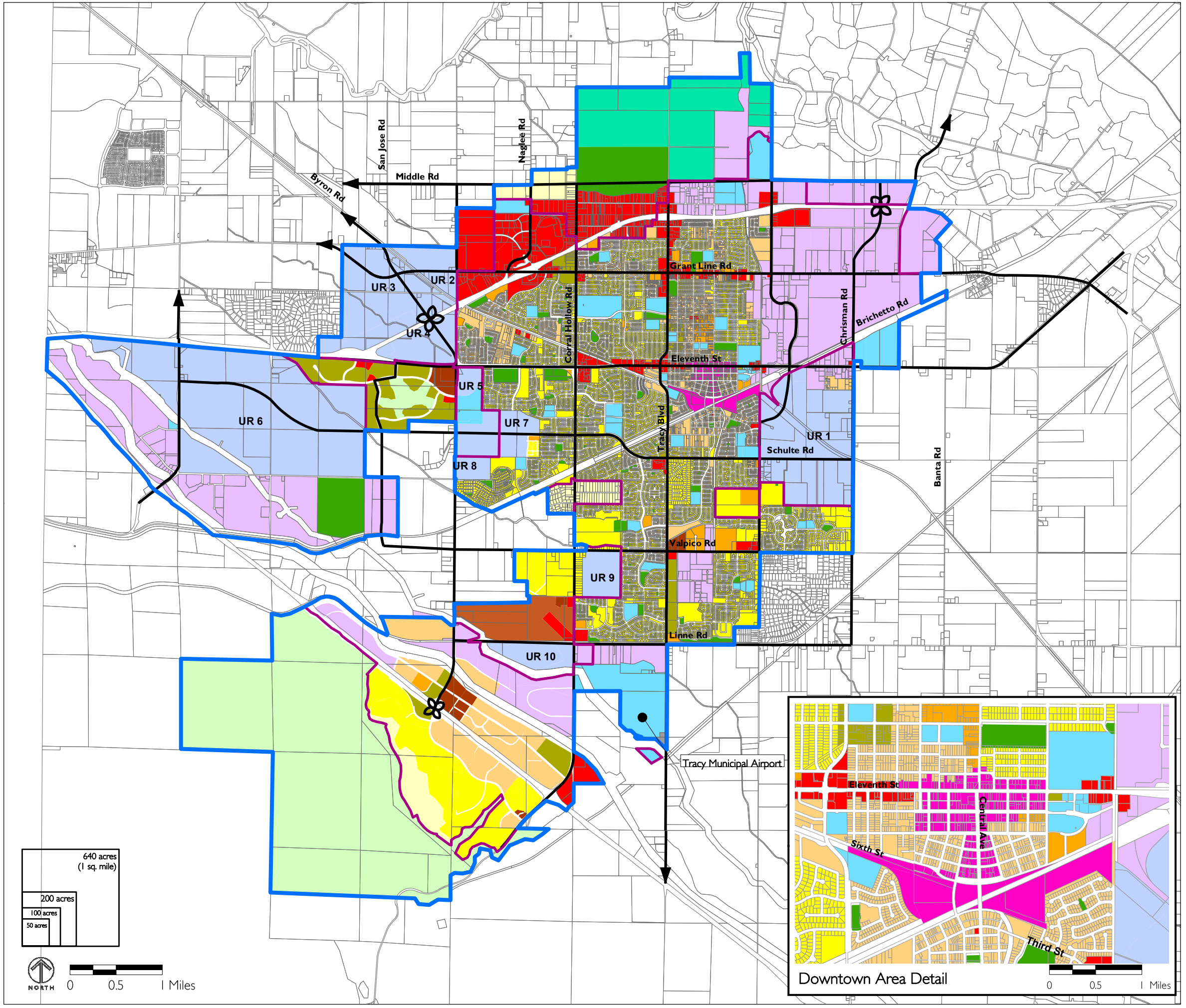
Residential growth controls in the GMO are consistent with the proposed General Plan's Objective LU-1.4, which states that the City shall promote efficient residential development patterns that maximize efficient use of existing public services and infrastructure. Supporting this Objective are seven policies, two of which state the City will follow the GMO requirements and prioritize the allocation of RGAs and building permits to meet General Plan goals such as, "but not limited to, growth concentrated around existing urban development and services, infill development, affordable housing, senior housing, and development with a mix of residential densities and housing types." The proposed General Plan also includes one action that requires the City to develop additional criteria to guide issuance of RGAs. Implementation of the objective and supporting policies would ensure that the General Plan and GMO are consistent with each other, thereby avoiding a significant impact related to consistency with the GMO.

c. Specific Plans and Large Planned Unit Developments

The proposed General Plan includes Objective LU-1.1, Action 4, which requires existing Specific Plans and PUDs to be amended as necessary to be in conformance with the General Plan prior to development of these areas. Implementation of this action would ensure that the Specific Plans and PUDs would be consistent with the proposed General Plan, as required by law.

**FIGURE 4.1-5**

# PROPOSED GENERAL PLAN LAND USE DESIGNATIONS




- City Limits
- Proposed Sphere of Influence
- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Traditional Residential - Ellis
- Commercial
- Office
- Industrial
- Downtown
- Village Center
- Public Facilities
- Park
- Open Space
- Agriculture
- Aggregate
- UR — Urban Reserve
- **Major Arterial/Expressway/Boulevard**

Thus, implementation of the proposed General Plan and Sustainability Action Plan would not result in any significant impacts since it would not result in any conflicts with existing Specific Plans or PUDs.

d. Sphere of Influence and San Joaquin County General Plan

Initially, the proposed General Plan would not be consistent with the San Joaquin County General Plan, because the City of Tracy's proposed General Plan would designate land for urban uses in areas currently designated by the County for agriculture uses. Until these areas are annexed by the City, San Joaquin County has jurisdiction in these areas. Once annexation occurs, the land will be within the City's jurisdiction and the City's land use designations will apply. Therefore, when annexation occurs, the land use designation would not conflict with the County's designation.

Some of the areas within the proposed General Plan and SOI consist of expansions of the City's 1993 SOI. For these areas, prior to initiating the annexation process, the City is requesting that the San Joaquin County LAFCO update the City's SOI to include expansions ranging from 53 to 404 acres to the north, an expansion of 1,534 acres to the west and an expansion of 42 acres to the south; as well as contractions to the SOI that total approximately 7,009 acres. The majority of the proposed expansions to the SOI would ultimately result in changes to the existing San Joaquin County General Plan Land Use designations from General Agriculture to a range of residential and non-residential uses, as properties are annexed to the City. Although this could create an initial conflict with policies stated in the County General Plan, Objective LU-1.1, Action 2 of the proposed General Plan directs the City to initiate the process with the San Joaquin County LAFCO and with community members in affected areas to adjust the SOI.

If LAFCO does not approve the SOI in the proposed General Plan, the existing SOI will remain in effect. In this case, the City's land use designations outside the LAFCO-approved SOI would have to be removed and the County designations would remain in place. Therefore, either way, adoption and implementation of the proposed General Plan and Sustainability Action

Plan would not result in a conflict with the County General Plan policies, resulting in a less-than-significant impact.

e. San Joaquin County LAFCO

Implementation of the proposed General Plan would include the proposed SOI, the adoption of which would be subject to LAFCO approval. As discussed above in Section A, Existing Setting, LAFCO follows several policies and guidelines when considering an SOI.

As discussed above, LAFCO determinations for approval of an SOI require that sphere horizons depict a city's logical boundaries of between five and ten years, and up to 30 years. Buildout under the proposed General Plan and Sustainability Action Plan would occur in 10- and 30-year SOI horizons. Figure 1-2 shows the SOI horizons proposed by the City of Tracy. The 10-year horizon contains areas that will fully and partially develop within a 10-year time frame, as multiple projects will begin and phase through completion over time. The two principle policy documents that the City will use to phase development in the 10-year horizon are the General Plan and the GMO and its Implementing Guidelines. The City's 10-year horizon includes areas both within the city limits and areas outside the city limits. Many residential properties that fall within the 10-year horizon will begin development within 10 years, continuing into the 30-year horizon. The 30-year horizon contains three areas outside of the city limits: a 95-acre property, known as the Rocha Property; and two areas to the northeast of the city limits. The Rocha property has General Plan land use designations of Residential Low and Residential High. The other two areas have an Industrial land use designation. These areas remain within the 30-year SOI horizon because they are adjacent to city limits and could develop over time.

LAFCO guidelines require that SOIs be consistent with General Plan land use elements, and with a Municipal Services Review (MSR). Adoption of the proposed SOI would be subject to LAFCO review of an MSR that would be prepared by the City to assess the adequacy of public services in the proposed SOI. To manage the SOI, and specifically the 10-year horizon, the City has

created a policy structure (both in the General Plan and in the GMO), including maps that identify two key geographies: Primary Residential Growth Areas and Secondary Residential Growth Areas. Per the GMO Guidelines, properties that fall within the Primary Residential Growth Areas have first priority for receiving Residential Growth Allotments (RGAs) and building permits. Within the GMO Guidelines, qualitative criteria against which each application is evaluated prioritize the Primary Residential Growth Areas; the qualitative criteria address housing type, project size, proximity to existing development, and project design. These criteria would allow staff to evaluate each of the projects in a competitive allocation cycle to determine which applicants best meet the goals of the proposed General Plan. The Secondary Residential Growth Areas are within the 10-year SOI horizon, and several are inside of the current city limits (e.g. Tracy Hills). The criteria for the issuance of RGAs and building permits in the Secondary Residential Growth Areas are also contained within both the General Plan policies and the GMO and GMO Guidelines. After accommodating Primary Residential Growth Areas applications for RGAs and building permits, there will be an equal distribution of RGAs to each applicant in the Secondary Residential Growth Areas, based on the number of lots that have received tentative map approvals within each project.

LAFCO guidelines state that territory not in need of urban services, including open space, agriculture, recreational lands, rural lands, and residential rural areas, shall not be included in an SOI unless exclusion would impede planned, orderly development. Lands within the SOI are for the most part designated by the proposed General Plan as land uses that would require public services, with the exception of some areas designated as Agriculture, Open Space, and Park. These areas are located to the north and southwest of city limits. These areas are included within the proposed SOI in order to facilitate logical development patterns within the planning area, by facilitating the completion of major roadways such as Lammers Road, Corral Hollow Road, and Tracy Boulevard. The inclusion in the SOI of properties to the north of the city will allow for the construction of a major community-serving recreational facility (i.e. Holly Sugar Sports Park), and allow for improvements

along Larch Road, better connecting the portions of the city that lie north of Interstate 205. Future growth in Tracy's proposed SOI would be regulated by the City's GMO, which would ensure that development occurs incrementally over time in an orderly manner.

LAFCO guidelines state that SOIs should maintain a separation between existing communities to protect open space and agricultural lands. The proposed SOI extends beyond the city limits but provides adequate buffers between the proposed SOI and other cities in the region. By excluding these areas from the proposed SOI, these open space and agricultural areas outside of the urbanized Tracy area will be protected from development as the city grows.

Finally, LAFCO guidelines require that the SOI for a city include the agency's policies and approaches to meet its fair share of regional housing needs. The proposed General Plan does not include an update to the City's Housing Element, which is being prepared under a separate cover. Therefore, the City's ability to meet its fair share of regional housing needs in the proposed SOI will be analyzed under the separate environmental review process for the Housing Element update.

Future development in the proposed SOI would be subject to the City's proposed General Plan and Sustainability Action Plan, as well as the City's GMO, to ensure sustainable and orderly development phased over 10- and 30-year horizons. Therefore, the proposed SOI is considered to be consistent with LAFCO policy, resulting in a less-than-significant impact.

f. San Joaquin County Airport Land Use Plan

The proposed General Plan includes Objective LU-6.3, Policy 1 and Policy 2, which state that land uses and new development within the airport hazard zones, as designated in the San Joaquin County Airport Land Use Plan, will conform to safety and development restrictions specified in the Plan. This policy will ensure that growth allowed under the proposed General Plan is consistent with the Airport Land Use Plan; therefore, no significant impact

would occur related to consistency with the San Joaquin County Airport Land Use Plan.

**3. Consistency with Habitat and Resource Conservation Plans**

The proposed General Plan includes policy direction that addresses the SJMSCP. Objective OSC-1.1 Policy 2 states that the City should continue to work with San Joaquin Council of Governments and other agencies to implement and enforce the SJMSCP. As discussed above, the Tracy Planning Area is identified as a Secondary Zone of the Delta so it is outside of the Delta Protection Commission's planning area, as defined in the *Land Use and Resource Management Plan for the Primary Zone of the Delta* (Delta Plan). Regarding guidance in the Delta Plan to provide adequate buffer areas in the Secondary Area to the extent possible to avoid impacts to the Primary Zone, there are numerous policies in the Land Use and Open Space and Conservation Elements that address preserving agriculture and open space in areas outside of Tracy's SOI and within its Planning Area (Objective LU-8.1, Policy 3 and Policy 4; Objective OSC-2.1, Policy 4 and Policy 5; Objective OSC-4.4, Policy 1, Policy 3 and Action 1).

Thus, implementation of the proposed General Plan and Sustainability Action Plan would not conflict with any adopted conservation plan and no significant impact would occur.

**4. Land Use Compatibility**

Recognizing the importance of reducing conflicts between land uses, the proposed General Plan includes many policies to minimize conflict and encourage an orderly land use pattern. The proposed General Plan includes two objectives with supporting policies and actions which state that the city should have a clearly defined urban form structure, as well as require that the City comprehensively plan for new development within the SOI (Objectives LU 1.1 and 1.2).

In addition, the following are examples of several of the policies and actions that are included in the proposed General Plan to minimize conflict between land uses:

- Objective LU-6.1, Policy 1. New industrial or mining uses shall be designed to not adversely impact adjacent uses, particularly residential neighborhoods, with respect to, but not limited to, noise, dust and vibration, water quality, air quality, agricultural resources and biological resources.
- Objective LU-6.1, Policy 2. All proposed development shall comply with existing applicable County and State waste management plans and standards.
- Objective LU-6.1, Policy 3. Use of berms, landscaped buffer zones, soundwalls, and other similar measures between quarrying operations and noise-sensitive adjacent uses is encouraged to ensure consistency with standards established in City's Noise Element of the General Plan.
- Objective LU-6.2, Policy 1. Uses that are compatible with the noise, air quality and traffic impacts associated with freeways, such as auto-oriented commercial and industrial uses, should be located near and along freeway corridors whenever possible.
- Objective LU-6.2, Policy 2. Adequate environmental protection and mitigation shall be provided for uses that are less compatible with development near and along freeway corridors.

Additional policy guidance to ensure land use compatibility is provided for areas identified as Special Areas of Consideration, which are shown in Figure 4.1-6, and for each of the ten Urban Reserves.

Other sections of the 2006 General Plan Draft EIR identified additional policies that help reduce land use conflicts, such as between agricultural activities and adjacent urban uses (Agricultural section); between schools and hazardous waste generators (Hazardous Materials and Hazards section); and between mining activities and adjacent uses (Mineral Resources section). Another

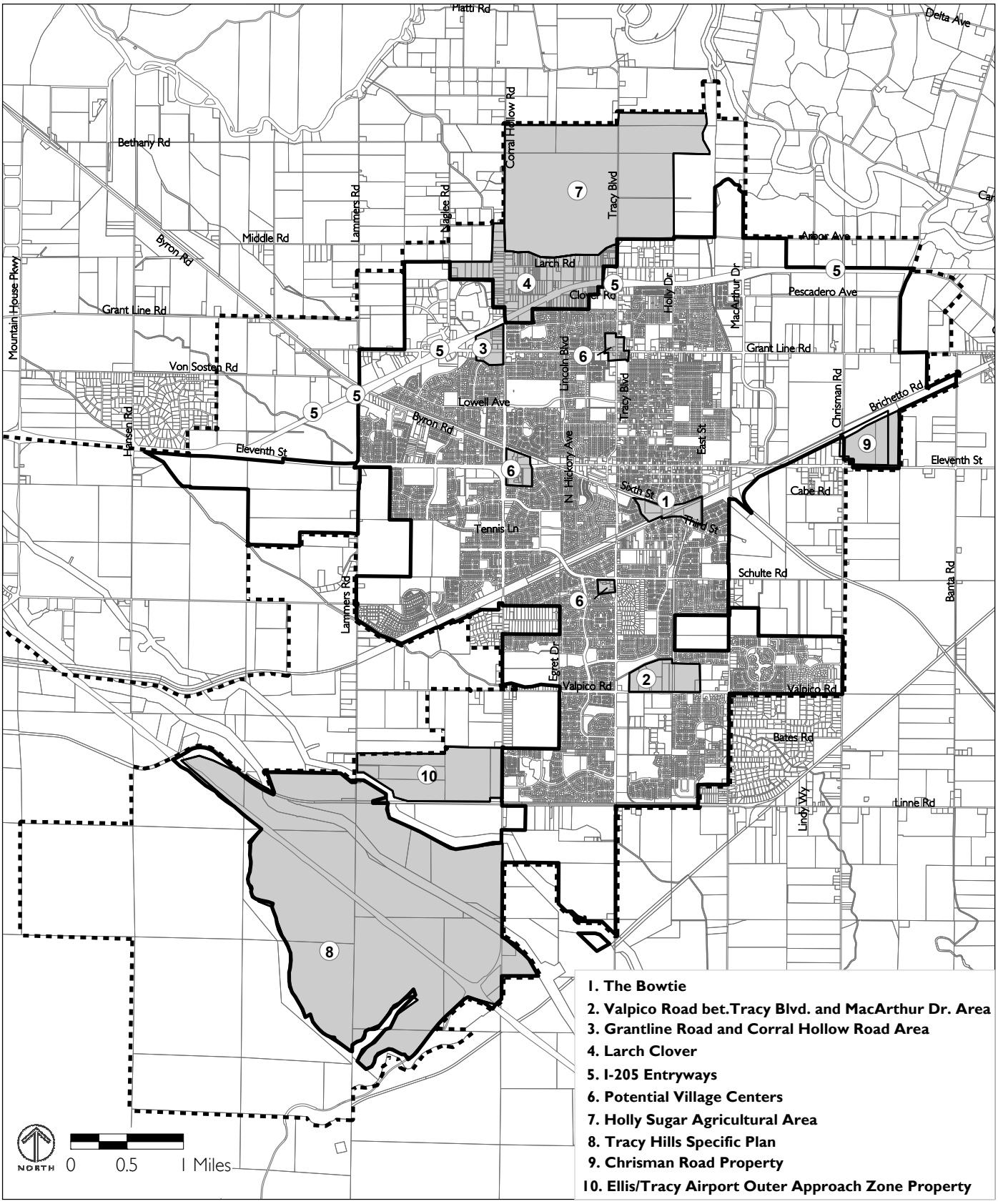



**FIGURE 4.1-6**

City Limits

Sphere of Influence

Areas of Special Consideration

## AREAS OF SPECIAL CONSIDERATION

aspect of land use compatibility relates to the type, location and character of various land use development, which is addressed the Community Character Element of the proposed General Plan and discussed in the Visual Resources section of the 2006 General Plan Draft EIR. Policies to address land use compatibility with the airport operations are discussed above.

In summary, implementation of policies and actions in the proposed General Plan and Sustainability Action Plan and the LAFCO process would result in less-than-significant land use impacts related to conflicts with other plans, policies and regulations applicable in the Tracy area.

### *D. Impacts and Mitigation Measures*

Since no significant impacts are identified, no mitigation measures are required.

## 4.2 POPULATION, EMPLOYMENT AND HOUSING

This section presents information on existing and projected population, employment and housing within the City of Tracy, and describes the effects of the proposed General Plan and Sustainability Action Plan on these factors. Current demographic data is provided at the local, county, and State levels.

### *A. Existing Setting*

This section provides a general description of the current population, employment and housing situation in Tracy. It also includes a discussion of housing affordability, existing and projected housing needs and the jobs-to-housing balance.

#### 1. Population and Demographics

Tracy is one of the most rapidly growing cities in California's Central Valley. Table 4.2-1 depicts population and household trends from 1990, 2000 and 2008.

Between 1990 and 2008, the population increased by 143 percent from 33,558 to 81,548[1] residents. Between 2000 and 2004, Tracy recorded the highest rate of population growth in San Joaquin County.[2] This growth has brought proportionally more families to Tracy, and increased percentages of home ownership and household size. The San Joaquin Council of Governments (SJCOG) has projected that Tracy will reach a total population of 189,393 residents by 2030,[3] which represents a 233 percent increase from the 2000

[1] California Department of Finance estimate for January, 2008. U.S. Census, 1990.

[2] U.S. Census, 2000.

[3] Population, Employment & Housing Unit Projections, San Joaquin Council of Governments, http://www.sjcog.org/docs/pdf/RFC%20Projections.pdf, accessed on September 11, 2008.

TABLE 4.2-1 **POPULATION TRENDS IN TRACY**

| | 1990 | 2000 | 2008 | % Change 1990-2008 |
|---|---|---|---|---|
| Population | 33,558 | 56,929 | 81,548 | 143% |
| Average Household Size | 2.98 | 3.21 | 3.27 | 10% |

Source: California Department of Finance, 1990, 2000 and 2008 Estimates.

population of 56,929 people. For comparison, the State is expected to grow by 37 percent during the same time period.[4]

a. Families

As is shown in Table 4.2-2, the amount of Tracy residents in family households has grown more quickly than in those in non-family households since 1990. From 1990 to 2006, the share of the Tracy population that is in family households increased slightly, from 90 percent of the population to 92 percent.

b. Race and Ethnicity

Tracy's surge in population growth has resulted in a more ethnically and racially diverse community. As shown in Table 4.2-3, from 1990 to 2006 the population distribution shifted, with the percentage of Caucasians dropping from 68 to 53 percent and the percentage of African Americans, Asian or Pacific Islanders and Hispanics each increasing by 7 to 9 percent.[5] In general, this change paralleled trends in both the county and the State.

[4] U.S. Census, Interim Projections 2000-2030 based on Census 2000, Table 1: Ranking of Census 2000 and Projected 2030 State Population and Change. http://www.census.gov/population/www/projections/projectionsagesex.html, accessed September 11, 2008.

[5] U.S. Census, 1990 Decennial Census (STF 3) Table P008 and P010. U.S. Census, 2006 American Community Survey Fact Sheet for Tracy, California.

TABLE 4.2-2 **FAMILY TRENDS IN TRACY**

| | 1990 | 2000 | 2006 | % Change 1990-2006 |
|---|---|---|---|---|
| Population in Family Households | 30,153 (90% of total) | 52,161 (92% of total) | 81,151 (92% of total) | 169% |
| Population in Non-Family Households | 3,230 (10% of total) | 4,335 (8% of total) | 7,269 (8% of total) | 125% |

Source: U.S. Decennial Census, 1990 and 2000; American Community Survey, 2006.

TABLE 4.2-3 **RACE AND ETHNICITY IN TRACY, SAN JOAQUIN COUNTY AND CALIFORNIA**

| | 2006 | | | % Change in Distribution 1990-2006 | | |
|---|---|---|---|---|---|---|
| Race/Ethnicity | Tracy | County | CA | Tracy | County | CA |
| White | 53% | 62% | 60% | -33% | -12% | -9% |
| African-American | 10% | 7% | 6% | 8% | 1% | -1% |
| American Indian or Alaska Native | 2% | 1% | 1% | 1% | 0% | 0% |
| Asian or Pacific Islander | 14% | 15% | 12% | 9% | 3% | 2% |
| Other | 14% | 11% | 17% | 8% | 4% | 4% |
| Two or More Races | 7% | 4% | 3% | * | * | * |
| Hispanic (of any race) | 31% | 36% | 36% | 7% | 13% | 11% |

* 1990 data not available.
Source: U.S. Census, 1990 and 2006.

c. Age Distribution

Between 1990 and 2006, the percentage of change in age distributions was similar between Tracy and California, as seen in Table 4.2-4. Two exceptions to this similarity are the age 19 to 24 category, in which Tracy decreased in percent of the total by 5 percent while the State only decreased by 1 percent, and the age 25 to 44 category, in which Tracy decreased by only 2 percent while the State decreased by 5 percent. The distribution of age in Tracy aligns with the increase in percentage of family households. Although the number of 25- to 44-year-olds increased by 149 percent, the category dropped slightly in its share of the total city population. This age category still represents a solid third of the population in both Tracy and within the State.

**2. Employment**

Growth in Tracy has included an increase in employment opportunities. As is common in cities of a similar size to Tracy, major local employers include the Tracy Unified School District and City government. During the 1990s, the economy diversified and expanded, aided in part by numerous companies that established distribution facilities in Tracy to take advantage of inexpensive land and proximity to three major freeways, such as a Safeway Grocery distribution warehouse that employs approximately 1,800 people.[6] In 2004, Tracy's 4.8 percent unemployment rate was one of the lowest rates in San Joaquin County.[7]

As shown in Table 4.2-5, the percentage of Tracy residents employed in professional or managerial jobs increased by a substantial 170 percent between 1990 and 2000, while the number of people employed in farming and forestry dropped by 44 percent.[8] Table 4.2-6 compares Tracy's occupational distribution to the County and the State and shows Tracy maintaining a higher percentage of professional or managerial jobs than the County, but less than the

[6]City of Tracy Economic Development Department, http://www.ci.tracy.ca.us/departments/economic_development/major_employers/; accessed 9/13/05.

[7] California Department of Finance, 2004.

[8] U.S. Census, 1990 and 2000.

TABLE 4.2-4 **AGE DISTRIBUTION IN TRACY AS COMPARED TO CALIFORNIA**

| | 1990 | | | 2006 | | |
|---|---|---|---|---|---|---|
| | Tracy | | CA | Tracy | | CA |
| Age Group | # | % | % | # | % | % |
| < 5 years | 3,458 | 10% | 8% | 7,493 | 8% | 7% |
| 5-19 | 7,712 | 23% | 21% | 22,948 | 26% | 22% |
| 20-24 | 2,239 | 7% | 8% | 4,291 | 5% | 7% |
| 25-44 | 12,717 | 38% | 35% | 31,667 | 36% | 30% |
| 45-64 | 4,697 | 14% | 17% | 17,114 | 19% | 23% |
| 65+ | 2,735 | 8% | 10% | 4,907 | 6% | 11% |

Source: U.S. Census, 1990 and 2006.

State. For the most part however, employment distributions in Tracy, the County and the State are fairly similar.

Since 2000, the labor force in Tracy has grown 44 percent to 39,050 people in 2006.[9] The number of jobs located in Tracy increased 89 percent between 1990 and 2000 to 20,972 jobs, as compared to San Joaquin County as a whole that recorded a 15 percent increase in number of jobs.[10] Employment in Tracy continues to grow, and in 2003 there were 29,758 jobs in the city.[11]

As is discussed in Chapter 3 of this document, the City expects substantial job growth between 2008 and 2025, the planning horizon of the proposed

[9] California Employment Department 2006. U.S. Census, 2000.

[10] U.S. Census, 1990 and 2000.

[11] U.S. Census, 1990 and 2000. Claritas 2003.

TABLE 4.2-5 **OCCUPATIONS OF TRACY RESIDENTS**

| Occupation (Job Location Unknown) | 1990 | | 2000 | | % Change 1990-2000 |
|---|---|---|---|---|---|
| Managerial/Professional | 2,896 | 18% | 7,825 | 31% | 170% |
| Sales, Technical, Administrative | 5,300 | 33% | 7,579 | 30% | 43% |
| Service Occupations | 2,084 | 13% | 3,085 | 12% | 48% |
| Production, Craft & Repair | 2,554 | 16% | 4,012 | 16% | 57% |
| Operators/Fabricators/Laborers | 2,644 | 17% | 2,782 | 11% | 5% |
| Farming, Forestry and Fishery | 373 | 2% | 209 | 1% | -44% |
| Total Employed Residents | 15,851 | -- | 25,492 | -- | 61% |

Source: U.S. Census, 1990 and 2000.

General Plan. The number of new jobs is estimated at 21,300 with 9,400 new industrial jobs, 6,800 new retail jobs and 5,100 new office jobs.

### 3. Jobs/Housing Balance

Despite the recent employment growth in Tracy, the jobs-housing balance falls short of the recommended target goal of 1.5 jobs per housing unit established by the California Department of Housing and Community Development (HUD). Based on the 2003 number of housing units (21,628)[12] and the number of local jobs (29,758),[13] the 2003 jobs-housing balance in Tracy was 1.37.

[12] California Department of Finance estimate for January, 2004.

[13] *State of the City*, Presentation by Andrew Malik, City of Tracy Economic Development Director, 2004.

TABLE 4.2-6 **OCCUPATIONAL COMPARISONS BETWEEN TRACY, SAN JOAQUIN COUNTY AND CALIFORNIA IN 2000**

| | Tracy | | County | CA |
|---|---|---|---|---|
| Occupation | # of People | % of Total | # of People | % of Total |
| Management and Professional | 7,825 | 31% | 27% | 36% |
| Service | 3,085 | 12% | 15% | 15% |
| Sales and Office | 7,579 | 30% | 27% | 27% |
| Farming, Fishing and Forestry | 209 | 1% | 4% | 1% |
| Construction, Extraction & Maintenance | 2,782 | 11% | 10% | 8% |
| Production, Transportation & Material Moving | 4,012 | 16% | 17% | 13% |

Source: 2000 U.S. Census.

Although the job-housing ratio is relatively close to balanced, commuting patterns in Tracy point toward a jobs-housing match that is less than ideal. It is estimated that over 70 percent of Tracy's employed residents commute outside of the city to work, as compared to only 17 percent of workers statewide, and the numbers of employees commuting into Tracy from neighboring counties has also increased.[14] According to the US Census, the percentage of Tracy residents commuting over 45 minutes to reach their workplace increased by 155 percent between 1990 and 2000. Table 4.2-7 outlines employment numbers by workplace location and average commuting times for Tracy residents.

Overall, this indicates a mismatch between the skill levels of Tracy residents and the skill levels of Tracy jobs. As a result, the area experiences adverse

[14] U.S. Census, 2000.

TABLE 4.2-7 **COMMUTING PATTERNS (1990 – 2000)**

| | 1990 | | 2000 | |
|---|---|---|---|---|
| | # of People | % of Total | # of People | % of Total |
| **Workplace Location of Tracy Residents** | | | | |
| In Tracy | 5,693 | 37% | 7,174 | 29% |
| Outside of Tracy | 9,802 | 63% | 17,800 | 71% |
| In San Joaquin County | 7,783 | 50% | 10,362 | 41% |
| Outside of San Joaquin County | 7,674 | 50% | 14,522 | 58% |
| **Average Commute Time of Tracy Residents to Work** | | | | |
| 0 to 14 minutes | 5,258 | 34% | 6,160 | 25% |
| 15 to 29 minutes | 2,754 | 18% | 3,284 | 13% |
| 30 to 44 minutes | 2,959 | 19% | 4,039 | 16% |
| Over 45 minutes | 4,181 | 27% | 10,682 | 43% |
| Worked At Home | 343 | 2% | 809 | 3% |

Source: U.S. Census, 1990 and 2000.

environmental and economic problems, such as high levels of traffic congestion and related air pollution.

### 4. Housing Units

The Department of Finance estimated that as of January 2008 there are 25,478 housing units in Tracy; 97 percent are occupied and 82 percent are single-family detached homes.[15] More information on housing occupancy and type is provided in Table 4.2-8. There was a surge in residential building starting in 1977, and housing growth has continued since then, with new housing

[15] California Department of Finance estimate for January, 2008.

TABLE 4.2-8 **HOUSING TRENDS IN TRACY**

| | 1990 | 2000 | 2008 | % Change 1990-2008 |
|---|---|---|---|---|
| Housing Units | 12,174 | 18,087 | 25,478 | 109% |
| Occupied Housing Units | 11,208 (92% of total) | 17,620 (97% of total) | 24,820 (97% of total) | 121% |
| Vacant Housing Units | 966 (8% of total) | 467 units (3% of total) | 658 (3% of total) | -32% |
| Single-Family Housing Units | 9,198 (76% of total) | 15,076 (83% of total) | 21,961 (86% of total) | 139% |
| Multi-Family Housing Units | 2,531 (21% of total) | 2,536 (14% of total) | 3,041 (12% of total) | 20% |
| Mobile Homes | 445 (4% of total) | 475 (3% of total | 476 (2% of total) | 7% |

Source: California Department of Finances, 1990, 2000 and 2008 estimates.

between 1990 and January 2008 adding 13,304 additional units, for an increase of 109 percent. As shown in Table 4.2-9, housing ownership has also increased, from 60 to 75 percent between 1990 and 2006. This trend has been paralleled by an increase in housing size. In 2006, 96 percent of housing units contained four or more rooms.

### 5. Growth Management Ordinance

As described in detail in Section 4.1, the City of Tracy adopted a residential Growth Management Ordinance (GMO) in 1987 that has been amended several times since, including an amendment in 2001 by the voter-initiated Measure A, which was passed by the voters in November 2000. Between the years 2008 and 2025, the number of residential units allowed under the City's GMO is 8,419 units.[16] The GMO includes exceptions to allow for additional

[16] The total building permits for 2008 through 2025 was calculated with the following methodology: (100 building permits x 4 years [2008 through 2011] + 219 building permits x 1 year [2012] + 600 building permits x 13 years [2013 through 2025] = 8,419.

TABLE 4.2-9 **TENURE TRENDS IN TRACY**

| | 1990 | 2000 | 2006 | % Change 1990-2006 |
|---|---|---|---|---|
| Owner-Occupied Housing Units | 6,729 (60% of total) | 12,727 (72% of total) | 19,039 (75% of total) | 183% |
| Renter-Occupied Housing Units | 4,479 (40% of total) | 4,854 (28% of total) | 6,242 (25% of total) | 39% |

Source: U.S. Decennial Census, 1990 and 2000; American Community Survey, 2006.

affordable housing. Under the existing General Plan Housing Element, 1,080 units have been targeted to be built during this same time period. Therefore, it is assumed that 1,080 affordable housing units over and above the 8,419 market rate units will be built between 2008 and 2025. This estimate is consistent with the goal stated in the Draft Housing Element of 60 affordable units per year. Thus, the amended General Plan includes the addition of 9,499 units of housing. These 9,499 housing units can be expected to result in an additional 31,000 people (using a multiplier of 3.27 persons per household),[17] or a total population of 112,600 people.[18]

### *B. Standards of Significance*

The proposed General Plan and Sustainability Action Plan would cause a significant impact related to population, employment and housing if they would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for exam-

[17] California Department of Finance, estimate for January, 2008, http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/, accessed on September 15, 2008.

[18] According to the 2008 Department of Finance estimate, the population of Tracy was approximately 814.548 in 2008.

ple, through extension of roads or other infrastructure).

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

## *C. Impact Discussion*

Implementation of the proposed General Plan and Sustainability Action Plan would result in an increase of dwelling units and population within the Planning Area. The General Plan provides a policy framework to control and direct growth as it occurs. This section provides an analysis of impacts of future population and housing growth that is anticipated to occur within the planning horizon of the proposed General Plan, as well as total future growth within the Sphere of Influence (SOI).

### 1. Future Population and Housing Growth

The development projections for the General Plan, through 2025, are based on land use designations, available acres and the City's existing building allotment regulations, insofar as they influence the timing and amount of residential development that may occur through 2025. Development projections for total buildout within the City limits and the entire SOI are based on land use designations and available acres.

The GMO helps reduce the potential adverse impacts to Tracy from future development by setting controls on development. The GMO allows a maximum addition of 9,499 units of housing between 2008 and 2025. These 9,499 housing units can be expected to result in an additional 31,000 people (using a multiplier of 3.27 persons per household).[19] However, the actual rate of de-

[19] California Department of Finance, estimate for January, 2008, http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/, accessed on September 15, 2008.

velopment that may occur pursuant to the proposed General Plan and Sustainability Action Plan would also depend on market conditions and other factors, such as availability of infrastructure or environmental constraints.

Implementation of the proposed General Plan and Sustainability Action Plan and the GMO is projected to result in a population of approximately 112,600 people in the year 2025. This number is based on an estimate of the number of residential units allowed per year multiplied by the number of years multiplied by the number of people per residential unit (units x years x people per unit), and adding that to the population of Tracy in 2008, which was approximately 81,548 people, according to the Department of Finance.

Despite the limitations of the GMO, the extent of growth anticipated to occur may result in a potentially significant impact associated with substantial growth. However, the proposed General Plan includes several policies to address this and reduce impacts to a less-than-significant level. For example, the General Plan states that new development in the SOI should be planned for in a comprehensive manner, and contain a balanced distribution of land uses between residential, employment-generating and public facilities (Objective LU-1.2, Policy 1 through Policy 3). The General Plan establishes that guidelines for residential growth shall be a component of the GMO as a separate objective, with supporting policies to direct RGA allotments to the goals of the Plan, including the provision of infill, senior, low-income and higher density housing (Objective LU-1.4, Policy 1 through Policy 7).

In addition, the projected amount of population and housing growth under the proposed General Plan through 2025 is much less than the San Joaquin County of Governments (SJCOG) projections. The San Joaquin Council of Governments (SJCOG) has projected that Tracy will grow to a total population of 153,677 residents in 2025,[20] which is greater than the projected 2025 General Plan buildout figure of 112,600 people. Therefore, the projected

[20] Population, Employment & Housing Unit Projections, San Joaquin Council of Governments, http://www.sjcog.org/docs/pdf/RFC%20Projections.pdf, accessed on September 11, 2008.

population growth associated with implementation of the proposed General Plan and Sustainability Action Plan would not result in the inducement of unexpected population growth. Thus, no significant impact would occur for development through 2025.

Total buildout of the proposed General Plan would increase the population of Tracy by approximately 43,000 to 70,000 people and 13,225 to 21,300 housing units for a total of approximately 124,500 to 151,500 people and 38,700 to 46,800 housing units.[21] The employee population is projected to increase by approximately 163,000 for a total of 193,000 employees at total buildout.[22] This represents a substantial increase compared to current population and employment levels in the city. The Community Character Element of the proposed General Plan includes goals, objectives, policies and actions intended to preserve and enhance quality of life and the unique character of Tracy as growth occurs. However, despite these policies, the overall amount of population and housing growth would result in a significant and unavoidable impact by inducing substantial population growth at total buildout.

**2. Housing and Population Displacement**

Implementation of the General Plan and Sustainability Action Plan would not displace housing or populations. The majority of growth proposed in the General Plan would occur on vacant and agricultural land, which has few existing housing units. In addition, growth is encouraged in existing neighborhoods and infill areas. However, the proposed General Plan includes policies that encourage the preservation and enhancement of the character of existing neighborhoods and specifically states that new development should not physically divide established neighborhoods (Objective CC-6.3, Policy 1 and Policy 4). Therefore, planned infill development is not expected to dis-

[21] Additional population projected from total buildout was added to the population and amount of housing units in the City of Tracy in 2008 which was 81,548 persons and 25,478 dwelling units, respectively.

[22] The additional number of employees projected at total buildout of the proposed General Plan was added to the number of employees in Tracy in 2003, which was 29,758.

place housing or population. Moreover, the Economic Development Element includes goals, objectives, policies and actions to ensure that Tracy has a competitive workforce and is able to respond quickly to changing economic conditions, as a way to improve the match between Tracy residents' workforce needs and the jobs available in Tracy (Goals ED-7 and ED-8). As a result of these policies, no significant impacts to the displacement of populations or housing would occur.

### *D. Impacts and Mitigation Measures*

While policies and other regulations would reduce impacts to future population and housing growth to the extent feasible for development projected through 2025, a significant and unavoidable impact would occur by inducing substantial population growth at total buildout of the General Plan, as amended.

**Impact POP-1:** Despite policies in the Community Character Element of the proposed General Plan to maintain and enhance quality of life as future growth occurs, development permitted under the proposed General Plan would result in approximately an additional 43,000 to 70,000 residents, 163,000 employees and 13,225 to 21,300 housing units for a total of 124,500 to 151,500 residents, 193,000 employees and 38,700 to 46,700 housing units at total buildout.

This is a *significant and unavoidable* impact. No additional mitigation is available.

## 4.4 TRAFFIC AND CIRCULATION

This section presents information on existing traffic and circulation conditions in the City of Tracy and describes potential environmental impacts the proposed General Plan and Sustainability Action Plan would have on the circulation system, as well as the standards of significance by which they are evaluated.

For the majority of the analyses contained in this EIR, the General Plan horizon year of 2025 was used. However, the transportation and air quality analyses, which rely on modeled traffic data, extend to the year 2030. This is because the San Joaquin Council of Governments (SJCOG) has recently updated the regional travel demand model to 2030. This traffic analysis is therefore consistent with the regional model. Furthermore, this approach is conservative by extending the analysis beyond the General Plan horizon year. As explained in Chapter 3, it is generally held that modeling traffic impacts beyond a 20-year time period is increasingly inaccurate and not considered to be reliable, so this analysis is limited to consistency with the SJCOG timeline.

In addition, as described in Chapter 1, the traffic and air analyses do not fully account for the VMT reductions that will occur as a result of the Sustainability Action Plan. Therefore, this chapter provides a conservative analysis of the VMT-related traffic impacts resulting from implementation of the General Plan and Sustainability Action Plan.

### *A. Existing Setting*

This section presents a brief description of the circulation system in Tracy.

#### 1. Regulatory Setting

The following provides an overview of some of the regional and local existing plans that address transportation concerns in the Tracy area.

a. 2007 Regional Transportation Plan

The SJCOG produced the 2007 Regional Transportation Plan (RTP). The RTP is a roadmap to guide the region's transportation development over a 20-

year period. The RTP is updated every three years to reflect changes, such as changes in funding availability and growth patterns. The RTP offers a multi-model strategy to improve congestion and provide a range of transportation choices. Since the RTP needs to take into consideration the availability of funding, projects are prioritized. Tier 1 projects are those anticipated to be financed and completed. Tier 2 projects create a list of projects that show the shortfall of transportation needs in the area, but for which funding is not identified.

b. San Joaquin County Congestion Management Program

SJCOG is the designated Congestion Management Agency for San Joaquin County. Proposition 111 was a voter approved addition to an existing state-wide gasoline tax. In order to receive funds from this tax, each county was required to designate a Congestion Management Agency and develop a Congestion Management Program (CMP). Subsequent legislation removed this requirement, allowing counties to discontinue the CMP by resolution of the majority of jurisdictions within the county. San Joaquin County has not elected to do so, and SJCOG remains the Congestion Management Agency for San Joaquin County. Federal planning regulations also require a congestion management process to receive some types of federal transportation funding. SJCOG also fulfills that requirement.

c. San Joaquin County General Plan

The San Joaquin County General Plan includes a range of objectives and policies that address the provision of adequate roadway, transit and bicycle systems. This policy direction applies to areas outside the incorporated Tracy City limits.

d. San Joaquin County Airport Land Use Compatibility Plan

The Tracy Municipal Airport is subject to the 1993 *San Joaquin County Airport Land Use Compatibility Plan*. This Plan identifies future improvements for the airport to meet future aviation needs. The Plan also identifies compatible land uses for the various safety zones around the airport necessary for maintaining safe airport operations.

e. Tracy Roadway Master Plan

In 1994, Tracy adopted a Roadway Master Plan and Conceptual Design Standards for the Master Plan. The Roadway Master Plan is the implementation tool to detail the specific improvements necessary to support the general circulation and land use plan identified in the General Plan.

f. Tracy Truck Route Ordinance

Tracy has a specific City ordinance relating to truck routes. This ordinance defines weight restrictions, specifies the ability of trucks to enter areas not designated as truck routes, and defines the truck routes within the city.

The weight restrictions that apply to trucks are specified in Section 3.08.300 of the Tracy Municipal Code. This section of the Code states that trucks larger than three tons must stay on designated truck routes. Passenger buses under the jurisdiction of the Public Utilities Commission are exempt from this restriction.

Section 3.08.300 also provides that trucks are allowed to temporarily deviate from the designated truck routes for purposes of local deliveries and pick-ups. Otherwise, trucks are supposed to remain on the designated routes specified in Section 3.08.310 of the Tracy Municipal Code.

g. Tracy Parking Requirements

The Tracy Municipal Code includes regulations for off-street parking (Section 10.08.3440 through 3590). These regulations identify minimum parking requirements for different land uses, as well as parking design, required landscaping and parking space size, which is established in the City of Tracy Standard Plan #154.

**2. Transportation Funding**

The following provides an overview of the funding mechanisms used to finance improvements to the transportation network throughout Tracy and its vicinity.

a. Finance and Implementation Plans

The City of Tracy plans infrastructure improvements (including roadways and intersections) through multiple specific financing plans, otherwise known as "Finance and Implementation Plans" (FIPs). The purpose of an FIP is to provide estimates of the funds required to mitigate each impact and to update the City's Capital Improvement Program Construction Schedule. A FIP also identifies an estimated obligation for roadway improvements. FIPs are periodically updated to keep pace with construction cost increases.

b. Measure K

Measure K is a countywide ½ cent sales tax program for the purpose of funding transportation improvements within San Joaquin County. The City participates in this program. The existing Measure K sales tax expires in the year 2011. SJCOG is working with the cities and local agencies in the county to achieve voter approval for Measure K renewal beyond the year 2011.

c. Regional Transportation Impact Fee (RTIF)

The City is a member agency of SJCOG, a joint powers agency consisting of the County of San Joaquin and the seven cities situated in San Joaquin County. Acting in concert, the member agencies of SJCOG developed the RTIF Program whereby the shortfall in funds needed to expand the capacity of the Regional Transportation Network could be made up in part by a Regional Transportation Impact Fee (RTIF Program Fee) on future residential and non-residential development. The RTIF Program Fee will augment other funding sources and help assure that needed improvements to the Regional Transportation Network are completed. The City adopted this fee on January 3, 2006.

d. San Joaquin County Traffic Fee Program

San Joaquin County has adopted a traffic mitigation fee program for the purpose of collecting fees to finance transportation facilities needed to accommodate new development within unincorporated San Joaquin County. The program includes a fee schedule for projects that occur in the unincorporated

areas around Tracy. This program only applies to unincorporated areas in the county.

e. Caltrans

The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by the voters as Proposition 1B on November 7, 2006, includes a program of funding from $4.5 billion to be deposited in the Corridor Mobility Improvement Account (CMIA). The funds in the CMIA are available to the California Transportation Commission (CTC) for allocation for performance improvements on the State highway system or major access routes to the State highway system. The CTC has approved $25 million towards construction of auxiliary lanes on Interstate-205 (I-205) through Tracy.

**3. Roadway System**

There are three major freeways serving the city: I-205, Interstate 580 (I-580) and Interstate 5 (I-5). Local roadways are classified in the 1993 General Plan as freeways, expressways, boulevards, rural highways, major and minor arterials, collectors and local streets and roads.

The primary roadway network includes the following roadways:

- **I-205** extends from I-580 to I-5 and extends east-west through the northern portion of the city. Interchanges are provided at West Eleventh Street, Grant Line Road, Tracy Boulevard, and MacArthur Drive. West of Eleventh Street, I-205 has six lanes. Construction is underway to widen the remaining I-205 sections east of Eleventh Street from four lanes to six lanes. The posted speed limit on I-205 is 70 miles per hour.
- **I-580** extends from the San Francisco Bay Area, through the Altamont Pass, and connects to I-5 south of Tracy. This facility has four lanes in the segments adjacent to the city with a posted speed limit of 70 miles per hour.
- **I-5** is a major roadway that extends north-south throughout the State of California. In San Joaquin County, I-5 connects Tracy with the cities of Stockton, Lathrop and Manteca. Those sections adjacent to the City of

Tracy have four travel lanes with a posted speed limit of 70 miles per hour.

- **Grant Line Road** is a parallel road to I-205 that extends through the northern areas of Tracy. The road width varies from two lanes to six lanes with a majority of the roadway having four travel lanes and a raised median. The six-lane section extends from I-205 to Corral Hollow Road. The road is predominantly four lanes between Corral Hollow Road and MacArthur Drive. Several sections have medians and bike lanes. In other segments, such as those found between Holly Drive and Lincoln Boulevard, the raised median is replaced with a striped two-way left-turn lane. In the Tracy Roadway Master Plan, Grant Line Road is designated a major arterial west of Chrisman Road and an expressway from Chrisman Road to I-205. Speed limits along Grant Line Road range from 30 to 55 miles per hour.

- **Eleventh Street**, which also parallels I-205, is one of the major east-west roadways in the city. The roadway width varies from four to six lanes with most segments containing a median and bicycle lanes. The posted speed limit varies from 30 miles per hour in the urban areas of the city to 55 miles per hour east of Chrisman Road. The Roadway Master Plan designates this roadway as a major arterial from Corral Hollow Road to MacArthur Drive, and the segments west of Corral Hollow and east of MacArthur Drive are classified as an expressway.

- **Schulte Road** is an east-west roadway south of Eleventh Street. This roadway varies between two lanes and four lanes with bicycle lanes and sidewalks on certain sections. The roadway is four lanes west of MacArthur Drive and two lanes east of MacArthur Drive. The section that extends from Central to Corral Hollow Road has on-street bicycle lanes. The posted speed limit varies between 35 miles per hour in the urbanized areas of Tracy to 55 miles per hour west of Lammers Road. The planned segment connecting Coral Hollow with Lammers Road has not yet been built. Schulte Road is classified as a major arterial in the Roadway Master Plan.

- **Valpico Road**, which lies to the south of Schulte Road, extends from Chrisman Road to Lammers Road. The majority of the roadway has four lanes with some two-lane segments at the eastern and western boundary of the city. When the road has four travel lanes, there is a median present. The posted speed limit varies from 35 to 45 miles per hour. The Roadway Master Plan classifies Valpico as a major arterial.
- **Linne Road** is the southernmost major road in the city and extends from Corral Hollow Road to east of I-5. The road has two lanes throughout the study with a speed limit that varies from 35 to 45 miles per hour. The posted speed limit for a majority of the roadway within the City limits is 45 miles per hour. Linne Road west of MacArthur Drive is classified as a future expressway in the Roadway Master Plan.
- **Lammers Road** is a major north-south roadway that serves as the western boundary of the existing developed area of the city. There are two travel lanes on the existing sections of Lammers Road. There is no median on these two-lane segments. There is an on-street bicycle lane on the eastern side of the roadway in the segment north of Eleventh Street. The posted speed limit within the city is 45 to 50 miles per hour. Lammers Road is classified as a future expressway in the adopted Roadway Master Plan.
- **Corral Hollow Road** serves as one of the major north-south roadways in the city. This roadway extends from the San Joaquin/Alameda County border south of I-580 to north of I-205. South of Grant Line Road, this roadway has four lanes with a posted speed limit varying between 35 and 40 miles per hour. In the segment from Schulte Road to Grant Line Road, there is a raised median on the roadway. North of Grant Line Road, the roadway has only two lanes with no median. There are no bike lanes on Corral Hollow Road. Corral Hollow Road is classified as a major arterial in the Roadway Master Plan.
- **Tracy Boulevard**, which runs north-south, is east of Corral Hollow Road and extends from I-580 in the southern portion of the City past I-205 to State Route 4 in the north. There are four travel lanes in the segments of the roadway within the City limits. Median treatments include

raised medians and two-way left turn lanes. The posted speed limit varies from 30 miles per hour (south of Grant Line Road) to 45 miles per hour (south of Valpico Road). Like Corral Hollow Road, Tracy Boulevard is also classified as a major arterial in the Roadway Master Plan.

- **MacArthur Drive** runs north-south 1 mile to the east of Tracy Boulevard. The southern section of the roadway has two lanes, but the segment between Eleventh Street and I-205 has four travel lanes. Several portions of the four-lane section have a raised median and in-street bicycle lanes. The posted speed limit on MacArthur Drive varies from 35 to 55 miles per hour. MacArthur Drive is classified as a major arterial in the adopted Roadway Master Plan.
- **Chrisman Road** is a two-lane road on the eastern side of the city. The posted speed limit varies from 35 to 45 miles per hour. Presently a rural road, Chrisman Road is classified as a future expressway in the adopted Roadway Master Plan.

**4. Freeway Interchanges**

There are seven freeway interchanges adjacent to the city and the proposed SOI. Five of these interchanges are found on I-205. The remaining interchanges are found on I-580 and I-5. The interchange locations are listed below:

- I-205/Mountain House Parkway
- I-205/Eleventh Street
- I-205/Naglee Road/Grant Line Road
- I-205/Tracy Boulevard
- I-205/MacArthur Drive
- I-580/Mountain House Parkway
- I-580/Corral Hollow Road

The I-205/Eleventh Street interchange is a high-speed uncontrolled interchange, while I-205/Naglee Road/Grant Line Road, I-205/Tracy Boulevard, and I-205/MacArthur Drive are signalized interchanges. The remaining three interchanges, I-205/Mountain House Parkway, I-580/Mountain House Park-

way and I-580/Corral Hollow Road, handle low volumes of traffic and are considered low capacity rural interchanges.

Currently, the I-205/MacArthur Drive and the I-580/Corral Hollow Road interchanges have planned improvements to handle traffic volumes due to projected growth in the Tracy area. A preliminary study[1] for the I-205/MacArthur interchange was conducted, and recommended the addition of a westbound loop on-ramp, a realigned westbound off-ramp, and diagonal westbound on-ramp. A new interchange configuration for I-580/Corral Hollow Road has not been identified at this time; however, it is anticipated that this interchange would require upgrading from its rural configuration to urban as the area builds out.[2]

There are also three new planned interchanges: I-205/Lammers Road, I-580/Lammers Road, and I-205/Chrisman Road. The I-205/Lammers Road interchange is currently undergoing a Caltrans project development process, including design studies to define lane configuration and alignment. The draft Caltrans Project Study Report calls for the interchange to be located about 1,500 feet to the west of the I-205/Byron Road underpass, and may result in the elimination of the existing I-205/West Eleventh Street interchange. The I-580/Lammers Road and I-205/Chrisman Road interchanges are not under detailed study at this time.

**5. Major Intersections**

There are 43 major intersections within the Tracy Planning Area. Major intersections are those that occur along the existing or future arterial roadways. The locations of these intersections are shown on Figure 4.4-1. Figures 4.4-2A and 4.4-2B provide the configuration of each intersection including the number of turn lanes, through lanes, and the traffic control for each approach.

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[1] *Report of Preliminary Finding, MacArthur Drive Interchange Improvements at Route 205 City of Tracy* (January 3, 2000, Mark Thomas & Co., Inc.).

[2] *Roadway Finance and Implementation Plan for Tracy Gateway, Tracy Hills, NEI* (April 2005, Fehr & Peers).

Of the 43 major intersections, 26 currently operate under signal control. Some of these traffic signals are operated by Caltrans while others are under the jurisdiction of the City of Tracy. The remaining 17 major intersections operate under stop sign control. A majority of these unsignalized intersections are found along Schulte Road, Valpico Road and Linne Road. These stop sign controlled intersections include side-street stop sign controlled (major street operates freely) or all-way stop sign controlled intersections (all approaches must stop for stop signs). A list of these intersections is provided in Table 4.4-1.

**6. Level of Service Criteria**

The concept of "Level of Service" (LOS) is used to characterize how well the roadway network operates. These evaluations are based on empirical data collected and reported in the 2000 Highway Capacity Manual, which is maintained by the Transportation Research Board. Level of service is a standard measure of the quality of traffic flow and uses letter grades from A (best) to F (worst), and is determined by assessing the magnitude of traffic flow on a roadway and the ability of that facility to handle the traffic flow. The following sections go into more detail about LOS for different types of roadways.

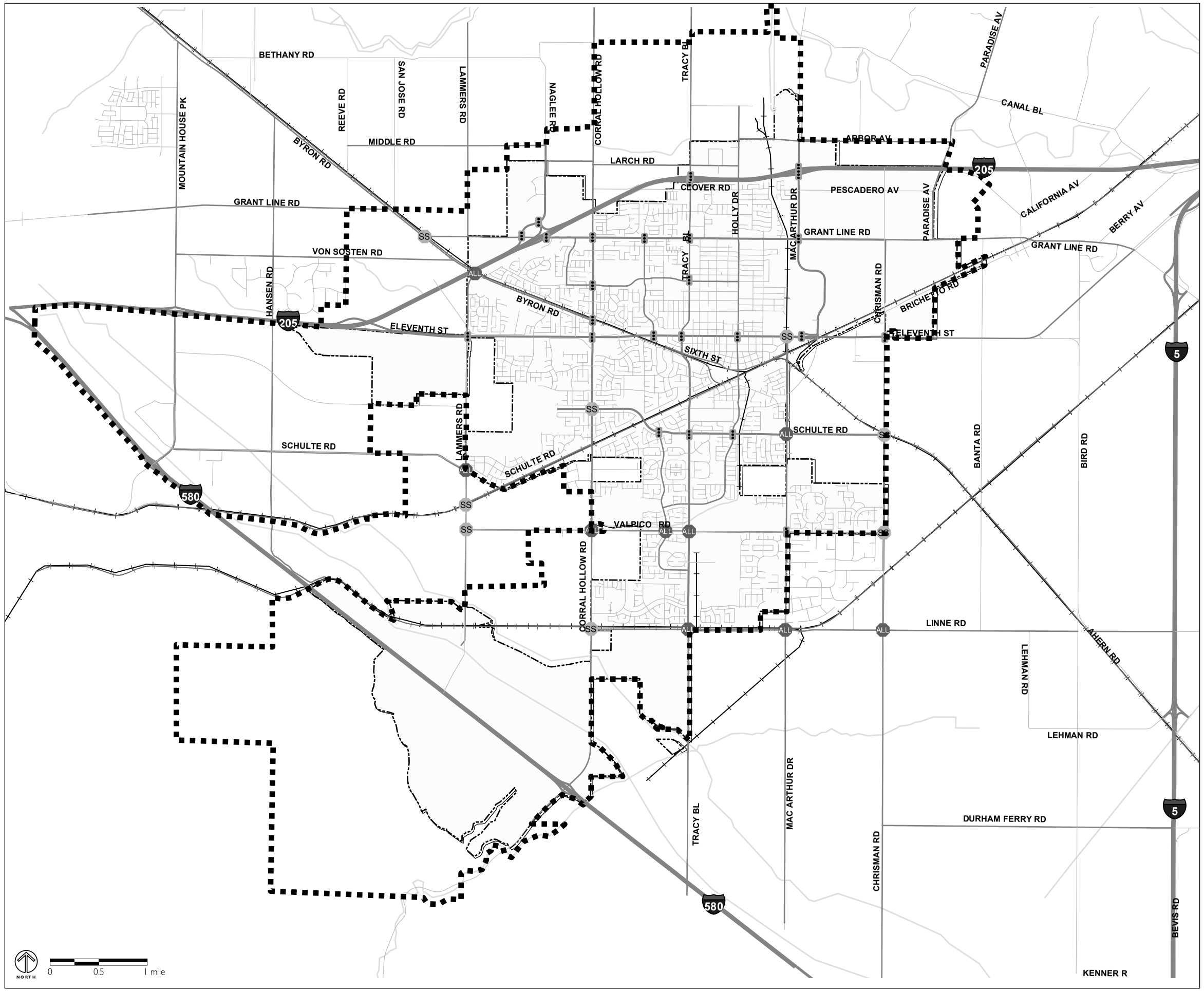
The City standards in the proposed General Plan call for an average peak-hour LOS D or better on all existing and future streets within the city limit, with two exceptions: LOS E is allowed on streets and intersections within one-quarter mile of any freeway, to prevent city streets from becoming attractive detours for inter-regional travel; and LOS E is allowed in the Downtown and Bowtie areas of Tracy.

*i. Freeways*

The freeway level of service analysis is based on a volume to capacity ratio (V/C ratio) analysis using an assumed value of 2,200 vehicles per lane. Level of service is assigned to each freeway segment based on the V/C ratios given Table 4.4-2.

FIGURE 4.4-1

# EXISTING MAJOR INTERSECTIONS AND TRAFFIC CONTROLS




SS Side Street Stop

ALL All Way Stop

Traffic Signal

City Limit

Proposed Sphere of Influence

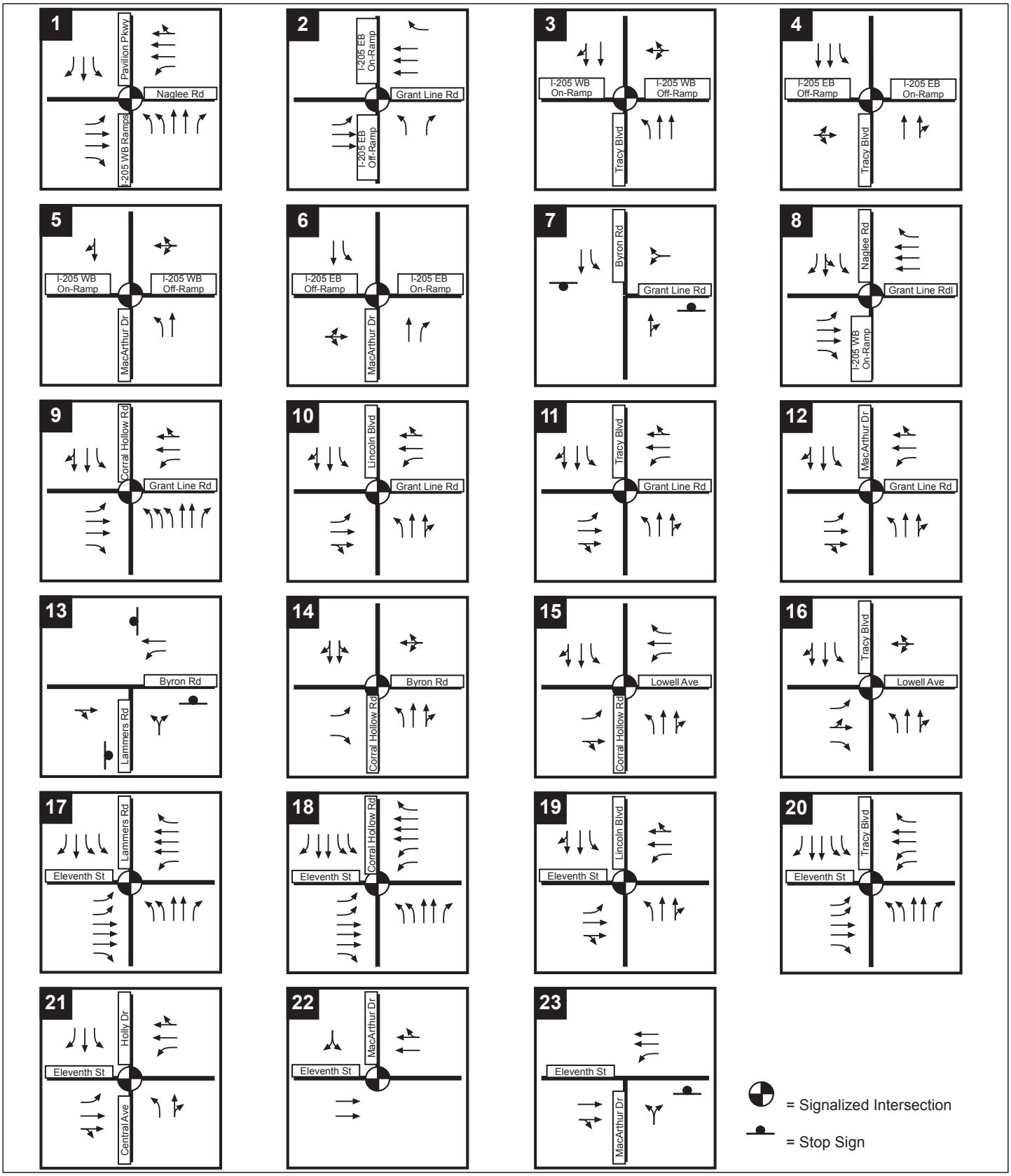



**FIGURE 4.4-2A**

**EXISTING LANE CONFIGURATION**

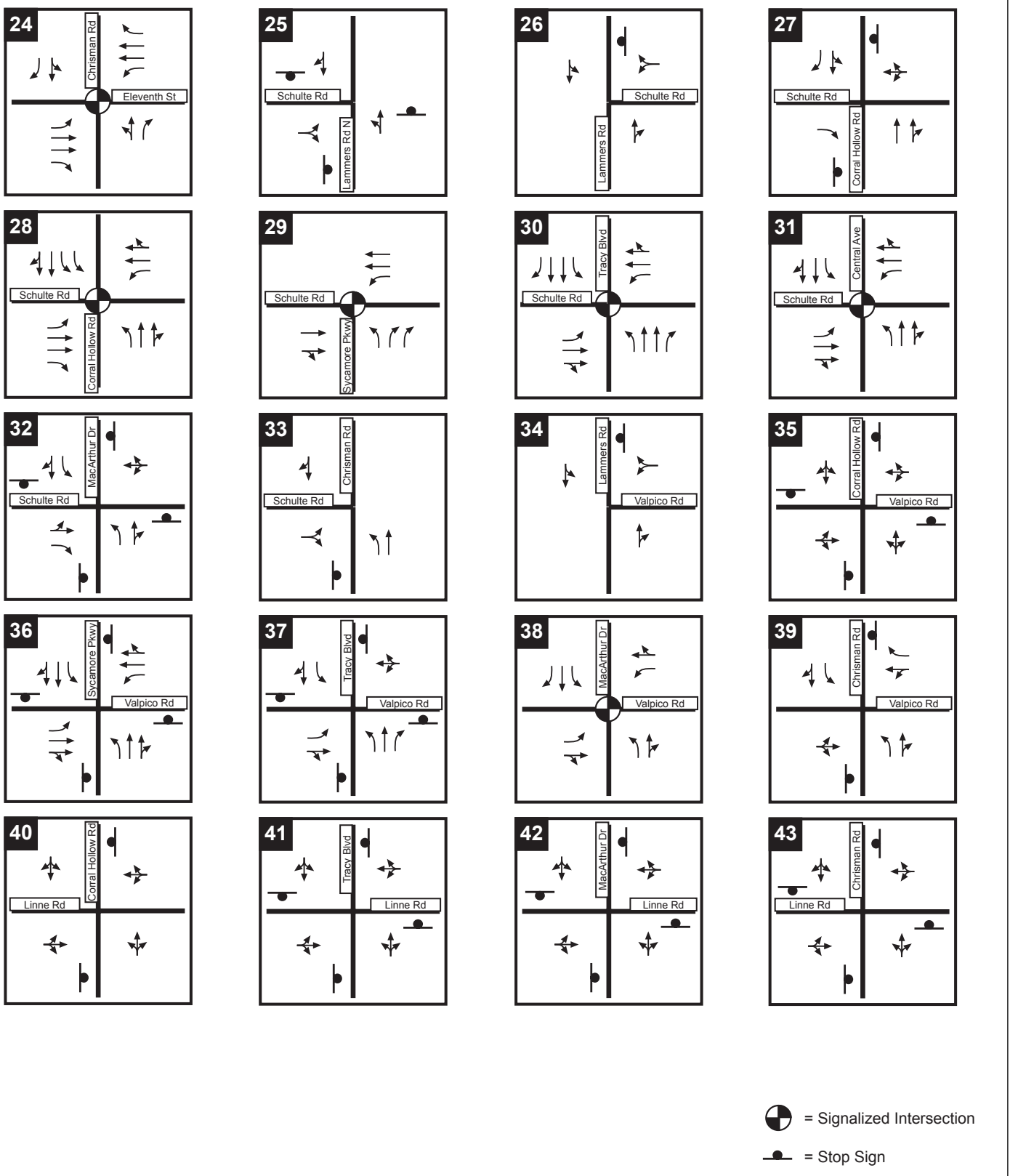



**FIGURE 4.4-2B**

**EXISTING LANE CONFIGURATION**

TABLE 4.4-1 **MAJOR INTERSECTIONS**

| Reference Number | Intersection | Control Type (as of 2003) |
|---|---|---|
| 1 | I-205 WB Ramps/Naglee Road | Signal |
| 2 | I-205 EB Ramps/Grant Line Road | Signal |
| 3 | I-205 WB Ramps/Tracy Boulevard | Signal |
| 4 | I-205 EB Ramps/Tracy Boulevard | Signal |
| 5 | I-205 WB Ramps/MacArthur Drive | Signal |
| 6 | I-205 EB Ramps/MacArthur Drive | Signal |
| 7 | Grant Line Road/Byron Road | SSS |
| 8 | Grant Line Road/Naglee Road | Signal |
| 9 | Grant Line Road/Corral Hollow Road | Signal |
| 10 | Grant Line Road/Lincoln Boulevard | Signal |
| 11 | Grant Line Road/Tracy Boulevard | Signal |
| 12 | Grant Line Road/MacArthur Drive | Signal |
| 13 | Byron Road/Lammers Road | AWS |
| 14 | Byron Road/Corral Hollow Road | Signal |
| 15 | Lowell Avenue/Corral Hollow Road | Signal |
| 16 | Lowell Avenue/Tracy Boulevard | Signal |
| 17 | Eleventh Street/Lammers Road | Signal |
| 18 | Eleventh Street/Corral Hollow Road | Signal |
| 19 | Eleventh Street/Lincoln Boulevard | Signal |
| 20 | Eleventh Street/Tracy Boulevard | Signal |
| 21 | Eleventh Street/Central Avenue | Signal |
| 22 | Eleventh Street/MacArthur Drive (N) | Signal |
| 23 | Eleventh Street/MacArthur Drive (S) | SSS |

TABLE 4.4-1 **MAJOR INTERSECTIONS** (CONTINUED)

| Reference Number | Intersection | Control Type (as of 2003) |
|---|---|---|
| 24 | Eleventh Street/Chrisman Road | Signal |
| 25 | Schulte Road/Lammers Road North | AWS |
| 26 | Schulte Road/Lammers Road South | SSS |
| 27 | Schulte Road/Corral Road South | SSS |
| 28 | Schulte Road/Corral Road North | Signal |
| 29 | Schulte Road/Sycamore Parkway | Signal |
| 30 | Schulte Road/Tracy Boulevard | Signal |
| 31 | Schulte Road/Central Avenue | Signal |
| 32 | Schulte Road/MacArthur Drive | AWS |
| 33 | Schulte Road/Chrisman Road | SSS |
| 34 | Valpico Road/Lammers Road | SSS |
| 35 | Valpico Road/Corral Hollow Road | AWS |
| 36 | Valpico Road/Sycamore Parkway | AWS |
| 37 | Valpico Road/Tracy Boulevard | AWS |
| 38 | Valpico Road/MacArthur Drive | Signal |
| 39 | Valpico Road/Chrisman Road | SSS |
| 40 | Linne Road/Corral Hollow Road | SSS |
| 41 | Linne Road/Tracy Boulevard | AWS |
| 42 | Linne Road/MacArthur Drive | AWS |
| 43 | Linne Road/Chrisman Road | AWS |

Note: AWS=all way stop; SSS=side street stop; EB=east bound; WB=west bound.
Source: Fehr & Peers, December 2003.

While the City does not set level of service standards for freeways, the San Joaquin County Congestion Management Program (CMP) has general standards for roadways such as freeways. The San Joaquin CMP considers LOS E or F to be unacceptable conditions, except on certain roadway links. Exceptions include I-205, where the San Joaquin County CMP has set LOS E (east of MacArthur Drive) and LOS F (west of MacArthur Drive) as acceptable levels of service.

*ii. Roadways*

Roadway impacts within Tracy were assessed using roadway segment capacities derived from the 2000 Highway Capacity Manual, as documented in the level of service standards published by the Florida Department of Transportation.[3] Table 4.4-3 provides an overview of level of service standards for two- and four-lane roads.

*iii. Intersections*

Like other roadway facilities, intersections are evaluated using a level of service system. For this EIR and for preparation of the General Plan, this evaluation is based on methodologies provided in the 2000 Highway Capacity Manual. The 2000 Highway Capacity Manual utilizes a methodology that assesses the average control delay at intersections. The level of service ranges for signalized intersections is provided in Table 4.4-4.

Unsignalized intersections are analyzed using a similar methodology, but delay is calculated only for movements that are controlled by the stop sign. Therefore the delay at side-street stop controlled intersections reflects only the delay accruing to vehicles that are stopping at the stop sign, while through traffic on the main street flows uninterrupted. The level of service ranges for the unsignalized intersections are shown in Table 4.4-5.

[3] The Florida Department of Transportation has done extensive research into roadway capacities, which no other state has undertaken. As a result, Florida's conclusions are used throughout the country.

TABLE 4.4-2 **LEVEL OF SERVICE CRITERIA FOR FREEWAYS**

| Level of Service | Volume to Capacity Ratio |
|---|---|
| A | 0 to 0.24 |
| B | >0.24 to 0.40 |
| C | >0.40 to 0.58 |
| D | >0.58 to 0.78 |
| E | >0.78 to 1.00 |
| F | >1.00 |

Source: Adapted from page 23.-3 in 2000 Highway Capacity Manual.

TABLE 4.4-3 **ROADWAY SEGMENT CAPACITIES (COUNTY ROADWAYS)**

| | Level of Service Thresholds[a] | | | | |
|---|---|---|---|---|---|
| # of Lanes | LOS A | LOS B | LOS C | LOS D | LOS E |
| Two | **[b] | **[b] | 480 | 760 | 810 |
| Four | **[b] | **[b] | 1,120 | 1,620 | 1,720 |

[a] Level of service thresholds developed by Florida Department of Transportation Systems Planning Office based on data provided by the Highway Capacity Manual (2000) and other sources. These level of service thresholds are intended for use in general planning applications and are not intended to replace detailed operational analysis.

[b] Level of service thresholds cannot be reached due to the typical design and operation of these roadway types.

TABLE 4.4-4 **SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

| LOS | Description | Average Control Delay (Seconds) |
|---|---|---|
| A | Operations with very low delay occurring with favorable progression and/or short cycle length. | < 10.0 |
| B | Operations with low delay occurring with good progression and/or short cycle lengths. | > 10.0 to 20.0 |
| C | Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear. | > 20.0 to 35.0 |
| D | Operations with longer delays due to a combination of unfavorable progression, long cycle lengths or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable. | > 35.0 to 55.0 |
| E | Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay. | > 55.0 to 80.0 |
| F | Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths. | > 80.0 |

Note: V/C=volume/capacity.
Source: Highway Capacity Manual, Transportation Research Board, 2000.

### 7. Existing Traffic Conditions

The following provides a summary of the existing traffic conditions on the major roadways described above.

a. Freeway Volumes

The most recent daily counts available for the freeway facilities in and around the City of Tracy are shown on Table 4.4-6. As shown in this table, I-205 carries approximately 90,000 vehicles per day in these segments directly adjacent to the city. Segments to the west of the city carry between 110,000 and 119,000 vehicles per day. The volumes on I-5 vary between 21,500 (south of Eleventh Street) and 143,000 north of the I-5/I-205 junction. The volumes on

TABLE 4.4-5 **UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

| LOS | Description | Average Control Per Vehicle (Seconds) |
|---|---|---|
| A | Little or no delays | < 10.0 |
| B | Short traffic delays | > 10.0 to 15.0 |
| C | Average traffic delays | > 15.0 to 25.0 |
| D | Long traffic delays | > 25.0 to 35.0 |
| E | Very long traffic delays | > 35.0 to 50.0 |
| F | Extreme traffic delays with intersection capacity exceeded | > 50.0 |

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

I-580 after it diverges from I-205 are approximately 40,000 vehicles per day. A review of historical records indicates that freeway volumes on I-205 have steadily increased from 1980 to 2002. Converted into an annual rate, this growth is 16 percent per year with over 300 percent growth from 1980 to 2002. This growth can be attributed to regional growth that has occurred in San Joaquin County and also growth in Tracy. Over the same period, the population of Tracy increased from 18,000 to 65,800 people, over a 200 percent increase, with the population of San Joaquin County nearly doubling over this same period with an increase from 347,000 to 595,000 people.

b. Freeway Level of Service Results

Based on the level of service criteria in Table 4.4-2, Fehr & Peers evaluated the existing PM peak hour operation of the freeway facilities in the Tracy area, which are summarized in Table 4.4-7. The level of service for eastbound segments is LOS F on both the six-lane and four-lane segments of I-205. This condition is consistent with field observations that noted significant congestion on I-205 during the afternoon period. Operations in the off-peak direction are generally LOS C or better.

TABLE 4.4-6 **2002 FREEWAY VOLUMES**

| Freeway | Segment | Daily Volume |
|---|---|---|
| I-205 | I-205/I-580 Diverge to Mountain House Pkwy | 110,000 |
| I-205 | Mountain House Pkwy/Eleventh Street | 119,000 |
| I-205 | Eleventh Street/Grant Line Road | 91,000 |
| I-205 | Grant Line Road/Tracy Blvd. | 92,000 |
| I-205 | Tracy Blvd./MacArthur Drive | 92,000 |
| I-205 | MacArthur Drive/I-5 | 92,000 |
| I-580 | Livermore Area (Vasco Road to SR 84) | 174,000 |
| I-580 | Altamont Pass | 143,000 |
| I-580 | Altamont Pass to I-205/I-580 Diverge | 143,000 |
| I-580 | I-205/I-580 Diverge to Mountain House Parkway | 40,500 |
| I-580 | Mountain House Parkway/Lammers Road | 41,000 |
| I-580 | Corral Hollow Road/MacArthur Drive | 38,000 |
| I-5 | North of Jct. I-205 | 143,000 |

Source: CalTrans' 2002 Freeway ADT.

This directionality is reflective of the high number of workers who travel from San Joaquin County to the Bay Area for work and other purposes. While not shown in the table, as a result of the morning commute, there would be similar congestion occurring during the AM peak hours in the opposite direction. Based on these results, it can be concluded that I-205 is currently operating at a deficient level in the eastbound direction during the afternoon period. In addition, I-580 through the Altamont Pass and Livermore is also already operating at LOS E and F in the afternoon for eastbound lanes.

TABLE 4.4-7 **FREEWAY SEGMENTS: EXISTING PM PEAK-HOUR PEAK-DIRECTION VOLUMES AND LEVEL OF SERVICE**

| Fwy | Segment | Dir. | Existing Number of Lanes | Existing Volume | Existing LOS |
|---|---|---|---|---|---|
| I-205 | I-205/I-580 Diverge to Mountain House Parkway | EB | 3 | 6,300 | F |
| | | WB | 3 | 2,200 | B |
| I-205 | Mountain House Parkway/ Eleventh Street | EB | 3 | 6,300 | F |
| | | WB | 3 | 2,500 | B |
| I-205 | Eleventh Street / Grant Line Road | EB | 2 | 4,800 | F |
| | | WB | 2 | 2,200 | C |
| I-205 | Grant Line Road / Tracy Boulevard | EB | 2 | 4,900 | F |
| | | WB | 2 | 2,400 | C |
| I-205 | Tracy Boulevard / MacArthur Drive | EB | 2 | 5,000 | F |
| | | WB | 2 | 2,300 | C |
| I-205 | MacArthur Drive / Junction of I-205 / I-5 | EB | 2 | 5,200 | F |
| | | WB | 2 | 2,400 | C |
| I-580 | Livermore Area (Vasco Road to SR 84) | EB | 4 | 10,100 | F |
| I-580 | Altamont Pass | EB | 4 | 8,000 | E |
| I-580 | Altamont Pass to I-205/ I-580 Diverge | EB | 4 | 8,000 | E |
| I-580 | I-205/I-580 Diverge to Mountain House Parkway | EB | 2 | 1,900 | B |
| I-580 | Mountain House Parkway / Lammers Road | EB | 2 | 2,300 | B |
| I-580 | Corral Hollow Road / MacArthur Drive | EB | 2 | 2,300 | B |
| I-5 | 205 Interchange - North | EB | 4 | 6,000 | C |

Notes:

1. Future level of service calculations assume a per-lane capacity of 2,200 per hour on freeway facilities

2. I-5, I-205 and I-580 peak hour data from Caltrans (2003).

Source: Fehr & Peers, 2004.

c. Roadway Volume and Operation

Some of the highest volume roadways, according to traffic counts, were Grant Line Road, Corral Hollow Road, Tracy Boulevard and Eleventh Street. Each of these roadways had segments that carried at least 1,000 vehicles directionally during the evening peak hour. The three intersections with the highest volumes (sum of all approaches) include:

- Eleventh Street/Coral Hollow Road
- Grant Line Road/Tracy Boulevard
- Eleventh Street/Tracy Boulevard

Based on the results of these intersection counts, peak hour directional roadway volumes and daily traffic counts were estimated. These counts are shown on Figures 4.4-3 and 4.4-4.

At this time, many of the roadways within Tracy operate at an acceptable level of service (LOS C or better).[4] Traffic volumes and congestion are heaviest in the existing urbanized areas of the city, including Eleventh Street, Corral Hollow Road, and Tracy Boulevard. Congestion and resulting delay is heaviest at the major intersections, such as Eleventh Street/Corral Hollow Road. In other, less-developed areas of the city, such as portions of Lammers Boulevard, Valpico Road, and Linne Road, the traffic volumes and resulting congestion are less than in the developed areas of the city. There is some congestion along these roadways, which usually results from the use of stop signs as traffic control devices.

d. Intersection Volumes and Operation

Turning movement volumes for the 43 major intersections in the city are shown on Figure 4.4-5A and 4.4-5B. The majority of these counts were taken in October 2003 with a few counts collected previously in 2002. Morning peak hour counts, defined as the single highest one-hour period between 7:00 a.m. to 9:00 a.m., were taken at all intersections with ramps connecting

[4] See Section C.1.b for information about the LOS thresholds evaluated in this EIR.

to I-205. Counts for the evening peak period (single highest hour from 4:00 p.m. to 6:00 p.m.) were conducted at all 43 intersections.

Table 4.4-8 provides the level of service results for the study intersections. As shown in the table, a majority of the signalized and unsignalized intersections operate at LOS C or better. At several unsignalized intersections, traffic attempting to enter the main street from the stop-controlled side-street operates at worse than LOS C. These unsignalized intersections include:

- Grant Line Road/Byron Road
- Eleventh Street/MacArthur Drive (south)
- Schulte Road/Lammers Road (south)
- Schulte Road/Chrisman Road

There are also a number of intersections that approach, but do not exceed, the LOS C threshold of 35 seconds of delay. These intersections have average delays that range from 30 to 35 seconds. These intersections include:

- Grant Line Road/Corral Hollow Road
- Grant Line Road/Tracy Boulevard
- Lowell Avenue/Corral Hollow Road
- Eleventh Street/Corral Hollow Road

**8. Bicycle System**

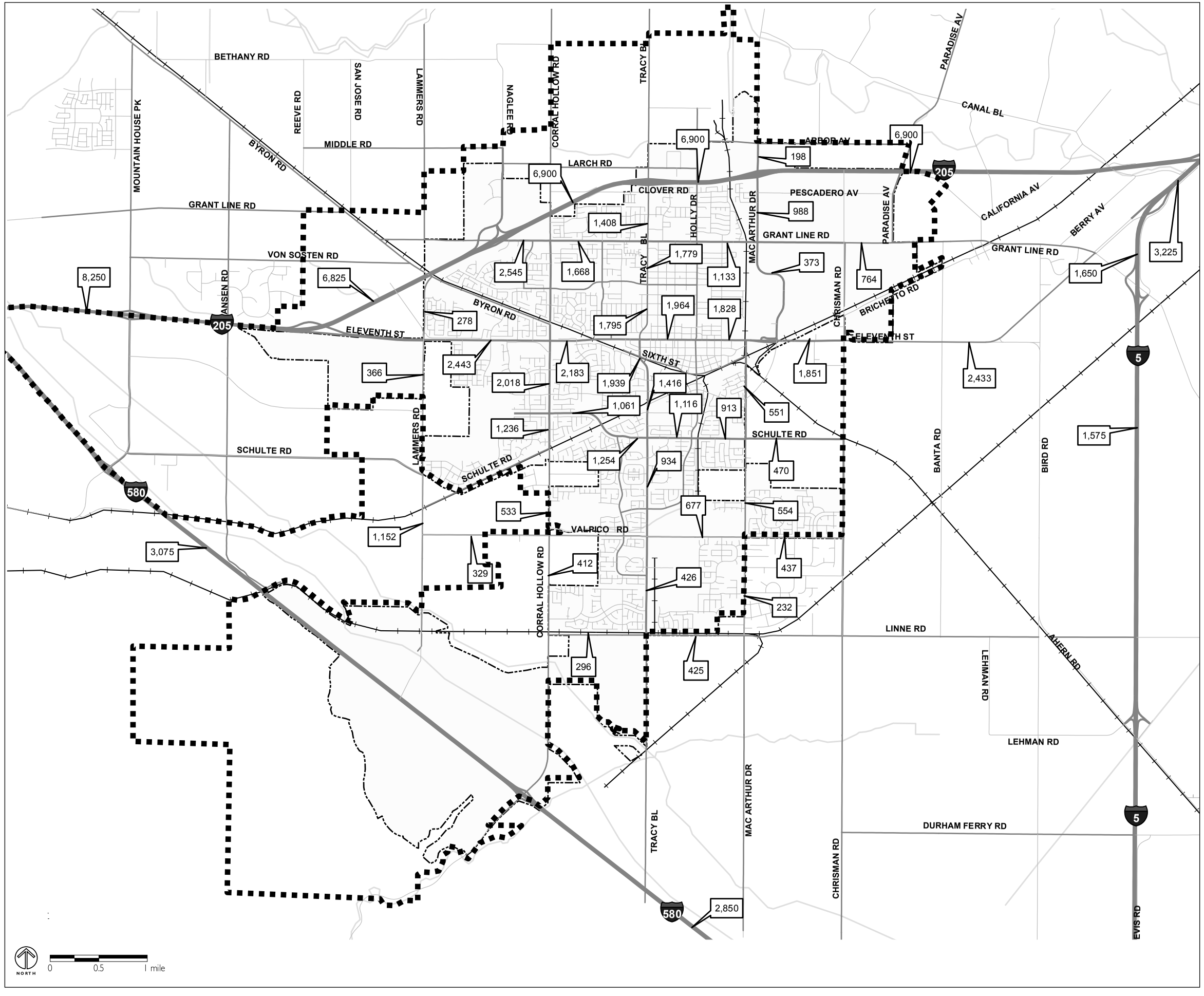
The bicycle system in Tracy includes a variety of bicycle facilities. These facilities range from dedicated off-street bicycle routes to on-street facilities designated by signage only.

Bicycle facilities are classified according to a typology established by Caltrans as documented in "Chapter 1000: Bikeway Planning and Design" of the Highway Design Manual (5th Edition, California Department of Transportation, January 2001). The Caltrans standards provide for three distinct types of bikeway facilities, as generally described below:

- Class I Bikeway (Bike Path) provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

FIGURE 4.4-3

# ROADWAY SEGMENTS EXISTING PM PEAK HOUR TWO-WAY TRAFFIC VOLUMES




**#** PM Bi-directional Volumes

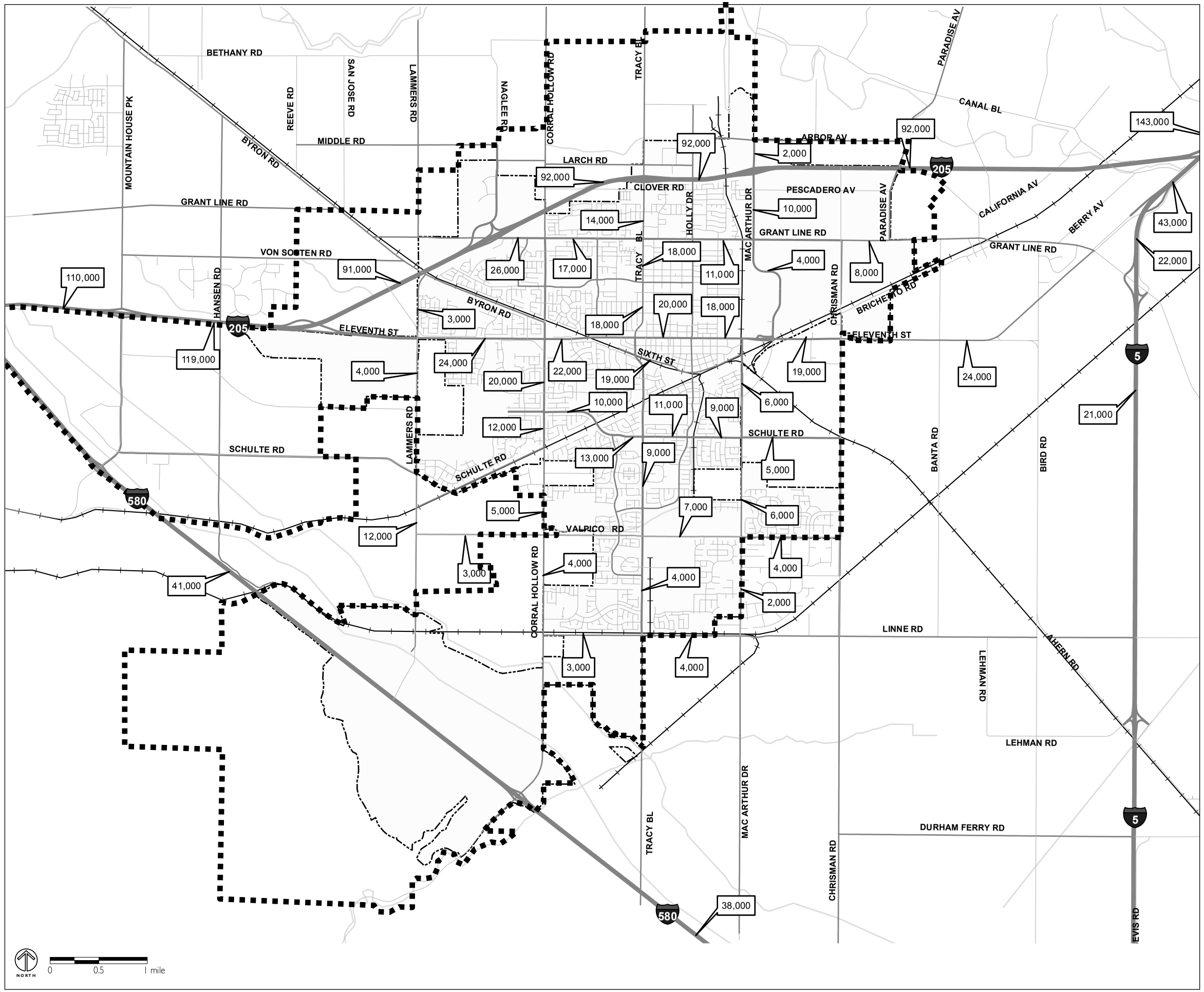
City Limit

Proposed Sphere of Influence

Source: Fehr & Peers, 2005 .

FIGURE 4.4-4

# ROADWAY SEGMENTS EXISTING DAILY TRAFFIC VOLUMES




# Average Daily Traffic Volume

# City Limit

Source: Fehr & Peers, 2005.

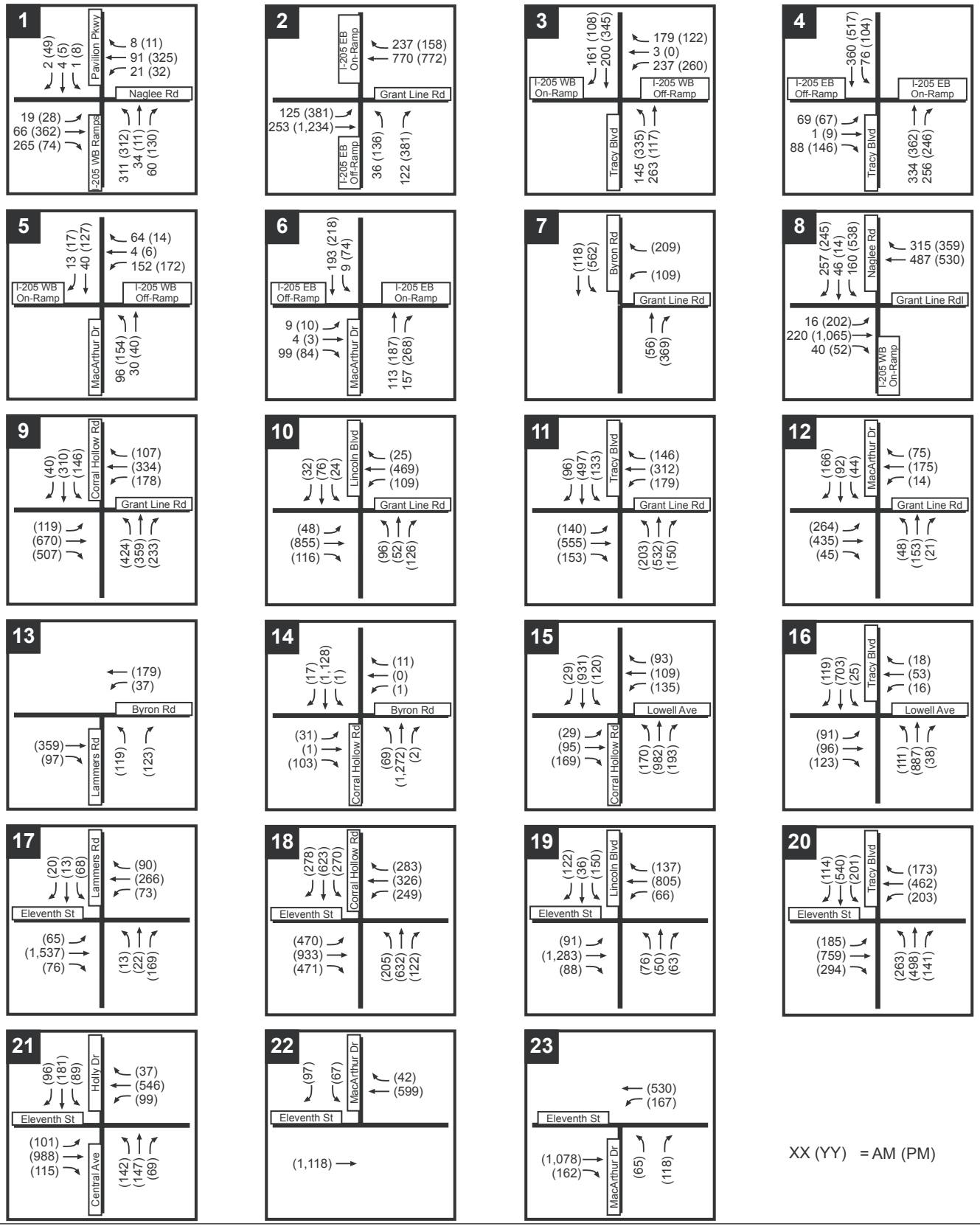
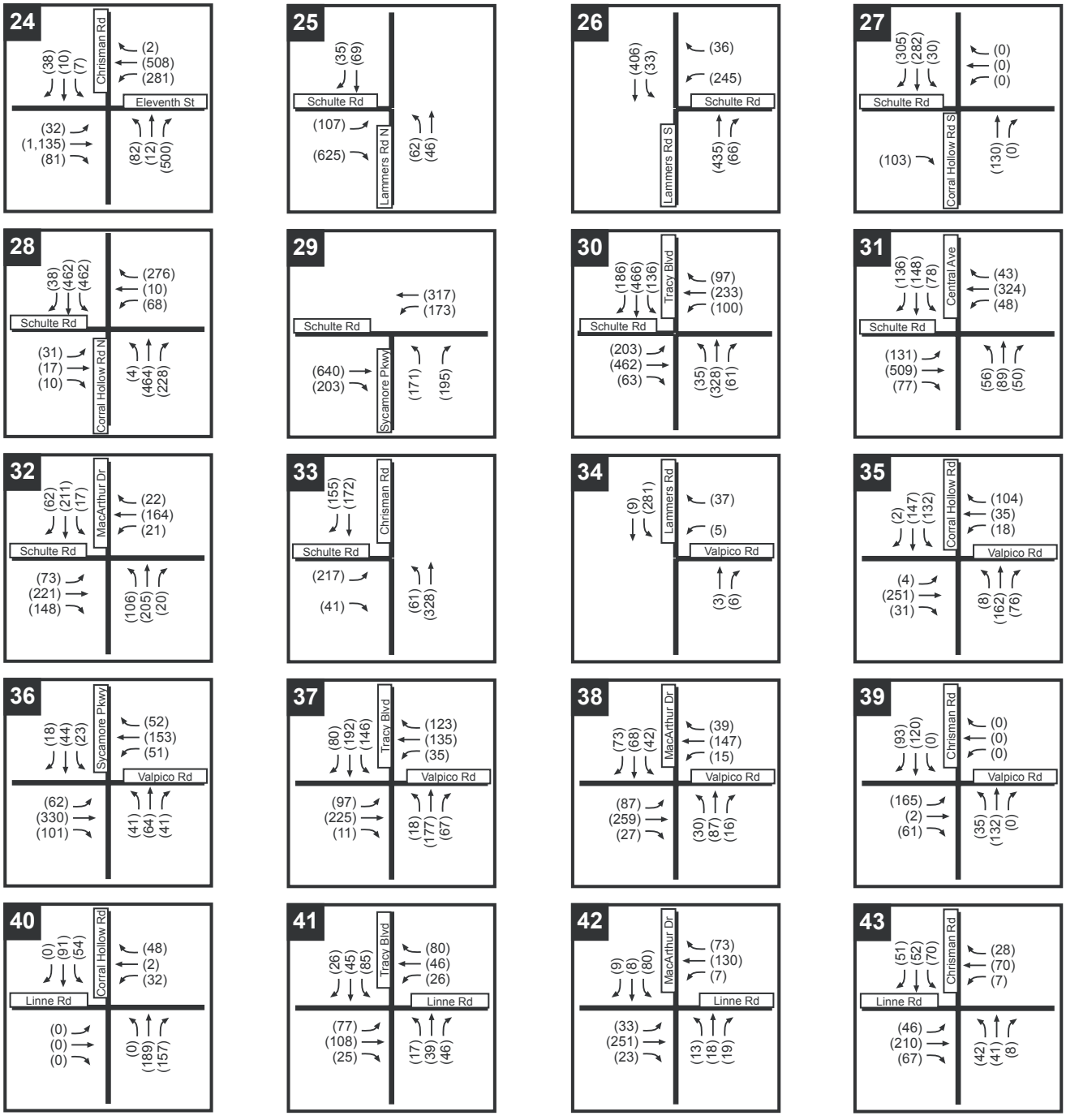



**FIGURE 4.4-5A**

**EXISTING PEAK HOUR TRAFFIC VOLUMES**




XX (YY) = AM (PM)

**FIGURE 4.4-5B**

**EXISTING PEAK HOUR TRAFFIC VOLUMES**

TABLE 4.4-8 **EXISTING INTERSECTION LEVEL OF SERVICE**

| Intersection | Signal | Peak Hour | Delay[a] | LOS |
|---|---|---|---|---|
| I-205 WB Ramps/Naglee Road | Signal | AM, PM | 13, 14 | B, B |
| I-205 EB Ramps/Grant Line Road | Signal | AM, PM | 11, 20 | B, C |
| I-205 WB Ramps/Tracy Blvd. | Signal | AM, PM | 14, 23 | B, C |
| I-205 EB Ramps/Tracy Blvd. | Signal | AM, PM | 8, 10 | A, A |
| I-205 WB Ramps/MacArthur Drive | Signal | AM, PM | 8, 8 | A, A |
| I-205 EB Ramps/MacArthur Drive | Signal | AM, PM | 6, 5 | A, A |
| **Grant Line Road/Byron Rd** | **SSS** | **PM** | **58 (SB)** | **F** |
| Grant Line Road/Naglee Road | Signal | AM, PM | 8, 12 | A, B |
| Grant Line Road/Corral Hollow Road | Signal | PM | 34 | C |
| Grant Line Road/Lincoln Boulevard | Signal | PM | 19 | B |
| Grant Line Road/Tracy Boulevard | Signal | PM | 35 | C |
| Grant Line Road/MacArthur Drive | Signal | PM | 20 | B |
| Byron Road/ Lammers Road | AWS | PM | 13 | A |
| Byron Road/Corral Hollow Road | Signal | PM | 7 | A |
| Lowell Avenue/Corral Hollow Road | Signal | PM | 31 | C |
| Lowell Avenue/Tracy Boulevard | Signal | PM | 26 | C |
| Eleventh Street/Lammers Road | Signal | PM | 21 | C |
| Eleventh Street/Corral Hollow Road | Signal | PM | 33 | C |
| Eleventh Street/ Lincoln Boulevard | Signal | PM | 22 | C |
| Eleventh Street/ Tracy Boulevard | Signal | PM | 29 | C |
| Eleventh Street/ Central Avenue | Signal | PM | 26 | C |
| Eleventh Street/ MacArthur Drive (North) | Signal | PM | 6 | A |
| Eleventh Street/ Chrisman Road | Signal | PM | 17 | B |
| Schulte Road/ Lammers Road North | AWS | PM | 20 | B |

TABLE 4.4-8 **EXISTING INTERSECTION LEVEL OF SERVICE** (CONTINUED)

| Intersection | Signal | Peak Hour | Delay[a] | LOS |
|---|---|---|---|---|
| **Schulte Road/Lammers Road South** | **SSS** | **PM** | **69 (WB)** | **F** |
| Schulte Road/ Corral Road South | SSS | PM | 11 (EB) | B |
| Schulte Road/ Corral Road North | Signal | PM | 20 | C |
| Schulte Road/ Sycamore Parkway | Signal | PM | 14 | B |
| Schulte Road/Tracy Boulevard | Signal | PM | 21 | C |
| Schulte Road/Central Avenue | Signal | PM | 17 | B |
| Schulte Road/MacArthur Drive | AWS | PM | 15 | B |
| **Schulte Road/ Chrisman Road** | **SSS** | **PM** | **25 (EB)** | **D** |
| Valpico Road/ Lammers Road | SSS | PM | 9 (WB) | A |
| Valpico Road/Corral Hollow Road | AWS | PM | 12 | A |
| Valpico Road/Sycamore Parkway | AWS | PM | 11 | B |
| Valpico Road/Tracy Boulevard | AWS | PM | 16 | C |
| Valpico Road/MacArthur Drive | Signal | PM | 22 | C |
| Valpico Road/Chrisman Road | SSS | PM | 12 (EB) | B |
| Linne Road/Corral Hollow Road | SSS | PM | 11 (WB) | B |
| Linne Road/Tracy Boulevard | AWS | PM | 9 | A |
| Linne Road/MacArthur Drive | AWS | PM | 10 | A |
| Linne Road/Chrisman Road | AWS | PM | 10 | A |

Notes: **Deficient intersections indicated in bold.**
AWS = All way stop, SSS = side street stop.
See Section C.1.b for information about the LOS thresholds evaluated in this EIR.

[a] For signalized intersections and all-way stop, delay is average control delay for all vehicles based on criteria in the *2000 Highway Capacity Manual*. For side-street stop- controlled intersections, delay for worst movement calculated using the *2000 Highway Capacity Manual* methodology.

Source: Fehr & Peers, December 2003.

- Class II Bikeway (Bike Lane) provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted.
- Class III Bikeway (Bike Route) provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

There are some existing Class I bikeway facilities in the city. The longest continuous Class I Bike Path extends from West Eleventh Street to south of Valpico Road. This facility is found to the east of Corral Hollow Road. A second Class I facility runs parallel to North MacArthur Drive and extends from East Eleventh Street to I-205.

Class II facilities are generally located in the western portion of Tracy. These facilities are found along roadways such as Corral Hollow Road and Tracy Boulevard. In addition, there are Class II facilities on Grant Line Road and West Eleventh Street to the west of Tracy Boulevard.

The Class III Bike Route network is most prevalent in the Tracy area. Portions of roadways such as Hickory Avenue, Holly Drive, and Schulte Road include these facilities.

The network of Class I, II, and III facilities are shown on Figure 4.4-6. As shown on the figure, there are extensive bicycle facilities within the city. However, there are significant gaps in the bicycle network. For example, Tracy Boulevard has segments with Class II and Class III designations with other segments containing no bicycle facilities. Because of these gaps, it is not possible to traverse the city traveling north to south or east to west using the designated bicycle network.

The City of Tracy is currently in the process of writing a Tracy Bikeways Master Plan Design Supplement, which will provide the City with a detailed design strategy for improving the existing circulation network. The Design Supplement is an Amendment to the 2005 Tracy Bikeways Master Plan. The

new trail designs are intended to guide bicyclists safely through various neighborhood land uses. The designs use a modular trail segment approach that gives the City a range of options for a variety of trail types.

**9. Public Transit System**

The public transit system serving Tracy includes both a bus and rail passenger component. The bus and rail system provide local and regional connectivity to residents of Tracy.

a. Passenger Bus System

The passenger bus system operating within Tracy includes the following services:

- Local fixed-route bus service operated by the City of Tracy (Tracer)
- Regional intercity fixed-route bus service operated by the San Joaquin Regional Transit District (SJRTD)
- Flexible fixed-route service operated by SJRTD
- Commuter express bus service operated by SJRTD

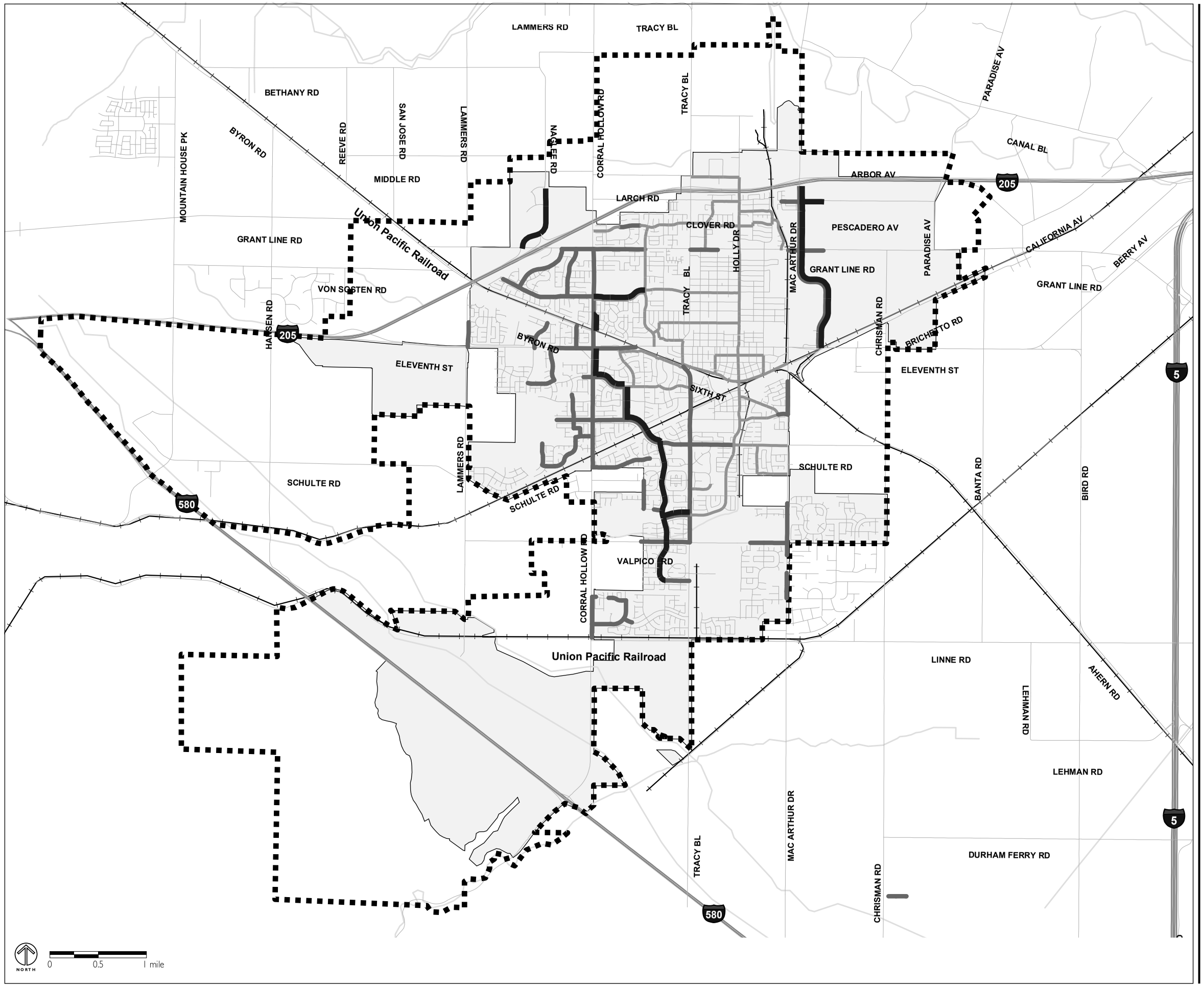
Fixed-route services are those that adhere to a strict route and timetable with scheduled stop locations. Flexible-route service is a demand responsive system whereby a driver may deviate from the route to pick-up and drop-off passengers. Some transit agencies, such as SJRTD, also operate flexible fixed-route service whereby a driver may temporarily deviate from the designated route for elderly and disabled passengers.

*i. Local Fixed-Route Bus Service*

The City of Tracy operates a fixed-route bus system within the city. This service is called Tracer. As of October 2008, the Tracer offers four different routes operating within the existing City limits. The endpoints for the route include City Hall and the West Valley Mall. The streets covered for the Tracer service are shown on Figure 4.4-7.

FIGURE 4.4-6

# EXISTING BICYCLE FACILITIES




**Class 1 Bicycle Path**

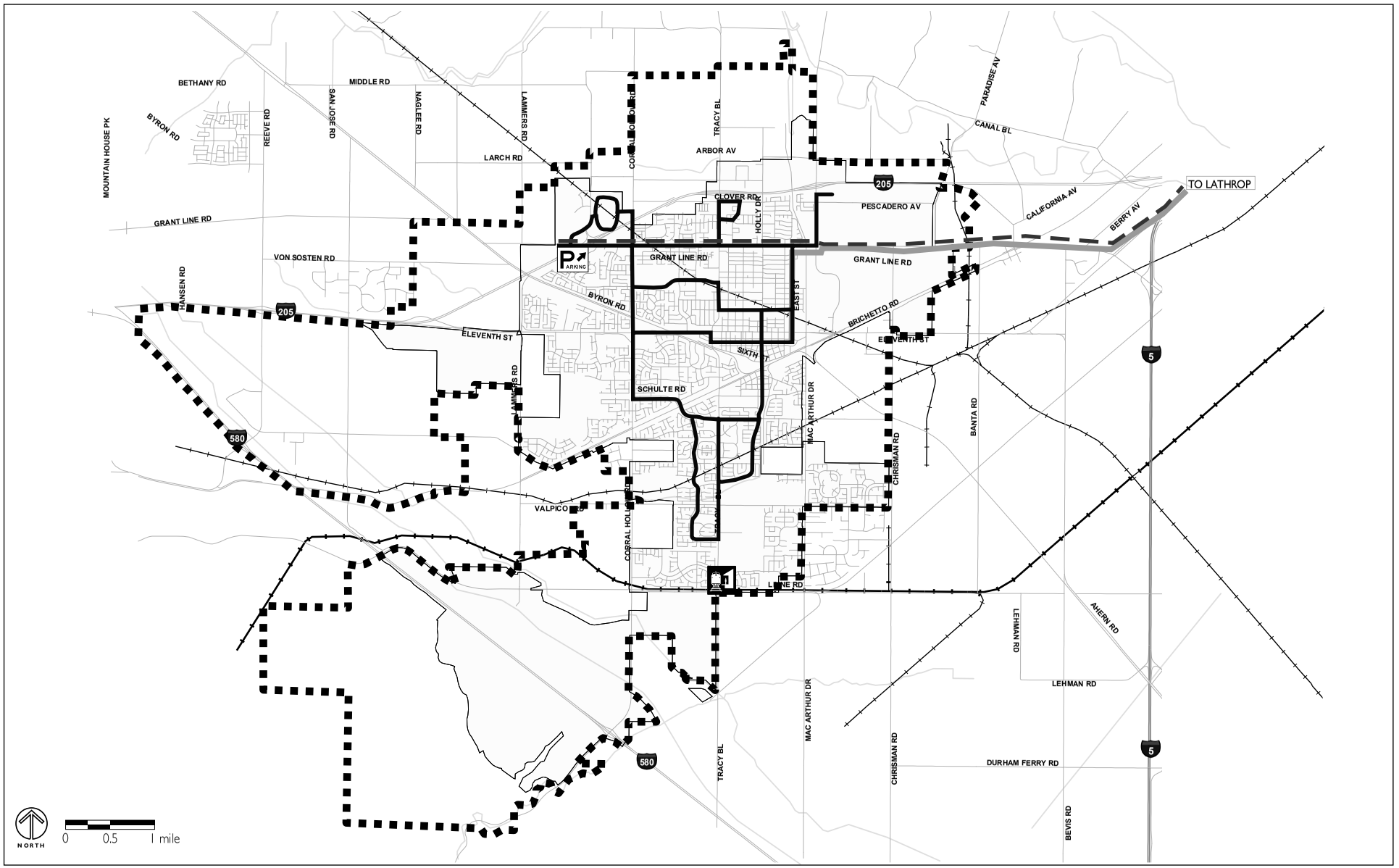
**Class 2 Bicycle Lane**

**Class 3 Bicycle Route**

**City Limits**

**Proposed Sphere of Influence**

Source: Fehr & Peers, 2005.




Source: Fehr & Peers, 2005

**FIGURE 4.4-7**

**EXISTING TRANSIT FACILITIES**

- Park and Ride Lot
- ACE Train Station
- ACE Commuter Rail
- TRACER
- SJRTD Route 90
- SJRTD Route 26
- City Limit
- Proposed Sphere of Influence

**CITY OF TRACY**
GENERAL PLAN
DRAFT SUPPLEMENTAL EIR

The Tracer is available Monday through Friday from approximately 7:00 a.m. to 7:00 p.m. The service operates Saturday from 9:00 a.m. to 5:00 p.m. Tracer does not operate Sundays or on certain holidays.

*ii. Regional Intercity Fixed-Route Bus Service*

The SJRTD operates one fixed-route bus line (Route 26) that connects Tracy to Stockton and Lathrop along I-5 with connections to Manteca and Ripon. Route 26 connects with Tracy's Tracer local bus service in downtown Tracy and to Manteca Transit buses in downtown Manteca and at the Wal-Mart in Manteca. Within the city, Route 26 extends along East Street and Grant Line Road. This route operates Monday through Friday from 5:40 a.m. to 10:25 p.m. Route 26 does not operate on weekends. Route 26 is shown on Figure 4.4-7.

*iii. SJRTD Flexible Fixed-Route Service*

SJRTD also operates Route 90, which is a flexible fixed-route line. Within the City of Tracy, this route extends along Grant Line Road. Route 90 operates on 1-hour, 45-minute headways in the evenings with 2-hour headways on weekends and holidays. Figure 4.4-7 displays the route for Route 90.

*iv. SJRTD Commuter Bus Service*

The SJRTD operates a number of commuter bus lines which connect cities in San Joaquin County with major employment locations in the San Francisco Bay Area, including Pleasanton, Dublin, Livermore, Mountain View, Palo Alto, and Sunnyvale. These various routes pick up and drop off passengers at the Tracy Park-And-Ride facility (indicated on Figure 4.4-7). The pick-up times vary from 4:00 a.m. to 6:00 a.m. with drop-offs ranging from 4:00 p.m. to 6:00 p.m.

*v. Bus System Ridership*

Table 4.4-9 provides a comparison of the yearly bus service and ridership provided by Tracer as compared to San Joaquin County as a whole, including Tracer. This table provides a comparison of the levels of bus service as measured by annual revenue hours of operation (total hours of operation for all

TABLE 4.4-9 **BUS TRANSIT RIDERSHIP**

| | City of Tracy | San Joaquin County |
|---|---|---|
| **Total Passengers - Annual** | **65,118** | **3,992,281** |
| **Vehicle Revenue Hours - Annual** | | |
| Weekdays | 11,959 | 162,672 |
| Saturday | – | 8,657 |
| Sunday | – | 9,734 |
| Total | 11,959 | 181,063 |
| Total Revenue Vehicle Miles | 140,800 | 3,642,301 |
| **Vehicles in Operation** | | |
| Weekdays – Midday | 7 | 54 |
| Weekdays – Peak | 5 | 86 |
| Saturday | – | 20 |
| Sunday | – | 20 |

Source: *State of California Transit Operators and Non-Transit Claimants Annual Report, Fiscal Year 2000-01.*

vehicles), total revenue vehicle miles (total mileage for all vehicles), and total number of vehicles in the system. As shown in this table, the total yearly riders for the Tracer system is 65,118 as compared to nearly a total of 4 million riders using transit in San Joaquin County over the 2000-2001 period.

b. Passenger Rail System

Altamonte Commuter Express (ACE) is a passenger rail service connecting Stockton to San Jose. The ACE station for Tracy is located on Tracy Boulevard at Linne Road. There are currently three ACE trains per day which

arrive in Tracy between 4:00 a.m. and 7:00 a.m. These trains then return to Tracy between 5:00 p.m and 7:00 p.m. Figure 4.4-7 indicates the location of the ACE line as well as the ACE station on Tracy Boulevard.

The latest available daily ridership estimate for ACE service is provided by the 2001 ACE Ridership Survey. This survey indicates that the total daily ridership (boardings and alightings combined) for the ACE system is 2,842 with 19 percent (544) of those riders originating at the Tracy ACE station.

The estimated total annual ridership for ACE is 744,000, according to the APTA 2001 Commuter Rail Transit Report. The estimated annual ridership from the Tracy ACE station would therefore be approximately 140,000 based on the results of the daily ridership survey.

**10. Freight System**

Given its relative location to the San Francisco Bay Area and other areas of San Joaquin County, Tracy is ideally positioned to facilitate the movement of regional freight. The city functions both as a conduit for freight traffic and also as an origin point, particularly for regional truck traffic. For example, Safeway recently relocated its major Bay Area distribution center to Tracy. The goods or freight movement system in the City of Tracy consists of both an extensive rail system and designated truck routes.

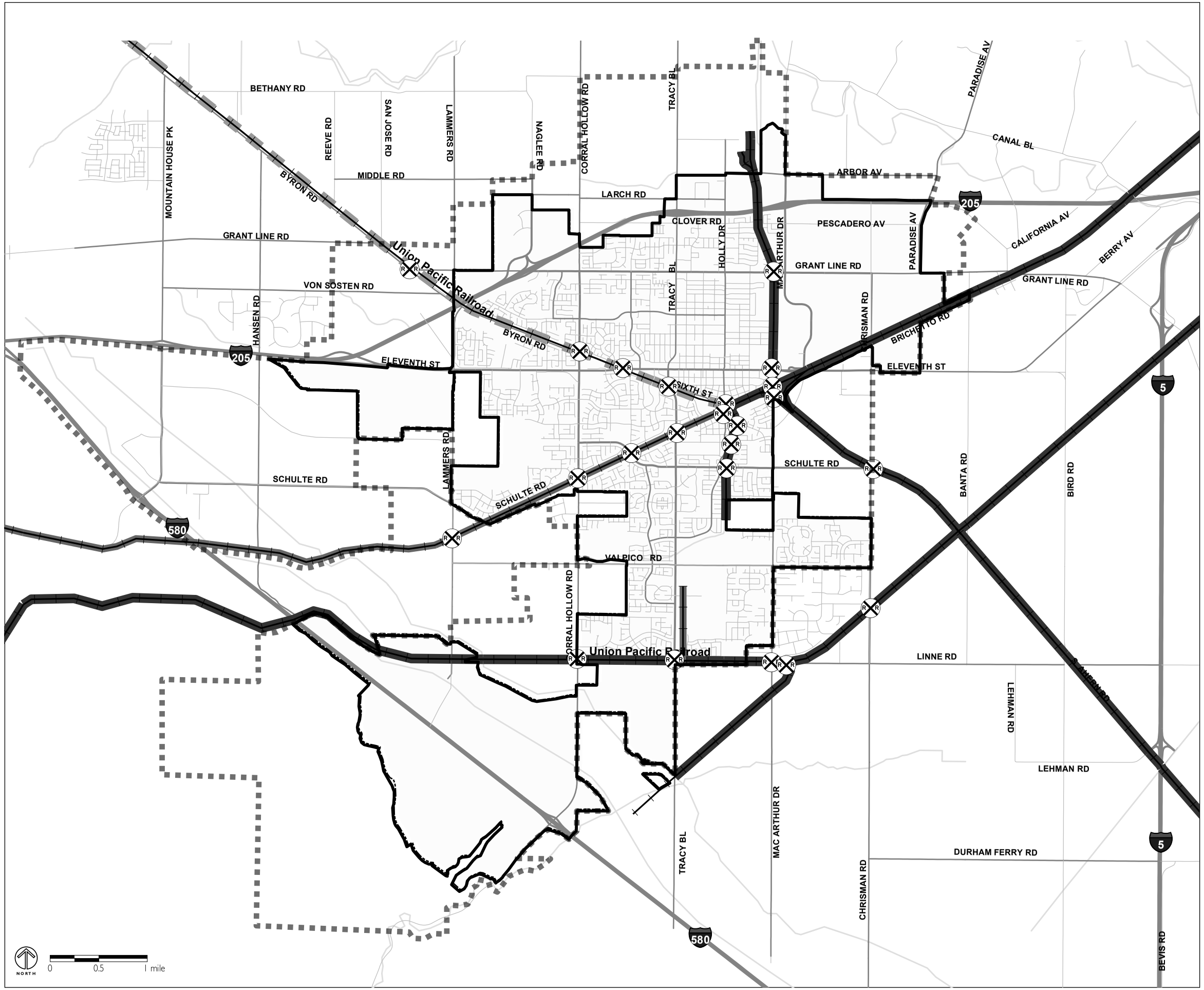
a. Freight Rail System

There are three major rail lines that enter Tracy from the east, two of which merge, and subsequently exit to the west. There are several minor spur lines along the main lines. One of these spur lines is found south of Linne Road that is used for industrial shipping. The second extends north from Eleventh Street to I-205 and is mainly used by the sugar plant. The existing rail lines are shown on Figure 4.4-8.

These lines are currently owned by Union Pacific Corporation, which operates freight rail service through its Union Pacific Railroad (UPRR) subsidiary. UPRR is the largest railroad in North America with service in over 23 states.

FIGURE 4.4-8

# RAIL LINES AND AT-GRADE CROSSINGS




- At-Grade Crossing
- Daily Use Rail Line
- Sporatic Use Rail Line
- Storage Use Rail Line
- City Limit
- Proposed Sphere of Influence

Source: Fehr & Peers, 2005.

The freight lines through Tracy provide connectivity from the West Coast, including major ports such as Oakland, to all other areas of operation.

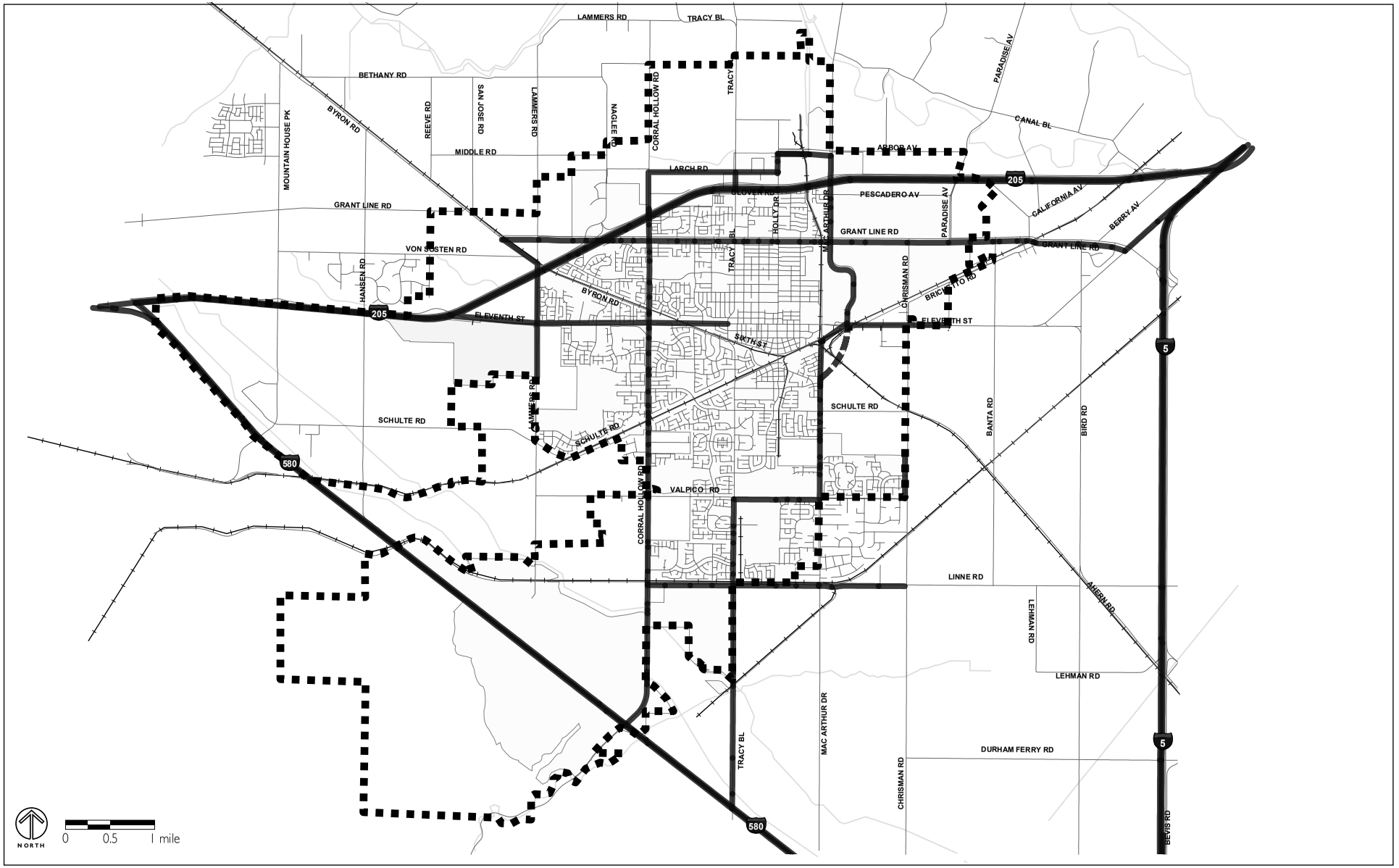
The main line runs through south Tracy along Linne Road. This line is used as both an industrial (ten freights per day) and commuter (via ACE train service) rail. As mentioned above, the ACE station is also located on this line at the corner of Tracy Boulevard and Linne Road. The remaining lines that tie together in the center of Tracy are known as the "bowtie." The northwesterly main alignment that travels along Byron Road is used minimally and ties into Martinez. The line to the northeast is used for local freight and ties into Stockton. To the southeast, UPPR leases the line to California Northern Railroad. The line to the southwest, whose tracks stop at the county line, is no longer in service and is used only for storage.

Given the prevalence of railroad lines, there are a significant number of existing at-grade roadway/railroad crossings. There are currently 23 at-grade crossings. These crossings are distributed throughout the city with two crossings each on Corral Hollow Road, Tracy Boulevard and Macarthur Drive.

b. Truck Routes

As mentioned in Section A.1.f of this chapter, the City has adopted a truck route ordinance. Figure 4.4-9 provides a map of the designated truck routes within Tracy. These routes include both permanent and temporary truck routes. The designated truck routes in the city include:

- Arbor Avenue (MacArthur Drive to Holly Drive)
- Byron Road (west City limits to Lammers Road)
- Corral Hollow Road (Larch Road to Grant Line Road and Linne Road to I-580)
- Chrisman Road (north of Valpico portion that is within the City limits)
- Eleventh Street (west City limits to Tracy Boulevard and MacArthur Drive to east City limits; north leg of MacArthur Drive to south leg of MacArthur Drive)




Source: Fehr & Peers, 2004 and City of Tracy Muncipal Code, Section 3.08.310

**FIGURE 4.4-9**

**Truck Route (Permanent)**

**Truck Route (Temporary)**

**City Limit**

**Proposed Sphere of Influence**

## EXISTING TRUCK ROUTES

**CITY OF TRACY**
GENERAL PLAN AMENDMENT
DRAFT SUPPLEMENTAL EIR

- Sixth Street (MacArthur Drive to Central Avenue)
- Grant Line Road (west City limits to Corral Hollow Road and MacArthur Drive to east City limits)
- Holly Drive (Arbor Avenue to Larch Road)
- Lammers Road (Byron Road to 0.5 miles south of Eleventh Street)
- Larch Road (Holly Drive to Corral Hollow Road)
- Linne Road (east City limits to west City limits)
- MacArthur Drive (Arbor Avenue to Valpico Road)
- Tracy Boulevard (Larch Road to I-205 and Valpico Road to south City limits)
- Valpico Road (Tracy Boulevard to MacArthur Drive)[5]
- Tracy Boulevard (south of Valpico Road)
- Linne Road

In addition to locally designated truck routes, I-205, I-580 and I-5 are designated truck routes by the State of California, and are shown on Figure 4.4-9 as designated truck routes.

**11. Airport**

The Tracy Municipal Airport is a general aviation airport owned by the City and managed by the Parks and Community Services Department. The airport is located to the west of Tracy Boulevard and north of I-580.

### *B. Standards of Significance*

The City of Tracy General Plan and Sustainability Action Plan would create a significant traffic and circulation impact if they would:

[5] Tracy Municipal Code, Section 3.08.310 Designated truck routes.

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency or the city for designated roads or highways.
- Substantially increase hazards due to a design feature or incompatible uses.
- Result in inadequate emergency access.
- Result in inadequate parking capacity.
- Conflict with adopted policies, plans or programs supporting alternative transportation.
- 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.

### *C. Impact Discussion*

The following provides an analysis of the potential impacts the proposed General Plan and Sustainability Action Plan may have on the circulation system in Tracy. Automobile, public transit, bicycle, pedestrian, as well as air traffic is analyzed in regards to operation and safety issues.

#### 1. Automobile Traffic Impacts

To assess the potential impact of the proposed General Plan and Sustainability Action Plan on automobile traffic in and around Tracy, Fehr & Peers completed a traffic study for the proposed General Plan. The following provides an overview of the assumptions used for the traffic model, a description of the threshold of significance applied and a discussion of how future traffic increases would affect the local and regional roadway system.

a. Modeling Assumptions

The future traffic forecasts for Tracy used in the following analysis were developed using a version of the official SJCOG regional travel demand model adapted for use in the development of the proposed General Plan and this EIR.

The SJCOG released an updated version of their travel demand model in 2007. The model data sets include a 2006 Base Year model and a 2030 Future Year model. These models are regional models and take into consideration San Joaquin County, the San Francisco Bay Area (Alameda, Contra Costa, Marin, Santa Clara, San Francisco, San Mateo, Sonoma, Solano and Napa Counties), portions of Stanislaus County, and portions of the Sacramento Metropolitan area. Each model year (2006 and 2030) includes roadway networks and land use data. The SJOCG model has detailed information regarding land use and roadway networks in San Joaquin County, while the data outside the county is more aggregated.

The 2030 Future Year SJCOG travel demand model reflects regionally accepted land use projections for each of the jurisdictions in San Joaquin County, as defined by SJCOG. The 2030 Future Year roadway network also reflects the programmed and approved roadways, as defined by the adopted RTP.

This SJCOG model, which reflects adopted land use projections and roadway networks, was modified to show more detail within the Tracy area for both the Base Year (2002-2003 existing condition) and the proposed General Plan analysis year, which was defined to be 2030. These modifications include adding additional detail to the traffic analysis zones, refining the land use within the city and SOI based on detailed employment and population data, and verifying the roadway network for the city.

This refinement process also includes validating the Base Year model in the Tracy area, which ensured that the model accurately reflected travel patterns in Tracy. This validation involved systematic comparison of recently col-

lected traffic counts to the model results along screen lines and individual roadway segments.

Following the completion of the model validation process, Fehr & Peers developed a future year model for 2030 that reflected the anticipated land use in Tracy and the SOI for the proposed General Plan. This 2030 model also includes planned roadway improvements within the Tracy area, as well as added land use and roadway network detail. No adjustments were made to the SJCOG land use data or roadway networks outside of Tracy and the SOI to preserve conformity with the adopted RTP transportation system and demographic forecasts.

The 2030 traffic impacts for the proposed General Plan and Sustainability Action Plan were assessed through the use of the travel demand model, which provides directional roadway segment traffic forecasts and several level of service analysis techniques. The level of service thresholds described in Section C.1.b below were used to determine at what level of service the freeways, roadways and intersections operated with the proposed General Plan.

The traffic study area included all of the roadways within Tracy and the SOI, as well as freeways and regional roadways that are likely to be impacted by traffic associated with growth in the Tracy area, including I-205, I-580, and I-5. Segments of I-580 analyzed by the study include a segment in Livermore, the Altamont Pass, and several segments adjacent to the city. The regional roadway analysis included adjacent county roadways including Altamont Pass Road, Patterson Pass Road, Tesla Road, Byron Highway and Mountain House Parkway.

b. Level of Service Thresholds

For the analysis of the proposed General Plan, the level of service thresholds identified in the 2006 General Plan (prior to the 2009 Amendment) were used. The 2006 General Plan level of service thresholds are described in Policy 1 under General Plan Objective CIR-1.3, which states that to the greatest

extent feasible, the City shall strive for LOS C on all streets and intersections, except as follows:

- LOS D shall be allowed on streets and at intersections within ¼-mile of any freeway. This lower standard is intended to discourage inter-regional traffic from using Tracy streets.
- LOS E shall be allowed in the Downtown Urban Center and Bowtie areas of Tracy.

Policy 2 under the same Objective CIR-1.3 indicates that the City may allow individual locations to fall below the City's level of service standards in instances where the construction of physical improvements would be infeasible, prohibitively expensive, significantly impact adjacent properties, or the environment, or have a significant adverse effect on the character of the community.

Subsequent to the traffic impact analysis, the proposed 2009 General Plan Amendment revised the LOS threshold as described in Section A.6. The revised LOS policy calls for an average peak-hour LOS D or better on all existing and future streets within the city limit, with two exceptions: LOS E is allowed on streets and intersections within one-quarter mile of any freeway, and LOS E is allowed in the Downtown and Bowtie areas of Tracy. This change in the LOS threshold means that fewer roadways would be considered deficient. Therefore, this EIR provides a conservative estimate of roadway deficiencies under the proposed project.

c. Roadway Improvements and Extensions

The proposed General Plan includes a significantly expanded local roadway network, as depicted on Figure 5-1 of the proposed General Plan. The roadway network identified in the proposed General Plan was designed to support the ultimate buildout of the land use plan. However, due to the Growth Management Ordinance (GMO) and market conditions, not all of the Plan area would develop by 2030. As a result, the entire roadway network would not be required to be constructed in the next 20 years.

As part of the analysis for the proposed General Plan and EIR, the improvements that would be needed by 2030 have been identified. These improvements include the reclassification of portions of several streets from minor arterial to major arterial status, as listed in Table 4.4-10. Table 4.4-11 indicates roads that will need to be widened to serve the development in 2030. Caltrans' planned widening of I-205 to eight lanes is also indicated. These widenings are shown on Figure 4.4-10. A substantial number of new roads will be required to serve traffic generated by the proposed General Plan; these are shown on Figure 4.4-11. Other improvements, such as signalization of approximately 30 intersections, will also be required to support the proposed General Plan. In addition, the upgrading of Eleventh Street/Lammers Road to an urban interchange would be needed.

It is important to maintain circulation continuity throughout the network of the city and county. Thus, it is imperative for the City to coordinate with San Joaquin County to incorporate the following upgrades and/or widenings into the circulation plan, including sections that are outside the City's Sphere of Influence:

- Lammers Road between Linne Road and Eleventh Street
- Valpico Road between Lammers Road and Corral Hollow Road
- Old Schulte Road between west of Lammers Road
- Chrisman Road south of Eleventh Street

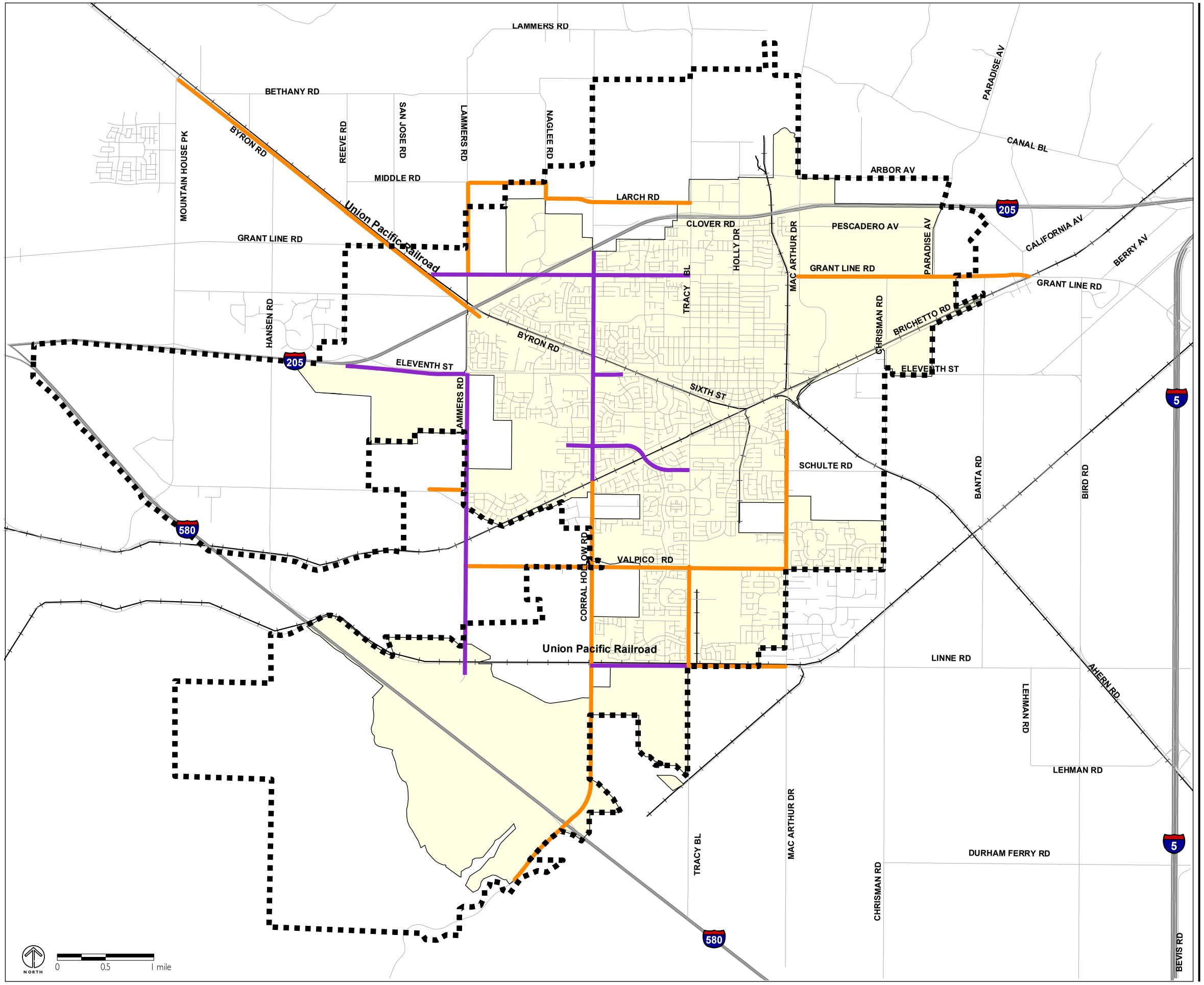
While the existing Roadway Master Plan contains many of these improvements, policies and actions under Objective CIR-1.1, Action 1 of the General Plan supports updating the Roadway Master Plan upon adoption of the General Plan to ensure that these improvements are included.

d. Future Traffic Levels

Development in Tracy and the SOI under the proposed General Plan and Sustainability Action Plan would cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system by 2030. Table 4.4-12 provides an example of how traffic will increase as a result of the proposed General Plan by comparing trip generation for the Base Year

FIGURE 4.4-10

# PROPOSED ROADWAY WIDENINGS




Widened to 6 Lanes

Widened to 4 Lanes

City Limits

Sphere of Influence

Data Source: Fehr & Peers, 2005.

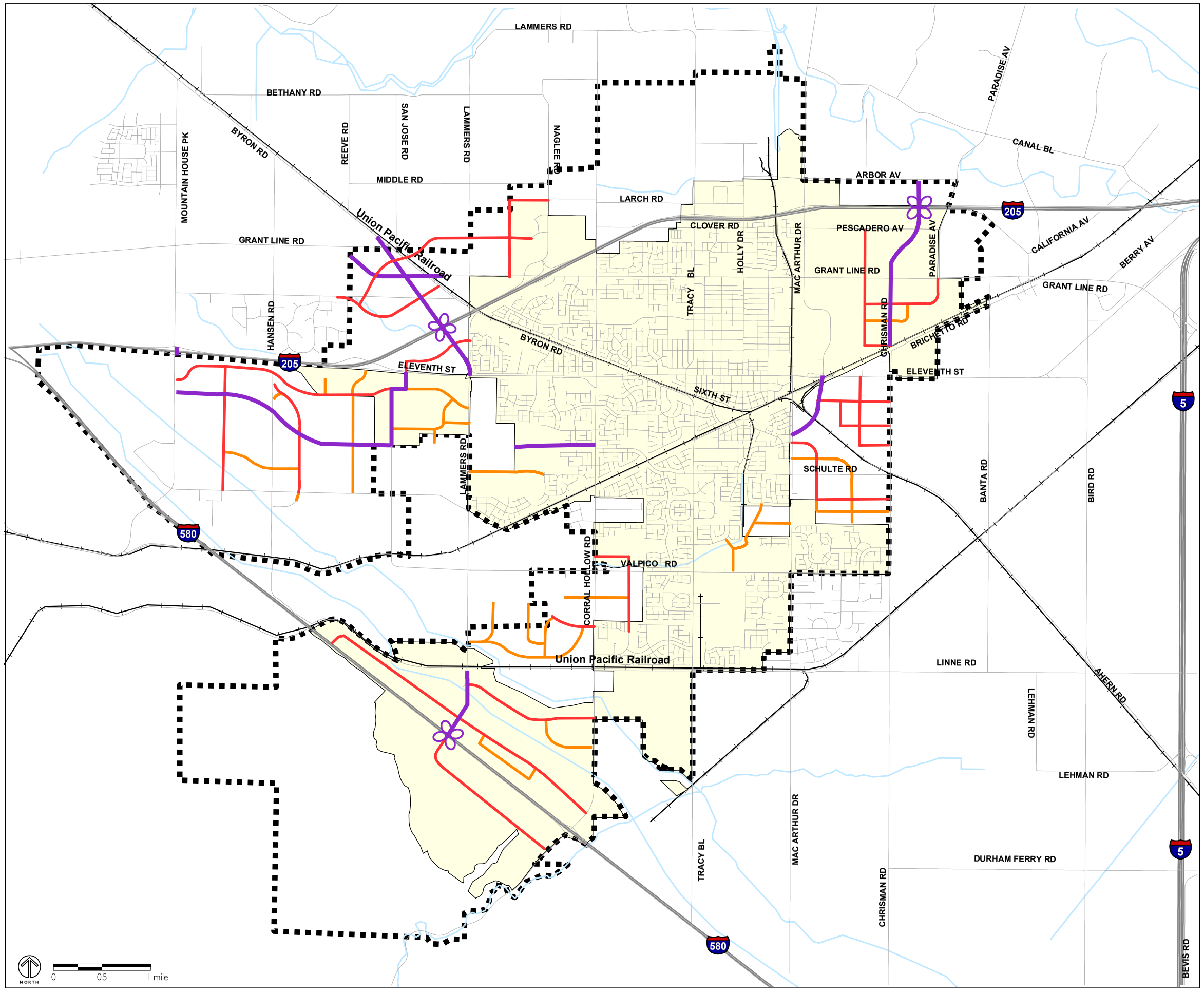
**Notes:**

**1. Conceptual layout only**

**2. Revisions/additions to minor arterials and other collectors will occur during development review**

FIGURE 4.4-11

# PROPOSED NEW ROADWAYS




- Major Arterial / Expressway / Boulevard
- Minor Arterial / Major Collector
- Other Collector
- City Limits
- Sphere of Influence

Data Source: Fehr & Peers, 2005.

**Notes:**

1. Conceptual layout only
2. Revisions/additions to minor arterials and other collectors will occur during development review

TABLE 4.4-10 **NEEDED ROADWAY CLASSIFICATION UPGRADES**

| Roadway | Between | Existing Classification | Future Classification |
|---|---|---|---|
| Corral Hollow Rd | New Road So. of I-580 and I-580 EB ramp | County Road | Minor Arterial/ Major Collector |
| Eleventh St | McArthur Dr and Chrisman Rd | Minor Arterial/ Major Collector | Major Arterial/ Expressway/ Boulevard |
| Linne Rd | Corral Hollow Rd and Tracy Blvd | Minor Arterial/ Major Collector | Major Arterial/ Expressway/ Boulevard |
| Lammers Rd | So. of Valpico | Minor Arterial/ Major Collector | Major Arterial/ Expressway/ Boulevard |
| Larch Rd | Nagless Rd and Corral Hollow Rd | Collector | Minor Arterial/ Major Collector |

and 2030. Trip productions refer to trip origins which are calculated by travel demand models, mostly generated by residential units. These productions are then matched with attractions, which are trip destinations, usually found at commercial and employment locations.

As indicated in Table 4.4-12, total vehicular trip generation would nearly triple by the year 2030. This increase in vehicular trips is attributable to the projected growth in employment within the City of Tracy, which is expected to nearly double by 2030. Nearly 60 percent of the projected employee growth would occur in the area of retail and office uses, which generate more trips than industrial and warehousing uses.

A second factor contributing to the growth in trips is the increase in residential trips, although the percentage growth in households and population is less than employment. Concurrent with this increase in overall trips, there

TABLE 4.4-11 **NEEDED ROAD WIDENINGS BY 2030**

| Roadway | Between | Existing Lanes | Future Lanes |
|---|---|---|---|
| Byron | Patterson Pass and Grant Line Road | 2 | 4 |
| Corral Hollow Rd | S of I-580 and Schulte Rd | 2 | 4 |
| | Schulte Rd and Kavanagh | 4 | 6 |
| Eleventh St | Corral Hollow Rd and Alden Glen | 4 | 6 |
| | W. of I-205 Ramps and Lammers Rd | 4 | 6 |
| Grant Line Rd | Byron Rd and Lammers Rd | 2 | 6 |
| | Lammers Rd and Tracy Blvd | 4 | 6 |
| | McArthur Dr and Brichetto Rd | 2 | 4 |
| I-205 | Eleventh St and I-5 | 4 | 6 |
| Lammers Rd | Linne Rd and Eleventh St | 2 | 6 |
| | Grant Line Rd and Middle | 2 | 4 |
| Larch Rd | Naglee Rd and Tracy Boulevard | 2 | 4 |
| Linne Rd | Corral Hollow Rd and Tracy Blvd | 2 | 4 |
| | Tracy Blvd and Macarthur Dr. | 2 | 4 |
| McArthur Dr | Valpico Rd and No. of Schulte Rd | 2 | 4 |
| Middle | Lammers Rd and Naglee Rd | 2 | 4 |
| Schulte Rd | W. of Corral Hollow Rd and Tracy Blvd | 4 | 6 |
| Tracy Blvd | Linne Rd and Valpico Rd | 2 | 4 |
| Valpico Rd | Lammers Rd and McArthur Dr | 2 | 4 |

TABLE 4.4-12 **DAILY TRIP GENERATION RELATED TO TRACY LAND USE**

| Model Scenario | Trip Productions | Trip Attractions |
|---|---|---|
| Base (2003) | 277,400 | 250,000 |
| Proposed General Plan (2030) | 643,300 | 781,500 |

Source: Fehr & Peers, 2008.

would also be an increase in the amount of all peak hour trips that are internalized within the city. Under the proposed General Plan, 76 percent of the peak hour trips will be internalized.

As a result, while the number of vehicle trips generated in Tracy and its SOI would increase with the proposed General Plan, the Plan's land uses work to maintain the same percentage of those trips within the community as currently exist. This works to reduce the impact to regional roadways.

*i. Local Roadway Impacts*

With the development resulting from the proposed General Plan, traffic volumes would grow throughout the city and the levels of congestion would increase as well. In the existing urbanized areas of the city, this congestion would be moderated by selected improvements, such as the construction of Schulte Road as a parallel route to Eleventh Street and a proposed urban interchange at Eleventh Street and Lammers Boulevard. The impact of this increased congestion on the major intersections along these roadways is discussed below.

Roadways in other areas of the city are projected to operate at acceptable levels, with the roadway improvements discussed above. For instance, Lammers Road would have to be widened from two lanes to four and six lanes in sections to accommodate growth from developments such as Tracy Hills, Tracy Gateway, and other projects. Linne Road, Valpico Road, and MacArthur Drive are a few of the roadways which would have to be widened to provide

an acceptable level of service with the development in the city under the proposed General Plan. As a result, there would be a less than significant impact on local roadways.

*ii. Tracy Intersection Impacts*

Assuming the planned network improvements outlined above, in Figure 4.4-10, and Tables 4.4-10 and 4.4-11 are conducted, the traffic forecast for the proposed General Plan indicates that the City's level of service standards will be maintained except at the Eleventh Street/Corral Hollow Road and Eleventh Street/Lammers Road intersections.

In the case of the Eleventh Street/Corral Hollow Road intersection, there is a constrained right-of-way which may not allow for adequate at-grade physical improvements to improve the level of service to D or better. An urban interchange could provide additional capacity at this location. Construction of such an interchange would negatively impact the adjacent properties and would be inconsistent with the Community Character Element of the General Plan. As an alternative, Policy 2 under Objective CIR-1.3 allows individual locations to fall below the City's level of service standards in instances where the construction of physical improvements would be infeasible or would conflict with the character of the community. Since this intersection is constrained to the point of not allowing for adequate at-grade improvements, the resulting level of service would not result in a significant impact.

Further improvements at the Eleventh Street/Lammers Road intersection have been discussed. The City has several options, including a grade-separated interchange at this location that will be subject to further study pending approval of the final design to be selected for the I-205/Lammers Road interchange.

*iii. Regional Roadway Impacts*

The proposed General Plan, in conjunction with other cumulative development in the region and neighboring regions, would cause 2030 traffic levels to exceed level of service standards established by the County Congestion Man-

agement Agency for regional highways, as shown in Table 4.4-13, which would be considered a significant impact. As noted in the Existing Setting section, the San Joaquin County CMP has set LOS E (east of MacArthur Drive) and LOS F (west of Tracy Boulevard) as acceptable levels of service on I-205, while LOS D or better is the standard on other highways in the Tracy vicinity. Table 4.4-14 also outlines the percentage of existing and future traffic on these regional roadways that can be attributed to the City of Tracy.

Based on the information documented in Table 4.4-13, many of the regional roadway segments proximate to Tracy would operate at a deficient level. These regional roadways include I-5, I-205 and I-580.

A review of transportation plans such as the SJCOG RTP indicates that there are several proposed improvements that could improve the operation of the regional roadway system. However, these improvements are not funded and cannot be anticipated to be constructed prior to 2030. The widening of I-205 from the existing four to eight lanes adjacent to the City of Tracy has been identified as a Tier I improvement in the latest SJCOG RTP.

The General Plan does include some policies to help minimize the proposed project's impact on regional traffic congestion. For example, the General Plan is designed to help internalize trips by improving the existing jobs/housing imbalance, which currently results in a significant number of residents traveling outside of the city for employment. To improve the jobs/housing balance, the proposed General Plan works to increase the number of employees in Tracy over the next 20 years. The number of employees in the city is projected to increase by approximately 25,000 jobs, based on market trends of absorption rates for various land use types.

Concurrently, the number of residents within Tracy is expected to increase by less than 50 percent, mainly due to limitations imposed on residential growth by the GMO. Employment will be provided by projects such as Tracy Gateway, Tracy Hills, along Grant Line and Corral Hollow Roads, and additional development in the North East Industrial area. The additional

TABLE 4.4-13 **PEAK HOUR, PEAK-DIRECTION VOLUMES AND LEVEL OF SERVICE**

| Freeway | Segment | Direction | Existing Number of Lanes | Future Number of Lanes | Existing Volume, LOS | Proposed General Plan Volume, LOS, Percentage Change from Existing |
|---|---|---|---|---|---|---|
| I-205 | I-205/I-580 Diverge to Mountain House Parkway | EB | 3 | 4 | 6,300, **F** | 8,200, **E**, +30% |
| | | WB | 3 | 4 | 2,200, **B** | 3,300, **C**, +50% |
| | Mountain House Parkway/Eleventh Street | EB | 3 | 4 | 6,300, **F** | 8,500, **E**, +35% |
| | | WB | 3 | 4 | 2,500, **B** | 4,200, **C**, +68% |
| | Eleventh Street/Grant Line Road | EB | 2 | 4 | 4,800, **F** | 9,500, **F**, +98% |
| | | WB | 2 | 4 | 2,200, **C** | 4,800, **D**, +118% |
| | Grant Line Rd/Tracy Boulevard | EB | 2 | 4 | 4,900, **F** | 10,400, **F**, +112% |
| | | WB | 2 | 4 | 2,400, **C** | 5,000, **D**, +108% |
| | Tracy Blvd/MacArthur Dr | EB | 2 | 4 | 5,000, **F** | 10,800, **F**, +116% |
| | | WB | 2 | 4 | 2,300, **C** | 5,000, **D**, +117% |
| | MacArthur Drive/Junction of I-205 / I-5 | EB | 2 | 4 | 5,200, **F** | 10,200, **F**, +96% |
| | | WB | 2 | 4 | 2,400, **C** | 3,500, **C**, +46% |
| I-580 | Livermore Area (Vasco Road to SR 84) | EB | 4 | 4 | 10,100, **F** | 13,900, **F**, +38% |
| | Altamont Pass | EB | 4 | 4 | 8,000, **E** | 10,800, **F**, +35% |
| | Altamont Pass to I-205/I-580 Diverge | EB | 4 | 4 | 8,000, **E** | 10,800, **F**, +35% |
| | I-205/I-580 Diverge to Mountain House Parkway | EB | 2 | 2 | 1,900, **B** | 3,200, **D**, +68% |
| | Mountain House Parkway/Lammers Road | EB | 2 | 3 | 2,300, **B** | 4,900, **D**, +113% |
| | Corral Hollow Rd/Chrisman Rd. | EB | 2 | 2 | 2,300, **B** | 3,700, **E**, +61% |
| I-5 | 205 Interchange – North | EB | 4 | 6 | 6,000, **C** | 11,800, **E**, +97% |
| Altamont Pass Rd | East of Alameda/San Joaquin County Border | EB | 1 | 1 | 250, **A** | 950, **D**, +280% |
| Patterson Pass Rd | East of Alameda/San Joaquin County Border | EB | 1 | 1 | 200, **A** | 800, **E**, +300% |
| Tesla Road | East of Alameda/San Joaquin County Border | EB | 1 | 1 | 200, **A** | 600, **E**, +200% |
| Byron Road | West of Grant Line Road | EB | 1 | 1 | 350, **A** | 400, **C**, +14% |
| | | WB | 1 | 1 | 300, **A** | 500, **C**, +67% |

Notes:
1. Future level of service calculations assume a per-lane capacity of 2,200 per hour on freeway facilities. Level of service for other roadways determined using peak hour level of service information provided by Florida Department of Transportation (FDOT) directional level of service tables. Capacity based on definition of roadways as other major city/county roadways.
2. I-5, I-205, and I-580 Peak Hour data from Caltrans (2003)
3. Traffic counts on Altamont Pass Road, Patterson Pass Road, and Tesla Road estimated from daily counts.
Source: Fehr & Peers, 2008.

TABLE 4.4-14 **TRACY CONTRIBUTION TO TOTAL VOLUME**

| Freeway | Segment | Direction | Existing Volume, LOS | Future Volume, LOS | Existing Tracy Percentage | Future Tracy Percentage |
|---|---|---|---|---|---|---|
| I-205 | I-205/I-580 Diverge to Mountain House Parkway | EB | 6,300, **F** | 8,200, **E** | 47% | 29% |
| | | WB | 2,200, **B** | 3,300, **C** | 34% | 24% |
| | Mountain House Parkway /Eleventh Street | EB | 6,300, **F** | 8,500, **E** | 51% | 40% |
| | | WB | 2,500, **B** | 42,00, **C** | 37% | 44% |
| | Eleventh Street/Grant Line Road | EB | 4,800, **F** | 9,500, **F** | 31% | 42% |
| | | WB | 2,200, **C** | 4,800, **D** | 25% | 45% |
| | Grant Line Road/Tracy Blvd. | EB | 4,900, **F** | 10,400, **F** | 24% | 39% |
| | | WB | 2,400, **C** | 5,000, **D** | 24% | 42% |
| | Tracy Blvd/MacArthur Drive | EB | 5,000, **F** | 10,800, **F** | 24% | 42% |
| | | WB | 2,300, **C** | 5,000, **D** | 25% | 43% |
| | MacArthur Drive/Junction of I-205/I-5 | EB | 5,200, **F** | 10,200, **F** | 23% | 48% |
| | | WB | 2,400, **C** | 3,500, **C** | 27% | 26% |
| I-580 | Livermore Area (Vasco Road to SR 84) | EB | 10,100, **F** | 13,900, **F** | 41% | 29% |
| | Altamont Pass | EB | 8,000, **E** | 10,800, **F** | 41% | 30% |
| | Altamont Pass to I-205/I-580 Diverge | EB | 8,000, **E** | 10,800, **F** | 41% | 30% |
| | I-205/I-580 Diverge to Mountain House Parkway | EB | 1,900, **B** | 3,200, **D** | 29% | 41% |
| | Mountain House Parkway/ Lammers Road | EB | 2,300, **B** | 4,900, **D** | 22% | 53% |
| | Corral Hollow Road/ MacArthur Drive | EB | 2,300, **B** | 3,700, **E** | 8% | 26% |
| I-5 | 205 Interchange - North | EB | 6,000, **C** | 11,800, **F** | 27% | 46% |
| Altamont Pass Road | East of Alameda / San Joaquin County Border | EB | 250, **A** | 950, **D** | N/A | 33% |
| Patterson Pass Road | East of Alameda / San Joaquin County Border | EB | 200, **A** | 800, **E** | N/A | 48% |
| Tesla Road | East of Alameda/San Joaquin County Border | EB | 200, **A** | 600, **E** | N/A | 16% |
| Byron Road | West of Grant Line Road | EB | 350, **A** | 400, **C** | 71% | 34% |
| | | WB | 300, **A** | 500, **C** | 63% | 42% |

Notes:
1. 2030 Scenario assumes widening of I-205 from 2 to 4 lanes in each direction
2. Existing contribution on Altamont Pass Road, Patterson Pass Road, and Tesla Road cannot be estimated based on limited available data

Source: Fehr & Peers, 2008.

employment would improve the jobs/housing balance and internalize more trips within the city rather than forcing commuters on the regional freeways. As a result, additional Altamont travel generated by Tracy between 2003 and 2030 will be less than Tracy's total trip generation growth. However, the additional employment growth is not sufficient to fully internalize all new trips associated with the proposed General Plan. For example, new trips from Tracy are responsible for approximately 29 percent of the projected growth in eastbound traffic on I-580 west of Tracy. While there will be additional trips from Tracy traveling through the Altamont Pass, Tracy's role in Altamont Pass traffic will decline over the next twenty years. As a percentage of total traffic, Tracy's contribution to traffic on I-580 through the Altamont will decline from about 40 percent in 2003 to about 30 percent in 2030.

A strategy that is already included in the City's Roadway Master Plan that would help reduce regional freeway impacts is the construction of a parallel or reliever route along I-205. The current Roadway Master Plan identifies such a route along the northern boundary of the city. This has been removed from the General Plan due to alternate routes being studied by SJCOG. Analysis completed for the proposed project indicates that such an improved east-west roadway would divert approximately 1,000 peak hour, peak direction vehicle trips from I-205 in the section between Tracy Boulevard and MacArthur Drive. This figure is equal to one-third of the traffic that the proposed General Plan growth would add to this freeway segment. SJCOG is in the process of evaluating alternate routes for I-205 relief.

However, while this parallel route would reduce peak hour traffic on I-205 by 10 percent, improve regional connectivity, and offset about one-third of Tracy's 2030 impacts on I-205, it would not fully mitigate traffic impacts on I-205. The sections of I-205 adjacent to the City of Tracy are projected to operate at LOS F and the projected reduction in volume would not improve the level of service to acceptable levels.

Finally, another approach would be to contribute to a regional or subregional fee program to facilitate the construction of regional freeway facili-

ties and transit facilities by leveraging money contributed by development projects in Tracy towards costly roadway improvements that are beyond the means of any one project or municipality to pay for entirely. There has been some agreement to participate in regional or interregional fee programs by several major development projects in Tracy. The Tracy Gateway project has agreed to contribute to the regional traffic impact fee program. The Tracy Hills project has agreed to contribute to an interregional fee program that supports freeways, major street improvements and transit.

SJCOG completed a nexus study for a Regional Transportation Impact Fee (RTIF) in 2005. This fee is worth a total of $5.4 billion and a list of projects has been identified. The time horizon for the fee is 25 years. The fee is assessed county-wide on new development.

Tracy is currently participating in the program. The General Plan policies contain text which supports participation in regional and sub-regional fee programs. One such policy is Policy 4, under Objective CIR-1.1, which states that the City should continue to pursue regional, countywide, and State funding to fund roadway projects, which may include a regional or countywide impact fee. Policy 5 under this same objective also encourages participation in regional funding decisions.

As a result, while the General Plan incorporates a range of features that work to help reduce the potential impact of future growth in Tracy to regional roadways, none of these approaches would reduce the potential impact to a less-than-significant level, so a significant and unavoidable impact to the following regional roadways would occur:

- I-205
- I-580
- I-5
- Patterson Pass Road
- Tesla Road

**2. Safety Impacts**

Tracy, through its roadway design standards, can directly influence the level of safety on public roadways. General Plan Policy 1 under Objective CIR-1.6 states that the City should design streets using context-sensitive design principals that enhance safety for all modes of travel. This would apply to all roads where there may be potential conflicts between vehicles, pedestrians, bicyclists, and trains. Since this policy indicates that the City would use safety as a prime criterion, the proposed General Plan does not substantially increase hazards due to a design feature and a significant impact does not occur.

The consideration of safety also extends to bicycles and pedestrians, which are addressed in the General Plan. The General Plan includes several goals and policies related to safety for pedestrians and bicyclists.

For example, Objective CIR-1.6 states that traffic safety will be maximized for automobile, transit, bicycle users and pedestrians. Additionally, Goal CIR-3 addresses safe and convenient bicycle and pedestrian travel. This goal details several policy statements designed to further bicycle and pedestrian safety. For example, Policy 1 and Policy 2 state that to the extent possible, the City shall separate vehicular traffic from bicycle and pedestrian traffic on higher-speed and higher-volume roadways, as well as separate bicycle and pedestrian users on high usage bicycle and pedestrian paths.

Based on the goals, objectives and policies included in the General Plan, the proposed project encourages the consideration of bicycle and pedestrian safety and would not create unsafe conditions for these modes. Therefore, a significant impact does not occur.

**3. Emergency Vehicle Access Impacts**

The adequacy of emergency vehicle access can be judged based on two criteria. First, the major roadways of the city should be able to convey vehicles at a reasonable level of congestion, which will allow emergency vehicles to travel throughout the city. Second, the roadway network should provide a

sufficient level of connectivity to allow emergency vehicles to access the destination through the most direct route.

The General Plan contains several policies relating to the level of congestion on major roadways and intersections. For example, Policy 1 under Objective CIR-1.3 sets the roadway and intersection level of service standards at LOS D for most intersections, which will ensure that vehicles are able to travel through most areas of the city with minimal delay, including emergency vehicles. While the level of service policy allows a small portion of the downtown area to operate at LOS E or lower, as well as areas around the freeway and areas that are limited by existing constraints, it is unlikely that the policy will dramatically increase the travel time for emergency vehicles throughout the city since the proposed General Plan also includes policies to ensure multiple access points, as discussed below.

The General Plan also includes policies relating to roadway connectivity. Policy 1 under Objective CIR-1.2 states that the City shall ensure that street and highway system results in a high level of connectivity, especially between residences and common local destinations. By encouraging roadway connectivity, the proposed General Plan would ensure that emergency vehicles would have multiple routes available to them, which would minimize response time.

Since the proposed General Plan includes policies that seek to maintain a high level of service (minimizing congestion) while encouraging connectivity, the proposed project would not result in inadequate emergency vehicle access and a significant impact would not occur.

**4. Parking Capacity**

As mentioned earlier in this section, the City has adopted on- and off-street parking standards in its Municipal Code. The proposed General Plan and Sustainability Action Plan do not alter the City's current parking regulations through any goals, objectives, policies and actions. As a result, development will be required to comply with existing regulations and provide adequate on-

site parking prior to approval. Therefore, implementation of the proposed project would not result in inadequate parking capacity.

**5. Relation to Adopted Regional Policies, Plans and Programs Supporting Alternative Transportation**

As mentioned before, there are several regional planning documents that address public transit in San Joaquin County. Both the SJCOG RTP and the San Joaquin County General Plan include a number of goals and policies related to alternative transportation, and both encourage the use of transit as an alternative mode throughout the region. For example, Objective III of the RTP is to provide for a transit system serving county residents that is safe, efficient and cost effective. A significant impact would occur if the proposed General Plan lacks goals and policies related to alternative transportation modes or has policy statements that directly contradict policy statements provided by the RTP or the San Joaquin County General Plan in regards to regional alternative modes of transportation.

Objective 1 under the Transit section of the County General Plan is to provide a public mass transit system that satisfies the demonstrated needs in San Joaquin County for safe, efficient, convenient, economical, and reliable transit service. The first policy under this objective states that the County would promote public mass transit as an alternative to the automobile. The Bicycle section indicates that a primary objective is to provide a countywide system of bicycle facilities for safe and convenient transportation and recreation.

The proposed General Plan includes a range of policy direction in regards to alternative transportation modes, which do not conflict with County-wide policy statements. The proposed General Plan has goals, objectives, policies and action relating to bicyclists, pedestrians and public transit. For example, Objective CIR-3.1 and its subordinate policies and actions work towards achieving a comprehensive and safe system of citywide bikeways and pedestrian facilities. In addition, Objective CIR-4.1 is aimed at promoting public transit as an alternative to the automobile. Supporting this objective are sev-

eral policies and actions that work to promote transit use through cooperation with other service providers, funding, and project design.

Since the proposed General Plan and Sustainability Action Plan do not alter the City's current policy statements supportive of alternative transportation modes, which are consistent with policy statements in other regional adopted planning documents, it can be concluded that the proposed General Plan and Sustainability Action Plan do not conflict with adopted regional policies and plans regarding alternative transportation, and thus have a less than significant impact.

**6. Impacts to Air Traffic Patterns**

The proposed General Plan was designed to comply with the Land Use Plan (1994, as amended in 1998) for the Tracy Municipal Airport. For example, Objective LU-6.3 ensures that development near the Tracy Municipal Airport is compatible with airport uses and conforms to safety requirements. Since the proposed General Plan would not allow incompatible development to occur around the airport, implementation of the proposed General Plan and Sustainability Action Plan would not alter current plans related to operations of the Tracy Municipal Airport nor air traffic in general, and no significant impact would occur.

### *D. Impacts and Mitigation Measures*

**Impact CIR-1:** The General Plan incorporates a range of features to help reduce the potential impact of future growth on regional roadways. However, traffic levels along regional roadways listed below will increase, creating a significant and unavoidable impact.

- I-205
- I-580
- I-5
- Patterson Pass Road
- Tesla Road

No mitigation measures have been identified for this impact. Therefore, it is *significant and unavoidable.*

# 4.14 NOISE

This chapter discusses the existing noise environment in Tracy and analyzes the potential impacts of the proposed General Plan and Sustainability Action Plan on the Tracy noise environment. To provide context for the discussion, the section begins with an explanation of what noise is and existing noise regulation. A noise study was prepared by Illingworth & Rodkin, Inc. to prepare this section.

## *A. Existing Conditions*

### 1. Measurement of Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 4.14-1.

TABLE 4.14-1 **DEFINITIONS OF ACOUSTICAL TERMS**

| Term | Definitions |
|---|---|
| Decibel, dB | A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter). |
| Frequency, Hz | The number of complete pressure fluctuations per second above and below atmospheric pressure. |
| A-Weighted Sound Level, dBA | The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise. |
| L01, L10, L50, L90 | The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period. |
| Equivalent Noise Level, Leq | The average A-weighted noise level during the measurement period. |
| Community Noise Equivalent Level, CNEL | The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am. |
| Day/Night Noise Level, $L_{dn}$ | The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am. |
| Lmax, Lmin | The maximum and minimum A-weighted noise level during the measurement period. |
| Ambient Noise Level | The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location. |
| Intrusive | That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level. |

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 4.14-2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called Leq. The most common averaging period is hourly, but Leq can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The Day/Night Average Sound Level, $L_{dn}$, is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

TABLE 4.14-2 **TYPICAL SOUND LEVELS**

| Noise Generators (At a Given Distance from Noise Source) | A-Weighted Sound Level in Decibel | Noise Environments | Subjective Impression |
|---|---|---|---|
| | 140 | | |
| Civil defense siren (100 feet) | 130 | | |
| Jet take-off (200 feet) | 120 | | Pain threshold |
| | 110 | Rock music concert | |
| Diesel pile drive (100 feet) | 100 | | Very loud |
| Freight cars (50 feet) | 90 | Boiler room Printing press plant | |
| Pneumatic drill (50 feet)<br>Freeway (100 feet)<br>Vacuum cleaner (10 feet) | 80<br><br>70 | In kitchen with garbage disposal running | Moderately loud |
| | 60 | Data processing center | |
| Light traffic (100 feet)<br>Large transformer (200 feet) | 50 | Department store | |
| | 40 | Private business office | Quiet |
| Soft whisper (5 feet) | 30 | Quiet bedroom | |
| | 20 | Recording studio | |
| | 10 | | Threshold of hearing |

## 2. Effects of Noise

This section discusses several effects of noise including hearing loss, sleep and speech interference and annoyance.

### a. Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise, but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard, which is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

### b. Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA $L_{dn}$.

The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57 to 62 dBA $L_{dn}$ with open windows and 65 to 70 dBA $L_{dn}$ if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to

70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed; those facing major roadways and freeways typically need special glass windows.

c. Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The $L_{dn}$ as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed.

There continues to be disagreement about the relative annoyance of noise from aircrafts and roadways. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 55 dBA $L_{dn}$. At an $L_{dn}$ of about 60 dBA, approximately two percent of the population is highly annoyed. When the $L_{dn}$ increases to 70 dBA, the percentage of the population highly annoyed increases to about 12 percent of the population. There is, therefore, an increase of about one percent per dBA between an $L_{dn}$ of 60 to 70 dBA. Between an $L_{dn}$ of 70 to 80 dBA, each decibel increase results in about a two percent increase in population that is highly annoyed. People appear to respond more adversely to aircraft noise. When the $L_{dn}$ is 60 dBA, approximately ten percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about two percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a three percent increase in the percentage of the population highly annoyed.

**3. Regulatory Framework**

a. Federal Highway Administration and Caltrans Policies

The Federal Highway Administration (FHWA) provides procedures and criteria for noise assessment studies for federal highway projects. It requires that noise abatement measures be considered on all major transportation projects if the project will cause a significant increase in noise levels, or if projected noise levels approach or exceed the noise abatement criteria level for activities occurring on adjacent lands. The California Department of Transportation (Caltrans) utilizes similar procedures and criteria.

The FHWA Noise Assessment Criteria for various land use ratings are given in Table 4.14-3. These noise criteria are assigned to both exterior and interior activities. The FHWA identifies a traffic noise impact when the predicted traffic noise levels approach or exceed the noise abatement criteria. If these criteria sound levels are predicted to be approached or exceeded during the noisiest 1-hour period, noise abatement measures must be considered and, if found to be reasonable and feasible, they must be incorporated as part of a given project. Following the Caltrans protocol, a traffic noise impact will occur when predicted noise levels approach or exceed criteria sound levels within 1 dBA.

b. Federal Transit Administration (FTA) Policies

Groundborne vibration impacts are typically associated with fast moving railroad operations, and large industrial equipment. The Federal Transit Administration (FTA) of the U.S. Department of Transportation has developed vibration impact assessment criteria for evaluating vibration impacts associated with rapid transit projects. These criteria for groundborne vibration impacts on occupants inside buildings are shown in Table 4.14-3, and are based on rms average vibration levels calculated over a 1 second period to relate to average, maximum, vibration levels experienced by humans. Note that there are criteria for frequent events (more than 70 events per day) and infrequent events (less than 70 events per day).

TABLE 4.14-3 **FEDERAL NOISE ABATEMENT CRITERIA**

| Rank | A-Weighted Sound Level dBA | Suitable Locations |
|---|---|---|
| A | 57 exterior | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to serve its intended purpose. |
| B | 67 exterior | Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals. |
| C | 72 exterior | Developed lands, properties, or activities not included in Categories A or B above. |
| D | --- | Undeveloped lands. |
| E | 52 interior | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums. |

Source: Federal Highway Administration, 1982.

The FTA criteria are based primarily on experience with passenger train operations, such as rapid transit and commuter rail systems. The main difference between passenger and freight operations is the time duration of individual events, a passenger train lasts few seconds whereas a long freight train may last several minutes, depending on speed and length. Although the criteria are based on shorter duration events reflected by passenger trains, they are used in this assessment to evaluate the potential of vibration annoyance on the site due to large freight trains as well. It should also be noted that the FTA criteria limits contained in Table 4.14-4 are not appropriate for evaluating the potential of building structural or cosmetic damage due to train operations. It is extremely rare that train operations can cause any such damage except in the case of weakened structures or historic buildings. Even in such cases, structural damage is unlikely unless the buildings are located extremely close to the tracks.

TABLE 4.14-4 **GROUNDBORNE VIBRATION IMPACT CRITERIA**

| Land Use Category | Groundborne Vibration Impact Limits (Re 1,$\mu$inch/sec., rms) | |
|---|---|---|
| | Frequent Events | Infrequent Events |
| Category 1: Buildings where low ambient is essential for interior operations | 65 VdB | 65 VdB |
| Category 2: Residences and buildings where people normally sleep | 72 VdB | 80 VdB |
| Category 3: Institutional land uses with primarily daytime uses | 75 VdB | 83 VdB |

Source: U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, April 1995, DOT-T.

c. Tracy Noise Ordinance

The City of Tracy has adopted a quantitative noise ordinance. The Noise Control Ordinance is contained in Article 9 of the City's Municipal Code. The Ordinance establishes allowable noise level limits based on the zoning district. The maximum allowable noise level limit is 55 dBA in residential districts, 65 dBA in commercial districts, 75 dBA in industrial/aggregate mining and agricultural districts. When property lines form the joint boundary of two district zones, the ordinance states that the sound level limit shall be the arithmetic mean of the limit applicable to each of the two zones. The Ordinance sets forth procedures for extensions, variations, exceptions and identifies specific prohibitions regarding noise within the city.

**4. Existing Noise Sources in Tracy**

The most significant source of community noise in Tracy is vehicular traffic on Interstate 205 (I-205) and the local street network, with I-205 having the highest noise levels. Railroad trains intermittently generate noise levels that are significant along the railroad tracks. Localized and intermittent noise impacts occurr as a result of the Altamont Commuter Express train on the

southern side of the city. $L_{dn}$ noise levels exceed 60 dBA within approximately 260 feet of the primary freight and commuter railroad tracks. Moreover, train warning whistles can generate maximum noise levels of approximately 105 dBA at 100 feet and are audible throughout the community.

Noise is also generated on individual parcels whether industrial, commercial or residential. These noise sources are regulated by the City's Noise Ordinance and so do not generally negatively affect the overall noise environment throughout the community.

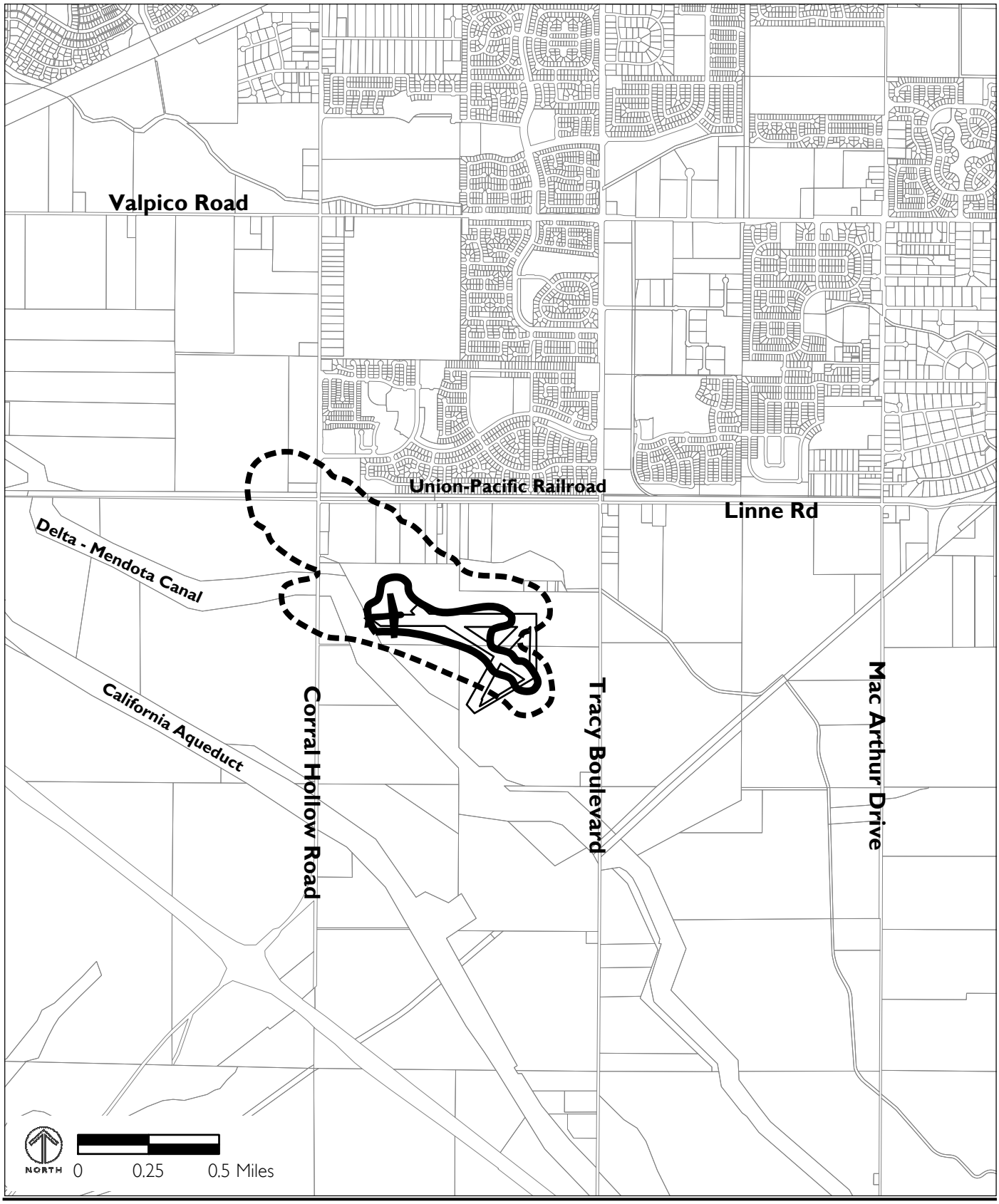
The Tracy Municipal Airport, located in the southern portion of the city between Tracy Boulevard and Corral Hollow Road, is a source of community noise in its vicinity. General aviation aircraft using the Tracy Airport contribute to intermittent noise levels in Tracy. The airport currently has about 50,000 annual airport operations.[1] These are comprised mostly of single-engine light aircraft (maximum gross weight 12,000 lbs.), some twin-engine aircraft, and occasional corporate jets. There are no jets currently based at the airport. Other activities at the airport include two hot air balloon companies, Ultralights, and an area where aerobatic flight is allowed.

Aircraft noise in California is described in terms of the community noise equivalent level (CNEL). As mentioned previously, CNEL is approximately equivalent to the day/night average noise level ($L_{dn}$) but includes a 5 dB weighting factor for the evening hours (7:00 p.m. to 10:00 p.m.). The San Joaquin County 2020 General Plan contains CNEL noise contours for Tracy Airport, which are shown in Figure 4.14-1.

**5. Noise Measurements**

In order to document Tracy's noise environment, both long- and short-term, noise measurements were taken at locations throughout the city. This section documents the results of those measurements.

[1] Telephone conversation with Rod Buchanan, Deputy Department Director, Parks and Community Services Department, October 2003.




Source: San Joaquin County Airport Land Use Plan

**FIGURE 4.14-1**

65 dBCNEL
60 dBCNEL

**TRACY MUNICIPAL AIRPORT NOISE CONTOURS**

a. Long-Term Noise Measurements

Long-term noise levels were monitored at ten locations in Tracy over a period of two and three days in June of 2003. Noise levels were monitored by Illingworth & Rodkin, Inc. at two locations along I-205 previously during preparation of the Noise Study Report for improvements to the I-205 freeway. The noise measurement locations are shown on Figure 4.14-2. The measured data are summarized in Table 4.14-5 and the data measured at the twelve long-term sites are summarized in Figures 1 through 12 of Appendix B. The following discussion summarizes the long-term noise measurements.

- *Location LT-1 – Adjacent to Altamont Commuter Express Line and West Linne Road*. Location LT-1 was selected to represent the noise exposure in the residential neighborhood along English Oak Court which adjoins the Altamont Commuter Express Railroad Line. The measurement location was made about 50 feet behind the 12 to 14 foot high sound wall that currently separates the neighborhood from the railroad track. The data, shown in Figure 1 of Appendix B, shows the measured noise level was 65 dBA $L_{dn}$. Maximum noise levels from individual railroad train passbys ranged from approximately 85 to 100 dBA.

- *Location LT-2 – Altamont Commuter Express Line near Chrisman Road*. Noise levels approximately 35 feet from the ACE line near Chrisman Road were dominated by railroad train traffic on the same line. This location was selected to measure the noise level along this train track where no sound wall exists. The measured noise level was 73 dBA $L_{dn}$. Maximum noise levels from railroad train events were in the range of 85 to 104 dBA. The data are shown in Figure 2 of Appendix B.

- *Location LT-3 – Chrisman Road near Cabe Road*. This noise measurement location was approximately 120 feet from the centerline of Chrisman Road near Cabe road and was selected to measure vehicular traffic noise along Chrisman Road. The measured noise level was 70 dBA $L_{dn}$. The hourly average noise levels typically ranged from 60 dBA during the nighttime to 70 dBA during the peak hour. Background noise levels

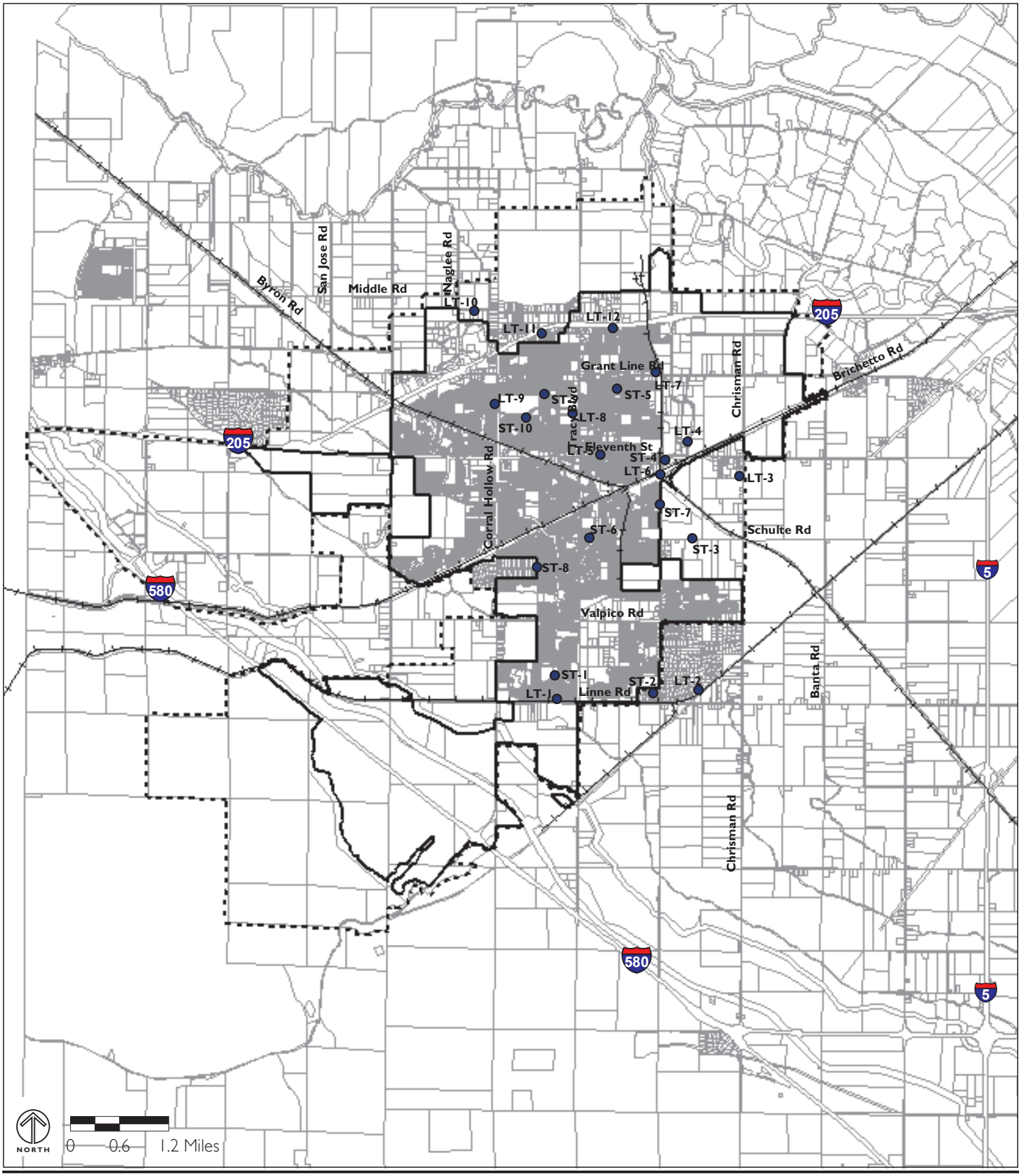



**FIGURE 4.14-2**

● LT Long-Term Measurement Location
ST Short-Term Measurement Location

City Limit

Proposed Sphere of Influence

## NOISE MEASUREMENT LOCATIONS

**CITY OF TRACY**
GENERAL PLAN
DRAFT SUPPLEMENTAL EIR

TABLE 4.14-5 **SUMMARY OF NOISE MONITORING**

| Site | Location | Date | Time | $L_{eq}$ | L(1) | L(10) | L(50) | L(90) | $L_{dn}$ |
|---|---|---|---|---|---|---|---|---|---|
| **Long-Term Measurements** | | | | | | | | | |
| LT-1 | Residential Land Uses at South End of English Oak Court Adjacent to Altamont Commuter Express Line and West Linne Rd. | 6/2/03 to 6/4/03 | 17:00 to 10:00 | -- | -- | -- | -- | -- | **65** |
| LT-2 | ~ 35 feet from the Altamont Commuter Express Line near Chrisman Rd. | 6/2/03 to 6/4/03 | 17:00 to 10:00 | -- | -- | -- | -- | -- | **73** |
| LT-3 | ~ 120 feet from the Centerline of Chrisman Rd. | 6/2/03 to 6/4/03 | 18:00 to 11:00 | -- | -- | -- | -- | -- | 70 |
| LT-4 | ~ 80 feet from the Centerline of North MacArthur Rd. | 6/4/03 to 6/6/03 | 12:00 to 13:00 | -- | -- | -- | -- | -- | **66** |
| LT-5 | ~ 90 feet from the Centerline of Eleventh St. at Wall Rd. | 6/4/03 to 6/6/03 | 13:00 to 13:00 | -- | -- | -- | -- | -- | **71** |
| LT-6 | 6th St. Railroad Junction | 6/4/03 to 6/6/03 | 13:00 to 14:00 | -- | -- | -- | -- | -- | **72** |
| LT-7 | ~ 50 feet from the Centerline of Grant Line Rd. | 6/4/03 to 6/6/03 | 16:00 to 16:00 | -- | -- | -- | -- | -- | **75** |
| LT-8 | ~ 80 feet from the Centerline of Tracy Blvd at Dr. Powers Park | 6/6/03 to 6/9/03 | 15:00 to 14:00 | -- | -- | -- | -- | -- | 70 |
| LT-9 | ~ 190 feet from the Centerline of Corral Hollow Rd. | 6/6/03 to 6/9/03 | 16:00 to 13:00 | -- | -- | -- | -- | -- | **69** |
| LT-10 | West Larch Rd. east of Naglee Rd. | 6/6/03 to 6/9/03 | 16:00 to 13:00 | -- | -- | -- | -- | -- | **69** |
| LT-11 | 11240 Clover Rd. adjacent to I-205 | 10/31/00 to 11/1/00 | 10:00 to 10:00 | -- | -- | -- | -- | -- | **82** |
| LT-12 | Rear Yard of 245 Hawthorne Dr. adjacent to I-205 (shielded by sound wall) | 1/29/01 to 1/30/01 | 14:00 to 14:00 | -- | -- | -- | -- | -- | **72** |
| **Short-Term Measurements** | | | | | | | | | |
| ST-1 | ~ 70 feet from the Centerline of Whispering Wind Rd at Adams Park | 6/3/03 | 15:14 to 15:24 | 58 | 68 | 62 | 53 | 47 | **60** |
| ST-2 | ~ 130 feet from the Centerline of MacArthur Rd. | 6/3/03 | 15:40 to 15:50 | 59 | 70 | 63 | 55 | 50 | **63** |

TABLE 4.14-5 **SUMMARY OF NOISE MONITORING** (CONTINUED)

| Site | Location | Date | Time | $L_{eq}$ | L(1) | L(10) | L(50) | L(90) | $L_{dn}$ |
|---|---|---|---|---|---|---|---|---|---|
| ST-3 | ~ 50 feet from the Centerline of East Schulte Rd. | 6/3/03 | 16:08 to 16:18 | 62 | 73 | 66 | 54 | 48 | **65** |
| ST-4 | ~ 100 feet from the Centerline of MacArthur Rd. near 11th St. | 6/4/03 | 13:26 to 13:36 | 63 | 72 | 67 | 60 | 55 | **67** |
| ST-5 | ~ 80 feet from the Centerline of Holly Dr. | 6/4/03 | 13:50 to 14:00 | 59 | 68 | 63 | 56 | 49 | **63** |
| ST-6 | ~ 115 feet from the Centerline of South Central Ave. | 6/4/03 | 14:16 to 14:26 | 57 | 63 | 60 | 56 | 51 | **60** |
| ST-7 | ~ 160 feet from the Centerline of Mac Arthur Rd. | 6/4/03 | 14:40 to 14:50 | 58 | 66 | 61 | 56 | 49 | **61** |
| ST-8 | Rear Yard of 460 West Schulte Rd. | 6/4/03 | 15:03 to 15:13 | 51 | 57 | 53 | 51 | 49 | **54** |
| ST-9 | ~ 100 feet from the Centerline of Lincoln Blvd. | 6/6/03 | 16:37 to 16:47 | 60 | 70 | 64 | 58 | 52 | **62** |
| ST-10 | ~ 70 feet from the Centerline of West Lowell Ave. | 6/6/03 | 16:53 to 17:03 | 59 | 67 | 62 | 57 | 52 | **60** |

ranged from 45 to 55 dBA. The data are shown in Figure 3 of Appendix B.

- *Location LT-4 – North McArthur Road.* Noise levels were measured approximately 80 feet from the centerline of North McArthur Road to characterize the noise exposure levels along North McArthur Road. The noise measurement location was located between Stoneridge Road and Eleventh Street. The measured data are shown on Figure 4 of Appendix B. The measured noise level was 66 dBA $L_{dn}$. Hourly average noise levels typically range from 55 dBA to 65 dBA. Background noise levels range from about 45 to 55 dBA.

- *Location LT-5 – Corner of Eleventh Street and Wall Road*. The noise environment was dominated by heavy vehicular traffic on Eleventh Street. The measured noise level was 71 dBA $L_{dn}$. The noise measurement data are shown in Figure 5 of Appendix B. Hourly average noise levels ranged from about 55 dBA Leq to 75 dBA Leq. Background noise levels dropped to about 40 dBA during the middle of the night but increased to about 60 dBA during the daytime due to the heavy traffic volume.

- *Location LT-6 – Sixth Street Railroad Junction.* The noise environment at Location LT-6 was dominated by railroad train traffic at the junction of four railroads. The measured noise level was 72 dBA $L_{dn}$. The noise measurement data are shown in Figure 6 of Appendix B. Maximum noise levels from single railroad train events ranged from about 85 dBA to 110 dBA at the monitoring location.

- *Location LT-7 – Grant Line Road near "E" Street.* Location LT-7 was approximately 50 feet from the centerline of Grant Line Road east of "E" Street across from a kitchen and bath cabinet store and the Port Oasis Trailer Park. The measured noise level was 75 dBA Leq. Grant Line Road traffic dominated the noise environment. The noise measurement data are shown in Figure 7 of Appendix B. Hourly average noise levels range from about 70 to 75 dBA $L_{dn}$ during the daytime down to about 60 dBA Leq in the middle of the night. Background noise levels range from

about 55-60 dBA during the daytime down to about 45 dBA in the middle of the night.

- *Location LT-8 – Tracy Boulevard at Dr. Powers Park*. Measurement Location LT-8 was approximately 80 feet from the centerline of Tracy Boulevard at Dr. Powers Park and was selected to characterize noise levels along Tracy Boulevard. The measured noise level was 70 dBA $L_{dn}$. Hourly average noise levels typically ranged from about 65 to 70 dBA Leq during the daytime and drop to about 55 dBA Leq in the middle of the night. Background noise levels were typically 50 to 60 dBA during the daytime dropping to as low as 35 to 40dBA in the middle of the night. The noise measurement data are shown in Figure 8 of Appendix B.

- *Location LT-9 – Corral Hollow Road.* Noise measurements at Location LT-9 was approximately 190 feet from the centerline of Corral Hollow Road and was selected to characterize the noise exposure along Corral Hollow Road. The measured noise level was 69 dBA $L_{dn}$. Hourly average noise levels ranged from about 65 to 70 dBA Leq during the daytime and drop to about 50 to 55 dBA Leq at night. Background noise levels were typically 50 to 60 dBA during the daytime dropped to about 40 dBA in the middle of the night. The noise measurement data are shown in Figure 9 of Appendix B.

- *Location LT-10 – West Larch Road East of Naglee Road.* Noise measurements approximately 16 feet from the West Larch Road centerline east of Naglee Road were made to characterize the noise environment out in the potentially developing area of Tracy. The noise measurement location was immediately adjacent to the roadway edge where high speed local traffic substantially elevated the noise level. The measured noise level was 69 dBA $L_{dn}$. Vehicular traffic very close to the microphone resulted in the relatively high $L_{dn}$ adjacent to a relatively low volume roadway. Background noise levels were typically 50 to 55 dBA during the daytime and 40 to 45 dBA at night. The noise measurement data are shown in Figure 10 of Appendix B.

- *Location LT-11 – I-205 at 11240 Clover Road.* This location was selected to characterize existing noise levels along I-205 where no noise mitigation currently exists. The measured noise level was 82 dBA $L_{dn}$. This is a severe noise environment demonstrating the extent of freeway traffic noise in the I-205 corridor. The noise measurement data are shown in Figure 11 of Appendix B. The data show a tight range of noise levels from the minimum sound level to the maximum sound level which is typical of freeway traffic noise. Hourly average noise levels do not vary much day or night due to heavy truck traffic at night and heavy total traffic during the daytime. The range in hourly average noise levels is between 80 dBA during the daytime and 74 dBA at night. Minimum noise levels are typically in the range of 70 to 75 dBA, although noise levels do drop to between 55 and 65 dBA during the middle of the night.
- *Location LT-12 – I-205 Noise Behind Existing Sound Wall at 245 Hawthorne Drive.* Noise levels were monitored at this location to determine the noise level behind an existing sound wall along I-205. The measured noise level was 72 dBA $L_{dn}$. The range of noise levels was again narrow with typical hourly average noise levels during the daytime in the range of 65-70 dBA Leq and with noise levels dropping to about 62 dBA Leq in the middle of the night. Background noise levels similarly were between 60 and 65 dBA during the daytime dropping to a low of between 50 and 55 dBA in the middle of the night. The noise measurement data are shown in Figure 12 of Appendix B.

b. Short-Term Spot Measurements

Short-term spot measurements were made at ten locations throughout Tracy in June of 2003 to characterize typical daytime noise levels and to collect traffic and noise data to be used subsequently in the computation of traffic noise contours for the General Plan. The noise measurement locations are shown in Figure 4.14-2. The data in Table 4.14-3 also shows the estimated $L_{dn}$ for the short-term spot measurements based on correlations with long-term measurements nearby. It can be seen that average noise levels (Leq) range from about 51 dBA in a quiet rear yard up to 63 dBA along McArthur Road. Vehicular traffic on the street network was the dominant noise source during

measurements. There were contributions from local neighborhood noise, a tractor at a rural location (ST-3), and a train was heard at Location ST-4 along McArthur Road near Eleventh Street which generated a maximum level of 68 dBA. General aviation aircraft at Location ST-5 generated a maximum level of 55 dBA but automobiles and motorcycles were typically 10 dBA louder. At the Schulte Road location (ST-8) distant traffic, a distant aircraft, wind in the vegetation, and crows were all audible contributing to a quiet rural noise environment in the backyard of this home.

**6. Vibration**

Railroads in Tracy are a source of ground-borne vibration. Although vibration levels were not measured as part of the General Plan process, measured data and previous experience with vibration generated by railroad trains shows that ground-borne vibration levels are typically greater than the FTA criteria for infrequent events (80 VdB) at a distance of about 100 feet or less from the centerline of the railroad tracks.

## *B. Standards of Significance*

The City of Tracy's General Plan and Sustainability Action Plan would create a significant noise impact if they would:

- Cause the Ldn at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level;
- Cause the $L_{dn}$ at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable";
- Cause new noise levels to exceed the City of Tracy Noise Ordinance limits.
- Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, as identified by the FTA guidelines.
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, including the following:
  - Construction activities that cause noise levels to exceed an hourly average of 60 dBA Leq and exceed existing ambient noise levels by 5 dBA or more at a sensitive receiver, and last more than one construction season, would be considered to cause a substantial temporary or periodic increase in ambient noise.
  - Noise-sensitive uses proposed within the airport's 60 CNEL noise contour or exposed to excessive maximum noise levels from aircraft overflights would cause a significant noise impact.
- Expose people residing or working in the project area to excessive aircraft noise levels.

### *C. Impact Discussion*

The following discussion provides an overview of changes in the noise environment and community noise exposure that could result from implementation of the General Plan and Sustainability Action Plan.

#### 1. Traffic Noise Increases

Vehicular traffic on existing roadways in Tracy would increase as development proceeds and the city's population increases. Traffic noise levels throughout Tracy were modeled to determine how changes in vehicular traffic volumes would affect traffic noise levels. Under the proposed General Plan and Sustainability Action Plan, noise levels would increase substantially (3 dBA $L_{dn}$ or greater) along major roadways throughout Tracy, including portions of I-205, I-580, Grant Line Road, Schulte Road, Valpico Road, Linne Road, Lammers Road, Corral Hollow Road, Tracy Boulevard, and MacArthur Drive. Other than Valpico Road and I-580, all significant increases would occur adjacent to existing noise sensitive areas.

Traffic on new roadways planned in the General Plan would also create noise increases of 3dB $L_{dn}$ or greater. These planned roadways include connections from I-205 to Byron, Lammers, and Grant Line Roads; a major arterial connecting Chrisman Road to I-205 and Arbor Avenue to the north; and several minor arterial and collector roadways at the east end of Tracy. Many of these roadways would be located adjacent to existing or new residential areas. New arterial roadways and interchanges are proposed to serve new development. New roadways would substantially increase the noise environment at receivers in the vicinity.

Policies in the proposed General Plan would ensure that the citizens of Tracy are protected from excessive noise levels. Figure 9-2 in the proposed General Plan outlines guidelines regarding land use compatibility for community noise environments. This information, in addition to the City's Noise Ordinance, shall be used to help determine whether impact from new projects will occur in the city as a result of the General Plan. The policies in Objective N-1.2 attempt to control excessive sources of noise in the city, including noise from roadways. Policy 1 directs the City to reduce traffic noise levels in existing residential areas through enforcement and structural improvements, to the extent that it is feasible. Policy 3 presents "quiet pavement" as a potential noise reduction strategy that could be utilized to reduce noise level increases resulting from General Plan development. Additionally, Objective N-1.3, Policies 1, 2, 3, and 5 ensure that noise impacts from new projects will be evaluated during the design review process and mitigated as a condition of project approval.

Although these proposed policies provide significance thresholds to be used in the evaluation of project impacts and criteria to ensure that new projects are evaluated properly, it is not likely that all traffic noise impacts resulting from the proposed General Plan will be adequately mitigated. Given the anticipated growth of the community and expected traffic noise level increases resulting from the project, the impact would be significant and unavoidable.

**2. Noise Exposure in New Development**

Under the proposed General Plan, new noise sensitive development is proposed throughout the city, and in some cases, in noisy areas. Distances to existing and future traffic noise contours along major Tracy roadways are shown in Table 4.14-6. This table, along with guidelines for land use compatibility relative to associated noise environments in the proposed General Plan Noise Element, Land Use Compatibility for Community Noise Environment, should be used as a guide by the City to determine where noise studies are needed. New residential land uses proposed within the 60 dBA $L_{dn}$ traffic noise contour would be exposed to noise levels exceeding those considered compatible with the proposed use. New noise-sensitive development proposed in the vicinity of railroads may also be exposed to noise levels incompatible with the proposed use.

The policies proposed to achieve Objective N-1.1 define appropriate exterior and interior noise levels for new land uses and require that measures be incorporated into all new development to attenuate exterior and/or interior noise levels to those considered normally acceptable for the land use. Specifically, Policy 3 states that all new single family residential development shall maintain a noise standard of 60 $L_{dn}$ for exterior noise in private use areas and Policy 6 states that all multi-family residential developments shall maintain a standard of 65 $L_{dn}$ for community outdoor recreation areas. Policy 5 states that all new residential projects shall maintain an interior standard of 45 $L_{dn}$. If the primary noise sources are train pass-bys, Policy 10 establishes a standard for outdoor noise levels in single and multi-family residential outdoor activity areas of 70 dBA $L_{dn}$.[2]

In areas where the existing noise level is above 60 $L_{dn}$, the proposed General Plan states that new residential projects shall be analyzed according to protocols in the California Building Code (Objective N-1.1, Policy 8). Further,

[2] A higher noise level is allowable because the day/night noise level ($L_{dn}$) is controlled by a relatively few number of train passbys that are disruptive outdoors only for short periods and weighted heavily by nighttime train passbys when there is no impact on outdoor activity areas.

TABLE 4.14-6 **GENERAL PLAN TRAFFIC NOISE CONTOURS**

| Roadway | Segment | Distance to Centerline (Feet) | Future $L_{dn}$ (dBA) | Noise Contour Distance from Roadway Centerline (Feet) | | |
|---|---|---|---|---|---|---|
| | | | | 70 $L_{dn}$ | 65 $L_{dn}$ | 60 $L_{dn}$ |
| I-205 | West of Eleventh Street | 150 | 85 | 1,610 | 3,470 | 7,490 |
| | Between Eleventh Street and Corral Hollow | 150 | 85 | 1,580 | 3,400 | 7,340 |
| | Between Corral Hollow and MacArthur Drive | 150 | 86 | 1,720 | 3,700 | 7,980 |
| | East of MacArthur Drive | 150 | 86 | 1,670 | 3,590 | 7,750 |
| I-580 | North of Corral Hollow | 150 | 80 | 680 | 1,470 | 3,160 |
| | South of Corral Hollow | 150 | 81 | 800 | 1,730 | 3,720 |
| Grant Line Road | West of Corral Hollow | 75 | 78 | 270 | 580 | 1260 |
| | East of Corral Hollow | 75 | 78 | 240 | 520 | 1120 |
| | East of Tracy Boulevard | 75 | 74 | 140 | 300 | 650 |
| | East of Chrisman Road | 75 | 74 | 140 | 310 | 670 |
| Eleventh Street | East of Lammers Road | 75 | 75 | 160 | 350 | 750 |
| | East of Corral Hollow | 75 | 74 | 140 | 300 | 650 |
| | East of MacArthur Drive | 75 | 74 | 130 | 280 | 610 |
| Schulte Road | West of Corral Hollow | 75 | 72 | 100 | 210 | 450 |
| | East of Corral Hollow | 75 | 71 | 90 | 190 | 410 |
| | East of Tracy Boulevard | 75 | 70 | 80 | 170 | 360 |
| | East of MacArthur Drive | 75 | 66 | -- | 90 | 200 |
| Valpico Road | East of Tracy Boulevard | 75 | 71 | 90 | 190 | 420 |
| | East of MacArthur Drive | 75 | 64 | -- | 10 | 30 |
| Linne Road | West of Corral Hollow | 75 | 69 | 70 | 140 | 310 |
| | East of Tracy Boulevard | 75 | 71 | 90 | 190 | 400 |
| Lammers Road | South of Grant Line Road | 75 | 73 | -- | 240 | 520 |

TABLE 4.14-6 **GENERAL PLAN TRAFFIC NOISE CONTOURS** (CONTINUED)

| Roadway | Segment | Distance to Centerline (Feet) | Future $L_{dn}$ (dBA) | Noise Contour Distance from Roadway Centerline (Feet) | | |
|---|---|---|---|---|---|---|
| | | | | 70 $L_{dn}$ | 65 $L_{dn}$ | 60 $L_{dn}$ |
| | South of Eleventh Street | 75 | 71 | 90 | 190 | 400 |
| | North of Valpico Road | 75 | 73 | 120 | 250 | 540 |
| Corral Hollow Road | South of Grant Line Road | 75 | 76 | 200 | 420 | 910 |
| | South of Eleventh Street | 75 | 76 | 180 | 390 | 840 |
| | South of Schulte Road | 75 | 72 | 100 | 210 | 460 |
| | North of Valpico Road | 75 | 71 | 80 | 180 | 390 |
| Tracy Boulevard | North of Grant Line Road | 75 | 70 | 80 | 170 | 360 |
| | South of Grant Line Road | 75 | 71 | 80 | 180 | 390 |
| | North of Eleventh Street | 75 | 69 | 70 | 150 | 310 |
| | South of Eleventh Street | 75 | 71 | 90 | 200 | 430 |
| | North of Schulte Road | 75 | 70 | 80 | 170 | 360 |
| | South of Schulte Road | 75 | 71 | 80 | 180 | 390 |
| | South of Valpico Road | 75 | 68 | 60 | 130 | 270 |
| MacArthur Drive | South of I-205 | 75 | 71 | 80 | 180 | 380 |
| | South of Grant Line Road | 75 | 72 | 100 | 220 | 470 |
| | South of Eleventh Street | 75 | 68 | 60 | 130 | 270 |
| | North of Valpico Road | 75 | 68 | 50 | 120 | 250 |
| | South of Valpico Road | 75 | 73 | 110 | 240 | 520 |
| Chrisman Road | South of Eleventh Street | 75 | 72 | 110 | 230 | 510 |
| | South of Schulte Road | 75 | 72 | 110 | 230 | 510 |

Objective N-1.1, Policy 9 states that measures to attenuate exterior and/or interior noise levels to acceptable levels shall be incorporated into all developments. Further, the City shall not allow new noise sensitive land uses in areas where measures cannot be implemented to reduce noise levels to normally acceptable levels (Objective N-1.1, Policy 1).

Finally, policies under Objective N-1.3 would reduce the impacts of introducing noise sensitive uses in noisy areas by considering noise issues in the development review process and requiring that significant noise impacts be mitigated. Specifically, Policy 6 states that the City will seek to reduce impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g., residences) are sited at least 100-feet from the centerline of the railroad tracks whenever feasible. These policies would adequately reduce noise impacts to a less-than-significant level.

**3. Incompatible Land Uses**

New manufacturing, commercial, office, or other noise-generating uses to be developed under the General Plan could substantially increase noise levels at existing noise-sensitive land uses or could expose receivers to noise levels that exceed the City's Noise Ordinance. Typical noise conflicts would be caused by noise sources such as outdoor dining areas or bars, mechanical equipment, outdoor maintenance areas, truck loading docks, and parking lots. Development under the proposed General Plan would introduce new noise-generating sources adjacent to existing noise-sensitive areas and new noise-sensitive uses adjacent to existing noise-generating sources.

However, new projects developed under the proposed General Plan would be subject to the City's Noise Ordinance, ensuring that existing residences and noise-sensitive land uses would not be exposed to excessive noise. In addition, the Land Use Compatibility for Community Noise Environment guidelines presented in Figure 9-2 of the proposed General Plan would be used by the City to evaluate noise-sensitive land use proposals in the vicinity of known noise sources.

Additionally, the policies proposed to achieve Objective N-1.1 and Objective N-1.3 would reduce the impacts of the encroachment of noise sensitive uses adjacent to noise-producing land uses. The proposed General Plan includes policies that would reduce the impacts of new noise generating uses on existing noise sensitive uses by requiring that such development projects be evaluated for potential noise impacts and conflicts as part of the development review process and mitigated to minimize noise impacts (Objective N-1.2, Policy 2; Objective N-1.3, Policies 1 through 6). Objective N-1.3, Policy 5 provides suggestions for the design of projects utilizing site design techniques to minimize noise impacts. The proposed policies discussed above would adequately reduce these impacts to a less-than-significant level.

**4. Groundborne Vibration**

Development under the proposed General Plan would not introduce new sources of groundborne vibration. In addition, Objective N-1.3, Policy 6 states that the City will seek to reduce impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g., residences) are sited at least 100-feet from the centerline of the railroad tracks whenever feasible. Thus, no significant impact would occur.

**5. Airport Noise**

The Tracy Municipal Airport, located in the southern portion of the city between Tracy Boulevard and Corral Hollow Road, is a source of community noise in its vicinity. New noise sensitive uses are not planned in areas within the San Joaquin County 2020 General Plan 60 or 65 dB CNEL noise contours for the Tracy Airport (shown in Figure 4.14-1). Thus, no significant impact would occur.

**6. Construction Noise**

Residences and businesses located adjacent to proposed development would be affected by construction noise during buildout of the General Plan. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive

land uses, or when construction durations last over extended periods of time. Major noise generating construction activities could include demolition activities, site grading and excavation, building erection, paving and landscaping. These activities could occur in areas immediately adjacent to existing noise-sensitive receptors.

The highest construction noise levels would be generated during grading and excavation, with lower noise levels occurring during building construction. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA at a distance of 50 feet. Typical hourly average construction-generated noise levels are about 80 to 85 dBA measured at a distance of 50 feet from the site during busy construction periods. In addition, pile driving may occur at some of the proposed development sites. This type of construction activity can produce very high noise levels of approximately 105 dBA at 50 feet. These noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. Intervening structures or terrain would result in lower noise levels. Noise levels anticipated over temporary periods of time as a result of construction facilitated by the proposed General Plan would generate potentially significant noise impacts.

Objective N-1.2, Policy 4 limits construction in the vicinity of noise sensitive land uses to daylight hours or 7:00 am to 7:00 pm and requires that certain construction noise control measures be implemented at construction sites. These construction noise control measures include the requirements to equip all internal combustion engine-driven equipment with intake and exhaust mufflers, to locate stationary noise-generating equipment as far as possible from sensitive receptors, and to utilize quiet air compressors and other stationary noise sources. This policy is not sufficient to mitigate construction noise impacts, so a significant impact would occur. However, implementation of mitigation measures would reduce this impact to a less-than-significant level.

### *D. Impacts and Mitigation Measures*

While policies and other regulations would reduce noise impacts to the extent feasible, significant and unavoidable impacts would occur in regards to temporary, short-term and long-term noise impacts under the proposed General Plan.

**Impact NOI-1:** The City's Noise Ordinance and policies in the proposed General Plan serve to control excessive sources of noise in the city and ensure that noise impacts from new projects are evaluated when they are reviewed. Despite these policies and regulations, significant noise levels increases (3 dBA $L_{dn}$ or greater) associated with increased traffic would occur adjacent to existing noise sensitive uses along portions of I-205, Grant Line Road, Schulte Road, Linne Road, Lammers Road, Corral Hollow Road, Tracy Boulevard, and MacArthur Drive. New roadways facilitated by the General Plan would also increase existing noise levels at receivers in Tracy. This is a *significant and unavoidable* impact. No additional mitigation is available.

**Impact NOI-2:** Construction associated with development projected during the planning horizon of the proposed General Plan would temporarily elevate noise levels at adjacent land uses by 15 to 20 dBA or more.

Mitigation Measure NOI-2: In addition to the time-of-day restriction and construction noise control measures in Objective N-1.2, Policy 4, the following standard construction noise control measures should be included as requirements at construction sites to minimize construction noise impacts:

- When necessary, temporary noise control blanket barriers shall shroud pile drivers or be erected in a manner to shield the adjacent land uses. Such noise control blanket barriers can be rented and quickly erected.
- Foundation pile holes shall be pre-drilled to minimize the number of impacts required to seat the pile. The pre-drilling of foundation pile holes is a standard construction noise control technique. Pre-drilling reduces the number of blows required to seat the pile.

- All construction projects shall comply with the Article 9 of the City of Tracy Municipal Code, the City's Noise Control Ordinance.

Significance After Mitigation: *Less than significant.*

## 4.15 AIR QUALITY

This section discusses the geography and meteorology, regulatory framework for air quality and existing air conditions in the City of Tracy and the San Joaquin region. This section also describes impacts to air quality in Tracy and the region relating to construction, direct and indirect emissions associated with the proposed General Plan and Sustainability Action Plan, and mitigation measures warranted to reduce or eliminate any identified significant impacts, based on the assessment guidelines of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

For the majority of the analyses contained in this EIR, the General Plan horizon year of 2025 was used. However, the transportation and air quality analyses, which rely on modeled traffic data, extend to the year 2030. This is because the San Joaquin Council of Governments has recently updated the regional travel demand model to 2030. This air quality analysis is therefore consistent with the regional model. Furthermore, this approach is conservative by extending the analysis beyond the General Plan horizon year. As explained in Chapter 3, it is generally held that modeling traffic and associated air quality impacts beyond a 20-year time period is increasingly inaccurate and not considered to be reliable, so this analysis is limited to consistency with the existing San Joaquin Council of Governments (SJCOG) traffic models.

In addition, as described in Chapter 1, the traffic and air analyses do not fully account for the VMT reductions that will occur as a result of the Sustainability Action Plan. Therefore, this chapter provides a conservative analysis of the VMT-related air quality impacts resulting from implementation of the General Plan and Sustainability Action Plan.

### *A. Existing Setting*

The following section describes the existing regulatory and physical environment with regard to air quality in Tracy and the San Joaquin region.

## 1. Regulatory Framework

a. Federal and State Clean Air Acts

The federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National ambient air quality standards (NAAQS) were established by the federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone ($O_3$), nitrogen dioxide ($NO_2$), particulate matter with a diameter less than 10 microns ($PM_{10}$), sulfur dioxide ($SO_2$), and lead (Pb). In 1997, the United States Environmental Protection Agency (US EPA) added fine particulate matter or $PM_{2.5}$ as a criteria pollutant. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. California ambient air quality standards (CAAQS) include the NAAQS pollutants, as well as hydrogen sulfide, sulfates, vinyl chloride, and visibility-reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically examined in environmental air quality assessments. In addition, lead concentrations have decreased dramatically since it was removed from motor vehicle fuels.

*i. Federal Clean Air Act*

At the federal level, the US EPA administers and enforces air quality regulations. Federal air quality regulations were developed primarily from implementation of the federal Clean Air Act (CAA) (1977, last amended in 1990, 42 United States Code [USC] 7401 *et seq.*). If an area does not meet NAAQS over a set period of three years, the US EPA designates it as a "nonattainment" area for that particular pollutant. The US EPA requires states that have areas that do not comply with the national standards to prepare and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan. Under severe cases, the US EPA may impose a federal plan to make progress in meeting the federal standards.

The US EPA also has programs for identifying and regulating hazardous air pollutants. The CAA requires the US EPA to set standards for these pollutants and sharply reduce emissions of controlled chemicals. Industries were classified as major sources if they emitted certain amounts of hazardous air pollutants. The US EPA also sets standards to control emissions of hazardous air pollutants through mobile source control programs. These include programs regarding reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

The San Joaquin Valley Air Basin is subject to major air quality planning programs required by the CAA to address ozone, particulate matter air pollution, and carbon monoxide. The CAA requires that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards within the deadlines specified in the CAA. These plans are submitted to the State, which after approval, submits them to the US EPA as the State Implementation Plan.

*ii. California Clean Air Act*

The California Clean Air Act of 1988, amended in 1992, outlines a program for areas in the state to attain the CAAQS by the earliest practical date. The California Air Resources Board (CARB) is the State air pollution control agency and is a part of the California Environmental Protection Agency. As described above, the California Clean Air Act set more stringent air quality standards for all of the pollutants covered under national standards, and additionally regulates levels of vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. If an area does not meet CAAQS, CARB designates the area as a nonattainment area. The San Joaquin Valley Air Basin does not meet the CAAQS for ozone, $PM_{10}$ and $PM_{2.5}$. The CARB requires regions that do not meet CAAQS for ozone to submit clean air plans that outline measures to attain the standard or show progress toward attainment.

In addition to the US EPA, the CARB further regulates the amount of air pollutants that can be emitted by new motor vehicles sold in California. Motor vehicle emissions standards have always been more stringent than federal standards since they were first imposed in 1961. The CARB has also developed Inspection and Maintenance (I/M) and "Smog Check" programs with the California Bureau of Automotive Repair. In addition, inspection programs for trucks and buses have been implemented. The CARB also sets standards for motor vehicle fuels sold in California.

b. Air Pollutants and Contaminants

Table 4.15-1 summarizes the air quality standards and provides a brief description of the six criteria air pollutants. Pollutants of greatest concern to the Tracy region (i.e. $O_3$, CO, $PM_{10}$, $PM_{2.5}$ and toxic air contaminants) are described in further detail below.

*i. Ozone*

While $O_3$ serves a beneficial purpose in the upper atmosphere (i.e. stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. $O_3$ concentrations build to peak levels during periods of light winds, bright sunshine and high temperatures. Short-term $O_3$ exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. Sensitivity to $O_3$ varies among individuals, but about 20 percent of the population is sensitive to $O_3$, with exercising children being particularly vulnerable. $O_3$ is formed in the atmosphere by a complex series of photochemical reactions that involve “ozone precursors” that are two families of pollutants: oxides of nitrogen ($NO_x$) and reactive organic gases (ROG). $NO_x$ and ROG are emitted from a variety of stationary and mobile sources. While $NO_2$, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as $O_3$ precursors.

TABLE 4.15-1 **AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS**

| Pollutant | Averaging Time | California Standard | Federal Primary Standard | Pollutant Health and Atmospheric Effects | Major Pollutant Sources |
|---|---|---|---|---|---|
| Ozone ($O_3$) | 1 hour | 0.09 ppm* | --- | Irritation and possibly permanent lung damage. | Motor vehicles, including refining and gasoline delivery. |
| | 8 hours | 0.070 ppm | 0.075 ppm | | |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | 35 ppm | Deprives body of oxygen in the blood. Causes headaches and worsens respiratory problems. | Primarily gasoline-powered internal combustion engines and wood smoke. |
| | 8 hours | 9.0 ppm | 9 ppm | | |
| Nitrogen Dioxide ($NO_2$) | Annual Arithmetic Average | 0.030 ppm | 0.053 ppm | Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. | Motor vehicles, petroleum-refining, power plants, aircraft, ships, and railroads. |
| | 1 hour | 0.18 ppm | --- | | |
| Sulfur Dioxide ($SO_2$) | Annual Arithmetic Average | --- | 0.03 ppm | Irritates and may permanently injure respiratory tract and lungs. Can damage plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight. | Refineries, fuel combustion, chemical plants, sulfur recovery plants, and metal processing. |
| | 1 hour | 0.25 ppm | --- | | |
| | 24 hours | 0.04 ppm | 0.14 ppm | | |
| Respirable Particulate Matter ($PM_{10}$) | 24 hours | 50 ug/$m^3$ ($PM_{10}$) | 150 ug/$m^3$ ($PM_{10}$) | May irritate eyes and respiratory tract; decrease lung capacity, cause cancer and increased mortality. Produces haze and limits visibility. | Motor vehicle travel, construction, industrial and agricultural operations, combustion, wood smoke, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and forest fires). |
| | Annual Arithmetic Mean | 20 ug/$m^3$ ($PM_{10}$) | --- | | |
| Fine Particulate Matter ($PM_{2.5}$) | 24 hour | -- | 35 ug/$m^3$ ($PM_{2.5}$) | | |
| | Annual Arithmetic Mean | 12 ug/$m^3$ ($PM_{2.5}$) | 15 ug/$m^3$ ($PM_{2.5}$) | | |
| Lead | 30 Day Average | 1.5 ug/$m^3$ | | Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases). | Present source include: lead smelters, battery manufacturing & recycling facilities. Past sources included combustion of leaded gasoline. |
| | Calendar Quarter | --- | 1.5 ug/$m^3$ | | |

* Note ppm = part per million; ug/$m^3$ = micrograms per cubic meter
Source California Air Resources Board, May 6, 2005

*ii. Carbon Monoxide (CO)*

CO is a non-reactive pollutant that is highly toxic, invisible and odorless. It is formed by the incomplete combustion of fuels. The largest source of CO emissions is motor vehicles. Wood stoves and fireplaces also contribute to high levels of CO. Unlike $O_3$, CO is directly emitted into the atmosphere. The highest CO concentrations occur during the nighttime and early mornings in late fall and winter. Ambient CO levels are strongly influenced by meteorological factors such as wind speed and atmospheric stability.

*iii. Inhalable Particulates*

Respirable particulate matter, $PM_{10}$, and fine particulate matter, $PM_{2.5}$, consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. $PM_{10}$ and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. $PM_{10}$ and $PM_{2.5}$ are a health concern, particularly at levels above the federal and State ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems, including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. Very small particles of certain substances (e.g. sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g. chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing pas-

sages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

In 1983, the CARB replaced the standard for "suspended particulate matter" with a standard for suspended $PM_{10}$ or "respirable particulate matter." This standard was set at 50 $\mu$g/m3 for a 24-hour average and 30 $\mu$g/m3 for an annual average. The CARB revised the annual $PM_{10}$ standard in 2002, pursuant to the Children's Environmental Health Protection Act. The revised $PM_{10}$ standard is 20 $\mu g/m^3$ for an annual average. $PM_{2.5}$ standards were first promulgated by the US EPA in 1997 and were recently revised in late 2006 to lower the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$ for 24-hour exposures. That same action by the US EPA revoked the annual $PM_{10}$ standard due to the lack of scientific evidence correlating long-term exposures of ambient $PM_{10}$ with health effects. The CARB has only adopted an annual average $PM_{2.5}$ standard, which is set at 12 $\mu g/m^3$. This is more stringent than the NAAQS of 15 $\mu g/m^3$.

*iv. Toxic Air Contaminants (TAC)*

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, State, and federal level.

HAPs are the air contaminants identified by the US EPA as known or suspected to cause cancer, serious illness, birth defects or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 HAPs. Of the 21 HAPs identified by the US EPA as MSATs, a priority list of six HAPs were identified, including: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period between

2000 and 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions; this decrease is expected to be 57 percent to 67 percent, depending on the contaminant.[1]

California developed a program under the Tanner Toxics Act (Assembly Bill [AB] 1807) to identify, characterize and control toxic air contaminants (TACs). Subsequently, AB 2728 incorporated all 188 HAPs into the AB 1807 process. TACs include all HAPs plus other containments identified by the CARB. These are a broad class of compounds known to cause morbidity or mortality (cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion and commercial operations (e.g. dry cleaners). TACs are typically found in low concentrations, even near their source (e.g. diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Particulate matter from diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs, based on the statewide average. According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the ARB, and are listed as carcinogens either under State Proposition 65 or under the federal Hazardous Air Pollutants programs.

The CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (diesel particulate matter [DPM]) was found to comprise much of that risk. In August 1998, the CARB formally identified DPM as a TAC. DPM is of particu-

[1] Federal Highway Administration, 2006. Interim Guidance on Air Toxic Analysis in NEPA Documents.

lar concern since it can be distributed over large regions, thus leading to widespread public exposure. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by EPA as HAPs, and by CARB as TACs. Diesel engines emit particulate matter at a rate about 20 times greater than comparable gasoline engines. The vast majority of diesel exhaust particles (over 90 percent) consist of $PM_{2.5}$, which are the particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung, possibly leading to adverse health effects. While the gaseous portion of diesel exhaust also contains TACs, the CARB's 1998 action was specific to DPM, which accounts for much of the cancer-causing potential from diesel exhaust. California has adopted a comprehensive diesel risk reduction program to reduce DPM emissions 85 percent by 2020. The US EPA and the CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially.

Smoke from residential wood combustion can be a source of TACs. Wood smoke is typically emitted during wintertime when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind, the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of $PM_{10}$ and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

In 2005, the CARB published a handbook on air quality and land use issues that includes advisory recommendations for siting sensitive land uses (e.g. residences and schools) near specific sources of air pollution.[2] The primary air pollution sources addressed that are located in Tracy are freeways, urban roads with over 100,000 vehicles per day, rural roads with over 50,000 vehicles per day, distribution centers, dry cleaners and large gasoline stations. The advisory recommendations include not siting new residences nor other sensitive land uses within 500 feet of freeways or arterials, 1,000 feet of distribution centers that accommodate a substantial level of truck traffic, 300 feet of

[2] California Air Resources Board, 2005. "*Air Quality and Land Use Handbook: A Community Health Perspective*," April 2005, page 4.

dry cleaners, and 50 feet of gas stations.[3] The recommendations are based on cursory evaluations of similar types of land use conflict scenarios, and therefore are not intended to be standards that are strictly adhered to in every situation. According to the handbook, several factors would affect the level of significance from these types of sources, including truck volumes and activity, topography, meteorology, type of sensitive land use and proposed setback. The CARB therefore recommends a site-specific analysis to determine actual risk near a particular facility. The CARB handbook states that the advisory recommendations should be used to guide analysis of impacts to new sensitive receptors that are proposed within these recommended setbacks; however, land use agencies also have to balance this with other considerations, including housing and transportation needs, economic development priorities and other quality of life issues.

c. San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley portion of Kern. The primary role of the SJVAPCD is to develop plans and implement control measures in the San Joaquin Valley to control air pollution. These controls primarily affect stationary sources, such as industry and power plants. Rules and regulations have been developed by the SJVAPCD to control air pollution from a wide range of air pollution sources. Recently, an indirect source review rule that controls air pollution from new land developments was adopted. The SJVAPCD also conducts public education and outreach efforts such as the Spare the Air, Wood Burning, and Smoking Vehicle voluntary programs. The CARB and US EPA have jurisdiction over controlling emissions from mobile sources.

The SJVAPCD must continuously monitor its progress for plan implementation. The SJVAPCD must report this effort regularly to the CARB and the US EPA. It must also periodically revise its attainment plans to reflect new

[3] California Air Resources Board, 2005. "*Air Quality and Land Use Handbook: A Community Health Perspective*," April 2005, page 4.

conditions and requirements. The SJVAPCD tries to exercise a uniform emission control effort that will bring the entire region into compliance with State and federal standards as quickly as possible.

d. SJVAPCD Rules and Regulations

The SJVAPCD has adopted rules and regulations that apply to land use projects, such as the proposed project. These are described below.

*i. SJVAPCD Indirect Source Review Rule*

On December 15, 2005, the SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursors (i.e. ROG and $NO_x$) and $PM_{10}$ emissions from new land use development projects. The ISR rule is the result of State requirements outlined in the region's portion of the State Implementation Plan (SIP). The SJVAPCD's SIP commitments are contained in the 2004 Extreme Ozone Attainment Demonstration Plan and the 2003 $PM_{10}$ Plan. These plans identified the need to reduce $PM_{10}$ and $NO_x$ substantially in order to attain and maintain the ambient air-pollution standards on schedule. New projects that would generate substantial air pollutant emissions, for which final discretionary approval was granted after March 1, 2006, are subject to the ISR rule. The ISR rule requires projects to mitigate both construction and operational period emissions by applying the SJVAPCD-approved mitigation measures and paying fees to support programs that reduce emissions. Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources, plus expected costs to cover administration of the program.

In the 2008 annual report for the ISR rule, the SJVAPCD reported that, to date, over $10 million had been received in off-site mitigation fees.[4] Over $3 million had been used to reduce $NO_x$ and $PM_{10}$ emissions, leaving an unexpended balance of over $7 million. The ISR rule is estimated to have reduced $NO_x$ by 2,078 tons and $PM_{10}$ by 1,087 tons. So far, off-site mitigation has

[4] 2008 Annual Report on the District's Indirect Source Review Rule, Reporting Period March 1, 2007 to February 29, 2008. San Joaquin Valley Air Pollution Control District.

resulted in the reduction of over 252 tons of $NO_x$ and 9 tons pf $PM_{10}$ per year. The average cost effectiveness was just under $12,000 per ton.

*ii. Regulation VIII – Fugitive $PM_{10}$*

The SJVAPCD controls fugitive $PM_{10}$ through Regulation VIII (Fugitive $PM_{10}$ Prohibitions). The purpose of this regulation is to reduce ambient concentrations of $PM_{10}$ by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans that meet the regulation requirements. Fees are collected by the SJVAPCD to cover costs for reviewing plans and conducting field inspections.

e. SJVAPCD and CEQA Planning

In terms of program evaluation, the SJVAPCD recommends that communities use the DTIM transportation model to estimate ozone precursor emissions. The SJVAPCD recommends that the DTIM runs should be consistent with those used to show Transportation Conformity. Alternatively, the CARB mobile emission inventory model EMFAC2002 can be used in communities that do not have DTIM. Intersections with high congestion should be modeled for CO hotspots using Caline4.

Due to the relationship between land development, transportation and emissions from mobile sources, the SJVAPCD provides guidance to cities and counties on developing General Plans that will help create better air quality in the future. To this end, the SJVAPCD prepared the *Air Quality Guidelines for General Plans* that sets forth 77 goals, policies, and implementation strategies for air quality. The Guidelines emphasize a comprehensive approach to air quality planning, including integrating land use planning in support of alternative transportation, implementing programs that reduce congestion and vehicle use, reviewing project and cumulative air quality impacts under CEQA, reducing exposure to toxic air pollutants, establishing appropriate land use buffers around existing and proposed land uses that would be a

source of odors, and reducing emissions from energy consumption and area sources, including water heaters, woodstoves, fireplaces and barbecues.

The SJVAPCD has not yet specifically addressed the CARB's advisory recommendations regarding siting distances between sensitive receptors and certain sources of air pollution, as described above.

f. Air Quality Planning

In coordination with the SJCOG, the SJVAPCD has prepared several plans to address attainment of both the federal and State ozone standards. These plans are based on the latest planning assumptions.

In response to not meeting the NAAQS, the region is required to submit attainment plans to the US EPA through the State, which are referred to as State Implementation Plans (SIP). In 2004, the region submitted the 2004 Extreme Ozone Attainment Demonstration Plan to the US EPA; this plan addressed the old 1-hour ozone NAAQS. The region's 2007 Ozone Plan, addressing the 8-hour ozone NAAQS, was submitted to the US EPA in June 2007, and is currently under review. That plan predicts attainment of the standard throughout 90 percent of the district by 2020 and the entire district by 2024. To accomplish these goals, the plan would reduce $NO_x$ emissions further by 75 percent and ROG emissions by 25 percent. A wide variety of control measures are included in these plans, such as reducing or offsetting emissions from construction and traffic associated with land use developments. While the US EPA reviews the plan, commitments made in the previously approved ozone attainment plan apply.

On September 25, 2008, the US EPA formerly redesignated the San Joaquin Valley to attainment of the $PM_{10}$ NAAQS, and approved the 2007 $PM_{10}$ Maintenance Plan. The region now meets the NAAQS for $PM_{10}$. The SJVAPCD adopted the 2008 $PM_{2.5}$ plan on April 30, 2008. The plan was approved by the CARB on May 22, 2008, and was submitted to the US EPA for review. This plan will assure that the Valley will attain the 1997 $PM_{2.5}$ standard and make progress toward attaining the new 2006 standards, as well as

the State standard. The plan uses control measures to reduce $NO_x$, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of the wood-burning rules. Recent and proposed action by the CARB to reduce diesel particulate matter emissions from on- and off-road mobiles sources is contained in the plan. Attainment plans for the 2006 $PM_{2.5}$ NAAQS are not required until 2012 at the earliest.

Both the ozone and $PM_{2.5}$ plans include all measures (i.e. federal, State and local) that would be implemented through rule making or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of these plans. The plans described above addressing ozone also meet the State planning requirements.

**2. Geography and Meteorology**

Tracy is located in the northwest part of the San Joaquin Valley. Elevation of this flat floor portion of the Valley is about 150 feet above sea level. The San Joaquin Valley Air Basin is about 35 miles wide and 250 miles long. Surrounded by mountain ranges, the air basin drains to the north with an opening at the Carquinez Strait, which leads into the San Francisco Bay and then the Pacific Ocean.

Wet winters and dry summers characterize the Tracy region's inland Mediterranean-type climate. Climate is temperate, with an average annual high of 75 degrees and an average low of 47 degrees. Summertime high temperatures are around 90 degrees, while wintertime high temperatures are in the 50 to 60 degree range. Rainfall totals can vary widely over a short distance, with windward mountain areas west of Tracy averaging over 24 inches of rain, and shadow areas, such as the city proper, averaging about 10 inches annually. During stormy periods, horizontal and vertical air movement ensures rapid pollutant dispersal. Rain also washes out particulate and other pollutants. Conversely, during calm periods, pollutant levels can build up to unhealthful levels.

Winds from March to November typically blow from the west near Tracy. During winter months, drainage winds are more common, with colder air from surrounding mountains flowing down into the valley floor and then out toward the Delta.

Normally, air temperatures decrease with increasing elevations. Sometimes this normal pattern is inverted, with warm air aloft, and cooler air trapped near the earth's surface. This atmospheric condition occurs in all seasons. In summer, especially when wind speeds are very low, a strong inversion will trap air emissions near the surface allowing high levels of ozone smog to develop. In winter, persistent inversions can trap emissions of particulate (e.g. woodsmoke) and carbon monoxide near the surface, resulting in unhealthful air quality.

The potential for serious summer air pollution in the San Joaquin Valley is strong because of high surface temperatures, plentiful sunshine, relatively stable air, and mountains that trap emissions. In winter, low rainfall, strong inversions and weak winds allow emissions to build up to high levels. In Tracy, local pollution sources are augmented by emissions transported from upwind sources. Conversely, air pollutant emissions created in Tracy can be transported toward other communities by the wind, and contribute to unhealthful levels in those areas. Hence controlling air pollution requires both local and regional efforts and unified programs to achieve clean air.

**3. Existing Air Quality Conditions**

a. Criteria Pollutants

Ambient air quality is affected by the rate and concentration of pollutant emissions and meteorological conditions. Factors such as wind speed, atmospheric stability, and mixing height all affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in emissions, while short-term variations result from changes in atmospheric conditions. There are several continuous air monitoring stations operated by government agencies in the Tracy area. Measured air pollutant

data indicate that ground-level ozone, $PM_{10}$, and $PM_{2.5}$, are the air pollutants of greatest concern because they are fatal in high concentrations.

The monitors in Tracy and Stockton are generally representative of air quality in this part of the San Joaquin Valley. Ambient air pollution data typically receives great scrutiny and quality assurance testing, so final data lags about one year behind the current calendar year. State and federal air quality standards and the highest local air pollutant levels measured over the past five years (2003 to 2007) are reported in Table 4.15-2.

Air pollutant emissions in Tracy, including emissions of toxic air contaminants, come from a variety of sources. Most industrial sources would be buffered from residences or other sensitive receptors through land use decisions. However, diesel exhaust from trucks and other diesel-powered equipment can result in significant exposures to air toxic contaminants. In Tracy, the Interstate 205 and Interstate 580 freeways include high volumes of truck traffic that lead to substantial emissions of diesel particulate matter, a known carcinogen. Tracy also contains numerous distribution centers that include substantial truck traffic.

In general, air quality in Tracy between 2003 and 2007 has been better than other parts of the San Joaquin Valley. During this time, the State 1-hour ozone standard was exceeded from three to 16 times a year, and the federal standard was not exceeded. National 8-hour ozone standards were exceeded three to ten times a year. State $PM_{10}$ standards have been exceeded from 36 to 60 times a year. Federal $PM_{2.5}$ daily standards have been exceeded from one to five times a year. Standards for all other criteria pollutants were not exceeded in the five-year period.

Exposure to TACs is usually evaluated in terms of health risk or cancer risk. For cancer health effects, the risk is expressed as the number of chances in a population of a million people who might be expected to get cancer over a 70-year lifetime. The CARB estimated the 2001 lifetime cancer risk at about 250

TABLE 4.15-2 **MEASURED AIR POLLUTANT CONCENTRATIONS IN SAN JOAQUIN COUNTY**[a]

| Pollutant | Average Time | National Ambient Air Quality Standard | California Ambient Air Quality Standard | Measured Levels in Stockton and Tracy[a] | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 2003 | 2004 | 2005 | 2006 | 2007 |
| Ozone ($O_3$) | 1-Hour | —[b] | 0.09 ppm | **0.10 ppm** | **0.11 ppm** | **0.10 ppm** | **0.12 ppm** | **0.10 ppm** |
| | 8-Hour | 1997 = 0.08 ppm<br>2008 = 0.075 ppm | 0.070 ppm | **0.09 ppm** | **0.10 ppm** | **0.086 ppm** | **0.103 ppm** | **0.083 ppm** |
| Carbon Monoxide (CO) | 8-Hour | 9 ppm | 9.0 ppm | 3.1 ppm | 2.5 ppm | 2.9 ppm | 2.3 ppm | 2.3 ppm |
| Fine Particulate Matter ($PM_{2.5}$) | 1-Hour | 1997 = 65 µg/m$^3$<br>2006 = 35 µg/m$^3$ | – | **45µg/m$^3$** | **41 µg/m$^3$** | 63 µg/m$^3$ | **47 µg/m$^3$** | **62 µg/m$^3$** |
| | Annual | 15µg/m$^3$ | – | 14 µg/m$^3$ | 13µg/m$^3$ | 13 µg/m$^3$ | 14 µg/m$^3$ | 14 µg/m$^3$ |
| Respirable Particulate Matter ($PM_{10}$) | 24-Hour | 150 µg/m$^3$ | – | **90 µg/m$^3$** | **61 µg/m$^3$** | **84 µg/m$^3$** | **94 µg/m$^3$** | **75 µg/m$^3$** |
| | Annual State/Fed | 50 µg/m$^3$ | 20 µg/m$^3$ | **28 µg/m$^3$** | **29 µg/m$^3$** | **30 µg/m$^3$** | 20 µg/m$^3$ | 20 µg/m$^3$ |

Notes: ppm = parts per million
µg/m3 = micrograms per cubic meter
NA = data not available
Values reported in **bold** exceed ambient air quality standard

[a] All levels measured in Stockton except ozone and $PM_{10}$, which began at the Tracy Airport in 2006.

[b] The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.

Source: California Air Resources Board, http://www.arb.ca.gov/adam.

cancer cases per million people in the Tracy area.[5] This was a lower risk than the calculated overall 2000 San Joaquin Valley basin-wide cancer risk of 586 cancer cases per million people.[6] The cancer risk in Tracy is expected to be about 100 to 200 cases per million people in 2010, and less than 100 cases per million if the CARB adopts most of the proposed diesel risk reduction measures. Areas adjacent to freeways and industrial areas that generate large truck volumes would have higher cancer risks. These maps are based on emissions from major roadways, inventoried industrial and area sources, and off-road equipment, except aircraft.

The CARB publishes an almanac each year that evaluates air quality trends statewide. It also makes forecasts about future pollution levels. According to the CARB, emission sources for ozone precursors in the San Joaquin Valley are from both motor vehicles and industry, with oil fields at the south end of the valley producing high $NO_x$ levels. Agriculture, fugitive dust from paved and unpaved roads, and waste burning all contribute to high background levels of $PM_{10}$.

From 1981 to 2000, the San Joaquin Valley population increased 56 percent while Vehicle Miles Traveled increased 136 percent. Much of this increase is due to the way communities are designed, as well as housing pricing that encourage long commutes. In spite of this dramatic increase in vehicle travel, controls on stationary and mobile sources improved ozone air quality by about 12 percent. Likewise, control measures have reduced $PM_{10}$ levels by about 32 percent. According to the California Clean Air Campaign, the San Joaquin Valley still has some of the worst air pollution in the nation, with about 12,000 people hospitalized for asthma in 2002.

[5] See CARB Maps of Estimated Cancer Risk from Air Toxics - http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm

[6] California Air Resources Board, 2008. The California Almanac of Emissions and Air Quality – 2007 Edition.

b. Potential Sources of Significant Odors

The primary source of potential odors in Tracy would be the Wastewater Treatment Plant at Holly Drive, located just north of Interstate 205. Other smaller odor sources, such as industrial facilities or restaurants, are dispersed throughout the city.

c. Attainment Status

As shown in Table 4.15-3, the region does not meet federal standards for ground level ozone and fine particulate matter. State and federal standards for ozone are not met. The region just attained the federal standard for $PM_{10}$, but does not meet the federal $PM_{2.5}$ standard. Monitoring data suggests that the older 1997 standard has been met, but formal redesignation has not been made by the US EPA. However, the region is expected to be designated nonattainment for the new 2006 $PM_{2.5}$ standard. Formal designations are not expected until late 2009. The region is in severe nonattainment for the State 1-hour ozone standard and nonattainment for the State 8-hour ozone standard. The region also does not meet State standards for $PM_{10}$ and $PM_{2.5}$.

**4. Existing and Projected Trends in Air Pollutant Emissions**

Air pollutant emission inventories are maintained by the CARB. These inventories are developed for air basins and counties throughout California. Emission inventories are not developed for individual cities. The existing and projected emission inventory for San Joaquin County is presented in Table 4.15-4. Emissions of ozone precursor pollutants (ROG and $NO_x$) are anticipated to decrease during future years. Modest decreases in ROGs will occur, while reductions in $NO_x$ emissions are anticipated to be substantial, resulting mainly from the control of mobile sources. While mobile source emissions of $NO_x$ have been decreasing since 1990 (even though population and vehicle use has increased), greater decreases are anticipated. $PM_{10}$ and $PM_{2.5}$ are problematic since they are more closely linked to vehicle miles traveled and agricultural operations.

TABLE 4.15-3 **ATTAINMENT OF AMBIENT AIR QUALITY STANDARDS SAN JOAQUIN COUNTY (INCLUDING TRACY)**

| Pollutant | Federal Designation | State Designation |
|---|---|---|
| Ozone – 1-hour | No Designation | Nonattainment/Severe |
| Ozone – 8-hour | Nonattainment/Serious | Nonattainment |
| $PM_{2.5}$ | Nonattainment[a] | Nonattainment |
| $PM_{10}$ | Attainment – Maintenance/ Unclassified | Nonattainment |
| CO | Unclassified/Attainment | Attainment |
| Nitrogen Dioxide | Unclassified/Attainment | Attainment |
| Sulfur Dioxide | Unclassified/Attainment | Attainment |

[a] The area is designated nonattainment for the 1997 $PM_{2.5}$ federal standards. EPA designations for the 2006 $PM_{2.5}$ standards will be finalized in December 2009. The District has determined, as of the 2004-06 PM 2.5 data, that the 1997 24-Hour PM 2.5 standard has been attained.
Source: SJVAPCD 10/06/2008 http://www.valleyair.org/aqinfo/attainment.htm..

### *B. Standards of Significance*

The proposed General Plan and Sustainability Action Plan would have a significant impact to air quality if they would:

- Allow increases in vehicle activity, which lead to increases in air pollutant emissions that are not consistent with the applicable Clean Air Plan.
- Allow for development that would cause significant odor complaints.
- Allow for development that would expose people to substantial levels of toxic air contaminants.
- Lead to unacceptably high localized concentrations of carbon monoxide.
- Allow for development that would cause construction emissions that expose people to high levels of dust and equipment exhaust.

TABLE 4.15-4 **EXISTING AND PROJECTED EMISSION INVENTORY FOR SAN JOAQUIN COUNTY**

| | | Daily Emissions in Tons per Day | |
|---|---|---|---|
| **Pollutant** | **Source** | **Existing 2006** | **Future 2020** |
| Reactive Organic Gases (ROG) | Stationary | 6.9 | 8.8 |
| | Area | 14.9 | 18.1 |
| | Mobile | 27.8 | 15.6 |
| | **Total** | **49.6** | **42.5** |
| Nitrogen Oxides ($NO_x$) | Stationary | 17.0 | 19.2 |
| | Area | 1.8 | 1.7 |
| | Mobile | 89.1 | 41.2 |
| | **Total** | **107.9** | **62.1** |
| Respirable Particulate Matter ($PM_{10}$) | Stationary | 2.6 | 3.2 |
| | Area | 26.0 | 28.4 |
| | Mobile | 4.4 | 2.9 |
| | **Total** | **33.0** | **34.5** |
| Fine Particulate Matter ($PM_{2.5}$) | Stationary | 1.8 | 2.1 |
| | Area | 6.3 | 6.5 |
| | Mobile | 3.7 | 2.2 |
| | **Total** | **11.8** | **10.8** |

### *C. Impact Discussion*

The following provides an analysis of the effects of the proposed General Plan and Sustainability Action Plan on regional air quality.

#### 1. Consistency with Clean Air Planning Efforts

The following section discusses the proposed General Plan's and Sustainability Action Plan's consistency with the regional clean air planning efforts.

a. Clean Air Planning Population Assumptions and Projections

Future development in Tracy would generate emissions of ozone precursor pollutants and $PM_{10}$, both of which affect regional air quality. Development allowed under the proposed General Plan would be greater than that allowed under the 1993 General Plan. This increased development could lead to greater vehicle use, as measured in daily vehicle miles traveled.

Future changes to air pollutant emissions in the Tracy area were computed based on vehicle miles traveled (VMT) estimates, since most air pollutant emissions associated with land use development occur from vehicle use. The CARB motor vehicle emissions model (EMFAC2007) was used along with vehicle miles traveled estimates to calculate daily emissions in terms of pounds per day for existing conditions and future 2030 conditions under the proposed General Plan. Specifically, the BURDEN portion of the EMFAC2007 model, using San Joaquin County default annual conditions, was used with VMT projections. Daily VMT and air pollutant emissions are shown in Table 4.15-5.

As shown in Table 4.15-5, emissions of ozone precursors (ROG and $NO_x$) are expected to decrease over the life of the proposed General Plan (from 2004 to 2030). The combination of fleet turnover with vehicles that have better emissions controls and reformulated vehicle fuel would substantially reduce motor vehicle emission rates over the next 20 years. Cleaner vehicle exhaust is the primary strategy for reducing air pollutant levels to meet State and federal air quality standards. The air pollutant emissions projections provided in Table 4.15-5 are for information purposes only.

The population of Tracy would increase as a result of development of the land uses allowed under the proposed General Plan. Increases in the number of vehicle trips would occur as a result of increased population. Emissions of ozone precursor pollutants are expected to decrease. The reduction in $NO_x$ emissions would be substantial, as reductions in emissions of this pollutant are key to the plans for attaining ozone standards. Emissions of $PM_{10}$ would increase, but at a much lower rate than population and vehicle miles traveled

TABLE 4.15-5 **COMPARISON OF PROJECTED VEHICLE MILES TRAVELED AND EMISSIONS ASSOCIATED WITH PROPOSED GENERAL PLAN**

| | Base Year 2004 | Proposed General Plan | Difference Between Base and Proposed GP | |
|---|---|---|---|---|
| | | | Quantity | % Difference |
| **Traveled Projections (x1000)** | | | | |
| Trips (x1000) | 527 | 1,425 | 898 | 170% |
| VMT (x1,000 Miles) | 2,958 | 4,778 | 1,820 | 62% |
| **Resulting Emissions Estimates from Vehicle Travel and Areas Sources in Tons per Day** | | | | |
| ROG (tons/day) | 4.21 | 3.31 | -0.89 | -21% |
| NOx (tons/day) | 7.54 | 2.73 | -4.81 | -64% |
| $PM_{10}$ (tons/day)* | 0.91 | 1.02 | 0.10 | 11% |
| $CO_2$ (tons/day) | 2549.46 | 3677.62 | 1128.16 | 44% |

*Includes dust from paved roadways based on CARB area source emission inventories for San Joaquin County, motor vehicle exhaust, and tire/brake wear.

(VMT) growth as a result of plans to reduce emissions. It should be noted that many of the air pollutant emission reductions would come from controls on motor vehicles, of which many are already in place. However, it takes many years for the overall vehicle fleet to turn over, where new low emitting vehicles replace older vehicles that have higher emission rates. There are significant air quality impacts associated with growth under the proposed General Plan due to the growth in population and VMT. While the increases in VMT and air pollutant emissions over the region are relatively small when compared with San Joaquin County's total projected mobile source emissions, the fact that they exceed projections used in the clean air planning ef-

forts would nonetheless constitute a significant and unavoidable air quality impact.

The proposed General Plan includes an updated Air Quality Element, along with numerous land use and circulation policies, that seek to reduce air pollution and minimize the air quality impacts of new development. The proposed General Plan and Sustainability Action Plan include policies and measures that prioritize infill of existing neighborhoods and ensure that urban development occurs adjacent to existing urbanized areas. The proposed General Plan and Sustainability Action Plan also include policies and measures to take advantage of existing and future transit opportunities. In addition, the General Plan and Sustainability Action Plan focus on mixed-use land uses that would promote alternative modes of transportation and contain numerous policies, programs and measures that, if adopted and implemented, would act to help reduce motor vehicle use from new development. This would in turn reduce the rate of VMT from trips generated in Tracy. Many of these General Plan policies are listed in Section C.1.a below (Consistency with Clean Air Transportation Control Measures).

The Air Quality Element of the proposed General Plan contains policies supporting four main objectives aimed at improving air quality. Policies 1 through 5 under Objective AQ-1.1 promote land use patterns that would reduce the number and length of vehicle trips, encourage mixed use developments, maintain a balance between housing and jobs (shorter commute trips), and encourage uses that would promote walking and biking. Objective AQ-1.2 includes 14 policies and five actions that would contribute to reducing air pollutant emissions through CEQA review, implementation of best management practices, reductions in energy usage, application of dust control measures, and providing appropriate buffers between sources of air pollutant emissions and sensitive receptors, such as residences. Objective AQ-1.3 includes six policies and two actions that would support alternative modes of transportation, such as carpooling, transit, bicycling and walking, which would reduce dependence on motor vehicles. Finally, Objective AQ-1.4 includes three

policies and three actions that would coordinate improvements efforts with those outside of Tracy and provide education to the public.

While the various policies and actions outlined above would reduce air pollutant emissions that affect both Tracy and the region, the impact from the proposed General Plan and Sustainability Action Plan would be significant, because they would result in higher VMT than assumed by SJCOG and SJVAPCD for relevant clean air plans.

b. Consistency with Clean Air Transportation Control Measures

The SJVAPCD and SJCOG clean air planning efforts assume that appropriate TCMs will be incorporated into new projects. Table 4.15-6 lists the policies of the proposed General Plan that are supportive of the TCMs adopted by SJVAPCD and SJCOG. Table 4.15-7 lists the measures of the proposed SAP that are supportive of these TCMs. A description of each TCM is provided in each table along with a listing of relevant proposed General Plan or SAP policies that would implement each measure. The proposed policies and measures support and reasonably implement the applicable TCMs, and thus would be consistent with these TCMs. Therefore, no significant impact would occur with regard to TCMs that have been adopted by the SJVAPCD as part of the region's clean air planning efforts.

One of the most effective tools to reduce emissions from future development is SJVAPCD's Indirect Source Review Rule. This rule requires many development projects to effectively reduce on-site emissions and, in some cases, reduce emissions off-site. Emission reductions requirements apply to construction and operational emissions. Reducing vehicle travel from new development projects is likely to be the most cost-effective method for most new development projects.

TABLE 4.15-6 **RELEVANT PROPOSED GENERAL PLAN POLICIES SUPPORTING REGIONAL TCMS**

| Transportation Control Measures | Relevant General Plan Programs and Policies |
|---|---|
| **1. Public Transit** | Objective CC-9.1 – Policy 2 - Village Centers should include provisions for public transit.<br><br>Objective CIR-2.1 – Policy 1 - The City shall continue to cooperate with regional and State agencies, including Caltrans and San Joaquin Council of Governments (SJCOG) to study plan and fund improvements to the regional transportation system. These regional transportation improvements may include freeway widening, the construction of regional roadways, regional passenger rail expansions, additions to the existing commuter bus system and provision of park-and-ride lots near facilities heavily used by commuters.<br><br>Objective CIR-4.1 – Policy 3 - The City shall continue to operate the Tracer fixed-route and paratransit transit service and expand service to new residential and non-residential areas if funding for additional service is available and is warranted by ridership demand.<br><br>Objective CIR-4.1 – Policy 4 - The City shall seek funding from regional and State and federal agencies to fund additional transit service expansions and improvements.<br><br>Objective CIR-4.1 – Policy 5 - The City shall require development to provide for transit and transit-related increased modal opportunities, such as adequate street widths and curb radii, bus turnouts, bus shelters, park-and-ride lots and multi-modal transit centers through the development and environmental review processes, if appropriate.<br><br>Objective CIR-4.1 – Policy 6 - The City shall encourage efforts for additional regional transit service, including expansion of the existing ACE service, expansion of the existing commuter bus service, and new commuter rail service from Tracy to other areas in the region.<br><br>Objective CIR-4.2 – Policy 1 - The City shall complete the development of the Multi Modal Transit Center at Central Avenue and 6th Street.<br><br>Objective CIR-4.2 – Policy 2 - The City shall preserve the necessary rights-of-way by continuing the implementation of current arterial street standards and ensuring the preservation of existing rail corridors to facilitate the development of an expanded transit program in the future. |

TABLE 4.15-6 **RELEVANT PROPOSED GENERAL PLAN POLICIES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant General Plan Programs and Policies |
|---|---|
| | Objective CIR-4.2 – Policy 3 - The City shall encourage the expansion of transit services through coordination and cooperation with the Bay Area Rapid Transit District (BART), San Joaquin Regional Rail Commission, San Joaquin Regional Transit District, the Altamont Commuter Express (ACE), on services that expand the mobility and accessibility of transporting people, goods and services in and through Tracy and the region.<br>Objective CIR-4.2 – Policy 4 - The City shall develop a fully integrated multi-modal transportation system that takes into account access to employment, education, shops, medical services and that facilitates participation in social and recreational opportunities.<br>Objective CIR-4.2 – Policy 5 - The City shall provide an efficient, effective and coordinated transit system that maximizes use of regional, state and federal funds. |
| **2. Rideshare Program** | Objective AQ-1.3 – Policy 2 - The City shall encourage Caltrans to implement High Occupancy Vehicle (HOV) lanes on regional freeways in and around the Tracy Planning Area. |
| **3. Park and Ride Lots** | Objective CIR-2.1 – Policy 2 - The City should ensure that land needed for park-and-ride facilities is conserved in new development areas.<br>Objective CIR-4.1 – Policy 2 - The City shall continue to partner with SJCOG, SJRTD and Caltrans in efforts to locate park-and-ride lots and other transit-related facilities in the City of Tracy. |
| **4. Traffic Flow Improvements** | Objective CC-2 - Policy 1 - New development projects should be designed on a traditional, modified, or curvilinear grid within the City's arterial street network. Cul-de-sacs may be used within the grid so long as the objective of pedestrian and bicycle connectivity is achieved.<br>Objective CC-2.2 - Policy 5 - Streets shall be continuous within and between Neighborhoods, including those that are built by different developers or builders.<br>Objective CC-2.2 - Policy 7 - New and existing site features, such as parks, utility easements, and drainage ways, should be improved and used as physical connections within and between Neighborhoods.<br>Objective CC-5.2 - Policy 1 - Neighborhoods should generally be no more than ½ mile wide in any direction. |

TABLE 4.15-6 **RELEVANT PROPOSED GENERAL PLAN POLICIES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant General Plan Programs and Policies |
|---|---|
| | Objective CC-5.2 - Policy 2 - Neighborhoods should not be bisected by a physical barrier, such as an arterial street, a railroad track or a major drainage way |
| | Objective CIR-1.2 – Policy 2 - The City shall implement a connected street pattern with multiple route options for vehicles, bikes and pedestrians. |
| | Objective CIR-1.2 – Policy 3 - New development shall be designed to provide vehicular, bicycle and pedestrian connections with adjacent development. |
| | Objective CIR-1.2 – Policy 5 - New development should be designed with a grid or modified grid pattern to facilitate traffic flows and to provide multiple connections to arterials streets. |
| | Objective CIR-1.5 –Policy 2- The City shall coordinate the timing of traffic signals on arterials to facilitate traffic movement. |
| | Objective CIR-1.6 – Policy 2 - New development shall implement traffic calming measures where necessary so long as connectivity is not diminished |
| | Objective CIR-4.2 –Policy 6 - The City shall pursue economical, long-term solutions to transportation problems by encouraging community designs which encourage transit use, and walking, bicycling and other non-motorized forms of transportation. |
| **5. Bicycle and Pedestrian Programs** | Objective CC-2.2 - Policy 1 - The Downtown and Village Centers shall have direct pedestrian, bicycle and vehicular connections to all Neighborhoods or development projects within an Employment Area |
| | Objective CC-2.2 - Policy 2 - Neighborhoods should have direct pedestrian, bicycle and vehicular connections to their Focal Points and Village Center. |
| | Objective CIR-3.1 – Policy 1 - The City shall incorporate appropriate bicycle and pedestrian facilities on all roadways constructed by the City, Class I to the extent feasible. |
| | Objective CIR-3.1 – Policy 2 - To the extent possible, the City shall separate vehicular from bicycle and pedestrian traffic on higher-speed and higher-volume roadways through the use of off-street bicycle and pedestrian facilities. |
| | Objective CIR-3.1 – Policy 3 - The City may separate bicycle from pedestrian users on high usage bicycle and pedestrian paths. |
| | Objective CIR-3.1 – Policy 4 - The City's bicycle and pedestrian system shall |

TABLE 4.15-6 **RELEVANT PROPOSED GENERAL PLAN POLICIES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant General Plan Programs and Policies |
|---|---|
| | have a high level of connectivity, especially between residences and common local destinations, such as schools, shopping and parks. A higher level of bicycle and pedestrian connectivity is defined as a shorter or similar distance to common destinations for bicycles and pedestrians compared to distances for vehicles. |
| | Objective CIR-3.1 – Policy 5 - New development shall include pedestrian and bicycle facilities internal to the development and that connect to citywide facilities, such as parks, schools and recreational corridors, as well as adjacent development and other services. |
| | Objective CIR-3.1 – Policy 6 - New development sites for commercial, employment, educational, recreational and park-and-ride land uses shall provide bicycle parking and/or storage facilities. |
| | Objective OSC-4.3 – Policy 2 - All development projects should provide linkages to the regional bike and trail system and circulation within the development project site, wherever feasible. |
| | Objective OSC-4.3 – Policy 3 - The City shall pursue the completion of all trail systems designated in the Bikeways Master Plan. |
| | Objective OSC-4.3 – Policy 4 - The City shall partner with San Joaquin County to coordinate regional trail linkages. |
| | Objective AQ-1.3 – Policy 4 -The City shall support efforts to retain the railroad right-of-way for future public transit and bicycle facilities. |
| | Objective AQ-1.3 – Policy 5 - The City shall require direct pedestrian and bicycle linkages from residential areas to parks, schools, retail areas, high-frequency transit facilities and major employment areas. |
| | Objective CC-2.2 – Policy 4 - Neighborhoods shall be designed so that daily shopping errands and trips to their Focal Points can generally be completed within easy walking or biking distances or within a short car drive. |
| | Objective CC-5.2 - Policy 3 - Design streets in Neighborhoods to enhance the sense of place and create a safe and comfortable pedestrian environment. |
| | Objective CC-5.2- Policy 4 - In most instances, block lengths should be short, typically no more than 400 feet, to create an easily navigable street pattern that allows for multiple routes through a neighborhood and greater opportunities for pedestrian activity. |

TABLE 4.15-6 **RELEVANT PROPOSED GENERAL PLAN POLICIES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant General Plan Programs and Policies |
|---|---|
| | Objective CC-5.2 - Policy 5 - Street patterns and block lengths in hillside areas may be designed to follow natural topography and open spaces as long as the objective of hometown feel and bicycle and pedestrian connectivity are achieved. |
| | Objective CC-5.2 - Policy 8 - Sidewalks should be provided on both sides of the streets in all Neighborhoods, except areas designated as Residential Very Low, where it may be acceptable to have sidewalks on only one side of the street. |
| | Objective CC 8-1 – Policy 5 - The following policies and guidance shall apply to development in the Downtown to enhance the pedestrian environment: |
| | Should include human-scale details in the design of buildings such as windows on the street, awnings, and architectural features that create a visually interesting pedestrian environment. |
| | Should include areas designed to create spaces where people can interact and socialize, such as parks, plazas or open air seating in cafes and restaurants, as well as pedestrian amenities such as awnings, pedestrian-scaled lighting, benches and trash cans. |
| | Street trees shall be planted that provide a tree canopy over the street. |
| | Should have loading facilities screened from public view and located away from residential uses. |
| | Should locate parking lots behind or on the side of buildings where possible to reduce their visual impact. |
| | Shall provide screening for parking lots through the use of landscaping or low walls. |
| | Shall have landscaped parking lots to create an attractive pedestrian environment and reduce the impact of heat islands. |
| | May utilize shared parking where applicable to reduce the total number of parking spaces. |
| | Objective CC 8-3 – Policy 4 - All new development shall enhance and be oriented towards the pedestrian environment. |
| | Objective CC-9.2 – Policy 1 -Village Centers should be designed around a main street that is designed to encourage and facilitate pedestrian activity. |
| | Objective CC-9.4 – Policy 4 - Buildings in Village Centers shall feature outdoor |

TABLE 4.15-6 **RELEVANT PROPOSED GENERAL PLAN POLICIES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant General Plan Programs and Policies |
|---|---|
| | use areas to provide a feeling of permanence and durability, such as plazas and open air seating in cafes and restaurants. |
| | Objective CC-9.4 – Policy 5 - Loading facilities in Village Centers for uses requiring delivery from large trucks shall be screened from public view and located away from residential uses. |
| | Objective CC-9.5 –Policy 4 - Direct and safe pedestrian connections between parking lots and buildings in Village Centers shall be provided. |
| | Objective CC-9.6 – Policy 1 - Sidewalks in Village Centers shall be of an adequate width to comfortably accommodate high volumes of pedestrian traffic. In such areas, sidewalk widths of 12 feet are encouraged. |
| | Objective CC-9.6 – Policy 3 - Sidewalks in Village Centers shall be located on both sides of the street. |
| | Objective CC-9.6 – Policy 4 - Pedestrian amenities such as shade trees with a broad canopy, pedestrian-scaled lighting, benches and trashcans should be included in all Village Centers. |
| | Objective CC-10.1 – Policy 1 - Building setbacks on Corridors shall be minimized to enhance the pedestrian environment and character of the area. |
| | Objective CC-10.1 – Policy 2 - Buildings and building entrances on Corridors shall be oriented to the pedestrian environment. |
| | Objective CC-10.1 – Policy 3 - Buildings on Corridors shall include human-scale details such as windows facing the street, awnings, and architectural features that create a visually interesting pedestrian environment. |

TABLE 4.15-7 **RELEVANT PROPOSED SAP MEASURES SUPPORTING REGIONAL TCMS**

| Transportation Control Measures | Relevant SAP Measures |
|---|---|
| **1. Public Transit** | Measure T-4: *Support for Transit* - Promote transit ridership through the following:<br>a. Add to the Transportation Master Plan, where justified by ridership and funding availability, an increase transit route coverage to within ½ mile of all residents in the developed city and to within ¼ mile of 75 percent of residents within new development areas.<br>b. Continue to implement the City's program to provide covered and partially enclosed shelters that are adequate to buffer wind and rain and with at least one bench at each existing public transit stop and to provide local public transit information in transit shelters.<br>c. Provide information to city employees through the Human Resources Department and the City's Transit Coordinator on commute alternatives and incentives, including carpool/vanpool programs, transit service schedules, transit vouchers, alternative work week plans, telecommuting options, and incentives that can be used to increase employee use of alternative modes or work schedules.<br>d. Work with the San Joaquin Regional Rail Commission to study the feasibility of creating rail service in Tracy's downtown.<br>e. Continue to provide citywide door to door service for ADA customers and seniors on the City's Tracer service.<br>f. Continue to run Tracer along commuter routes during peak times, providing remaining service to all the middle and high schools and high employment areas, such as the West Valley Mall.<br>g. Encourage affordable housing to be located in transit-oriented development whenever feasible.<br><br>Measure T-8: *Alternative Transportation Choices for Students* - Promote alternative transportation choices for students through the following:<br>a. Continue to provide free or reduced bus passes for school students.<br>b. Work with school districts to expand "Safe Routes to Schools" programs. |

TABLE 4.15-7 **RELEVANT PROPOSED SAP MEASURES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant SAP Measures |
|---|---|
| | Measure T-12: *Increased Transit to Bay Area Cities and San Joaquin Valley Employment Centers* - Work with regional transit agencies to increase the frequency and capacity of inter-city buses connecting Tracy to Bay Area cities, Stockton, and other San Joaquin Valley employment centers.<br><br>Measure T-13: *Altamont Route Approval and Transit-Oriented Development Around Rail* - Work with ACE and the High Speed Rail Authority to approve the Altamont Route and achieve successful integration of rail transit into a transit-oriented development zone, including an intra-city feeder bus system.<br><br>Measure T-17: Transit Passes For Residents and Employees of New Developments - Provide transit passes valid for at least one year to each resident or employee of new development projects for a period of at least the first three years of project occupancy. |
| **2. Rideshare Program** | Measure T-9: *Car-Share Program* - Work with non-profit or commercial providers to create or provide a car-share program. |
| **3. Park and Ride Lots** | Measure T-7: San Joaquin County Park and Ride Lot Master Plan Implementation - Implement the County's Park and Ride Lot Master Plan, which identifies key locations for park and ride lots in Tracy. |
| **4. Traffic Flow Improvements** | Measure T-6: Traffic Smoothing Through Congestion Management - Add to the Transportation Master Plan a program to implement traffic smoothing and congestion reduction at intersections along Eleventh Street, Grant Line Road, Schulte Road, Lammers Road, Tracy Boulevard, MacArthur Drive, and Chrisman Road corridors.<br><br>Measure T-10: Comprehensive Signal Coordination Program - Continue to implement a comprehensive signal coordination program for key routes in the developed city, connecting to and through new development areas and to the Interstate-205 interchanges. Include Intelligent Transportation System (ITS) elements to maximize effectiveness, such as adaptive traffic control, synchronized signals, transit and emergency signal priority, and other traffic flow management techniques.<br><br>Measure T-11: Ramp Metering on Interstate 205 - Work with Caltrans and SJCOG to implement ramp metering on Interstate 205 to minimize congestion-related GHG emissions from both through trips and trips generated by Tracy that use Interstate 205. |
| **5. Bicycle and Pedestrian** | Measure T-3: *Support for Bicycling* - Promote bicycle usage through the following: |

TABLE 4.15-7 **RELEVANT PROPOSED SAP MEASURES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant SAP Measures |
|---|---|
| **Programs** | a. Continue to require bicycle parking for non-residential and multi-family uses.<br>b. Amend the Zoning Ordinance to require shower facilities and dressing areas for significant new or redevelopment of non-residential uses.<br>c. Create a bicycle-sharing program.<br>Measure T-5: *Smart Growth, Urban Design and Planning* - Promote pedestrian safety, neighborhood connectivity and walkable neighborhoods through the following:<br>a. Create development standards for commercial, office, and retail zones to promote a principal functional entry that faces a public street. In the Zoning Code, evaluate more restrictive parking requirements to achieve greater pedestrian connections between streets and building entrances. Require all new buildings within the Corridor Overlay Zone and the Village Center (VC) Zone to be located an appropriate distance from the street to promote walkability, such as 10 feet. Within these zones, increase use of windows or storefronts with views into the building along a minimum of portion of the ground floor building walls fronting the primary street, depending on the building context.<br>b. Amend the Municipal Code or create subdivision design standards to require all new development within applicable areas to do the following:<br>(1) Include an interconnected grid of collectors and arterials within the developed city and connecting to and through new development areas with the goal of ¼-mile to ½-mile minimum spacing of two- and four-lane roadways and minimal reliance on six-lane arterials.<br>(2) Include at least one through-street and/or non-motorized right-of-way (nonmotorized rights-of-way may count for no more than 10 percent of the total) intersecting the project boundary at least every 400 feet, or at existing abutting street intervals, whichever is less.<br>(3) Have internal connectivity such that there are at least 200 intersections per square mile.<br>c. Amend the Zoning Ordinance to require adequate pedestrian access through all commercial, residential, and mixed-used development. |

TABLE 4.15-7 **RELEVANT PROPOSED SAP MEASURES SUPPORTING REGIONAL TCMS** (CONTINUED)

| Transportation Control Measures | Relevant SAP Measures |
|---|---|
| | d. Amend the Zoning Ordinance or create new subdivision standards to require new projects to include a pedestrian or bicycle through-connection in any new cul-de-sacs, except where prohibited by topographical conditions.<br>e. Add to the Transportation Master Plan a program to close sidewalk gaps on key routes within the developed city, contingent on grant funding.<br>f. Establish a ½-mile walkability standard for residents to access services and recreational facilities.<br>Measure T-20: *Mixed-Use and Traditional Residential Development* - Continue City efforts to develop specific areas of the city as follows:<br>a. Redevelop the Bowtie area with mixed use development.<br>b. Develop new neighborhoods based on traditional residential development patterns and mixed use in a variety of densities with a pedestrian-friendly network of streets and parks.<br>Measure T-21: *Employment-Generating and High-Density Infill Projects* - Promote smart growth in Tracy through the following:<br>a. Increase the development of employment-generating uses, in particular in West Tracy areas.<br>b. Require mixed use nodes surrounded by high density development that transitions to lower density development.<br>c. In keeping with the City's Growth Management Ordinance Guidelines, prioritize high density infill projects within Redevelopment Areas and Village Centers that have a high level of vehicular and pedestrian connectivity both internally and externally to the project through the allocation of Residential Growth Allotments.<br>d. Develop each phase of development in Tracy Hills at the density and mix of uses that is anticipated at buildout.<br>e. Develop each phase of new development in Tracy as close to existing development as possible and maximize the density and mix of uses for each phase of development. |

c. Exposures to Odors

As noted above, the SJVAPCD's *Air Quality Guidance for General Plans* calls for a General Plan to establish appropriate land use buffers around existing and proposed land uses that would be a source of odors. The proposed General Plan includes policies under Objective AQ-1.2 that would minimize the impact of potential sources of odor. In particular, Policy 11 requires that stationary emission sources be located an appropriate distance away from and downwind of sensitive receptors. Furthermore, Policy 12 requires that residential developments and other projects with sensitive receptors be analyzed in accordance with CARB and SJVAPCD recommendations. These General Plan policies work to ensure that the proposed General Plan would have a less-than-significant impact on exposure to odors.

d. Exposures to Toxic Air Contaminants

The proposed General Plan land use map indicates that land uses containing future sensitive receptors could be located within the CARB's advisory recommendations for setback distances for specific sources of toxic air contaminants, and thus, significant future exposures of sensitive receptors could occur. Significant exposures would be to diesel exhaust particulate matter emitted from truck traffic on the freeways or near distribution centers.

A review of air pollution studies by the CARB indicates that residing close to freeways or busy roadways may result in adverse health effects beyond those typically found in urban areas. Several studies found an association between adverse non-cancer health effects (e.g. asthma) and living or attending school near heavily traveled urban roadways. Many of these studies focused on children and developed causal links (i.e. they have linked proximity of the freeway with hospital or medical visits). However, these proximity studies and others found that the roadway and truck traffic densities were key factors affecting the strength of association with adverse health impacts. For urban roadways, the association of traffic-related emissions with adverse health impacts was generally strongest between 300 and 1,000 feet.

Proximity to freeways increases cancer risk and exposure to particulate matter. Diesel particulate matter, or DPM, poses the greatest cancer risk from roadways. On average, the CARB reports that DPM represents over 70 percent of the potential cancer risk from vehicle travel. The number and type of diesel-fueled vehicles on any roadway is key in understanding the potential cancer risks. Benzene and 1,3-butadiene are carcinogenic toxic air contaminants that are also emitted from motor vehicles and contribute to potential cancer risks. There are other contaminants emitted from motor vehicles, but their potential risks are much smaller.

The CARB reviewed studies that found measured air pollution concentrations from motor vehicles drop off dramatically between the source and 500 feet. These studies were consistent with CARB air quality modeling and risk analyses performed for freeways. The estimated risk from DPM exposure was found to vary substantially due to meteorology, where typical downwind areas had much higher risk than upwind areas. Freeways with low truck volumes had lower risks. The CARB based their 500-foot buffer recommendation on their review of the studies and air dispersion modeling. The CARB's modeling was based on information from 2000 that included higher DPM emissions rates. New vehicle standards, diesel fuel reformulation, and CARB-adopted Diesel Risk Reduction Measures has resulted in lower potential cancer risks near freeways since 2000.

Two freeways affect DPM levels in Tracy: Interstate 205 and Interstate 580. Both of these freeways have relatively low freeway volumes compared to urban freeways, but have high percentages of truck traffic. In 2010, Interstate 205 is estimated to have about 115,000 average daily trips, of which 12 percent will be trucks and 8 percent large trucks. In 2010, Interstate 580 is estimated to have just under 40,000 average daily trips, in which about 18 percent will be trucks and 13 percent large trucks.

A screening analysis of future DPM exposure and associated health effects was conducted. The health impacts associated with the DPM exhaust are expressed in terms of increased risk of contracting cancer by individuals who

reside for extended periods near the sources, such as freeways. This analysis involved the development of DPM emissions for traffic on Interstates 205 and 580 using the EMFAC2007 emission factor model with defaults for San Joaquin County. The EMFAC2007 results were then adjusted to the traffic mix on the freeways that were reported by Caltrans. Traffic was anticipated to increase at a rate of 1 percent per year. Emission rates projected for future years by the EMFAC2007 model were incorporated into the analysis. These rates will decrease in the future. Emission factors and hourly traffic were input into the Ca13qher dispersion model. The model used representative screening meteorological conditions that include a low wind speed of 1 meter per second, a worst-case wind angle search and a stability class of E. The hourly traffic volume was assumed to be 10 percent of the average daily volume. The hourly concentration was converted to an annual concentration using a conversion factor of 0.08. Modeled concentrations were calculated for various distances from the edge of the freeway.

The maximum individual cancer risks were computed using the cancer risk calculation methods and inhalation dose factors recommended by the California Office of Environmental Health Hazard Assessment and the SJVAPCD. The present and future cancer risk posed by traffic on the freeways is expressed in terms of distance from the edge of the travel lanes with the highest traffic volumes. A risk of less than ten in one million is considered to be less than significant under SJVAPCD policies. It should be noted, as discussed previously, that emission rates of DPM from traffic are predicted to decrease substantially in the future. Table 4.15-8 shows the computed health risks for existing and future traffic conditions.

The analysis of existing DPM exposures indicates that significant health risks could occur at distances beyond 500 feet from the edge of Interstate 205 and out to almost 500 feet for Interstate 580. However, cancer risks are based on long-term exposures. The SJVAPCD policy is to assume 70-year lifetime exposures. This analysis, therefore, assumes that the earliest exposure for General Plan development would occur in 2010 and last for 70 years. So, the

TABLE 4.15-8 **SUMMARY OF MAXIMUM MODELED DPM CANCER RISKS (PER MILLION) DUE TO FREEWAY TRAFFIC**

| | Cancer Risk at Receptor Distance from Freeway Edge (Chances Per Million Persons) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Year of Analysis** | **50 Ft** | **100 Ft** | **150 Ft** | **200 Ft** | **250 Ft** | **300 Ft** | **350 Ft** | **400 Ft** | **500 Ft** |
| **Interstate 205** | | | | | | | | | |
| 2010 | 149 | 101 | 75 | 59 | 47 | 38 | 32 | 26 | 18 |
| 2020 | 60 | 41 | 30 | 24 | 19 | 16 | 13 | 10 | 7 |
| 2030 | 37 | 25 | 18 | 15 | 11 | 9 | 8 | 6 | 5 |
| Weighted Risk (2010 and beyond) | 56 | 38 | 28 | 22 | 18 | 14 | 12 | 10 | 7 |
| **Interstate 580** | | | | | | | | | |
| 2010 | 78 | 52 | 38 | 30 | 24 | 19 | 16 | 13 | 9 |
| 2020 | 31 | 21 | 16 | 12 | 10 | 8 | 6 | 5 | 4 |
| 2030 | 19 | 13 | 9 | 7 | 6 | 5 | 4 | 3 | 2 |
| Weighted Risk (2010 and beyond) | 29 | 19 | 14 | 11 | 9 | 7 | 6 | 5 | 3 |

Note: SJVAPCD cancer risk significance threshold is an increased cancer risk of ten in one million, based on 70-year lifetime exposure.

increased traffic levels and lower projected emissions rates were taken into account when predicting the future cancer risks.

Based on the screening cancer risk assessment of DPM, new receptors residing within 400 feet of the edge of Interstate 205 or within 230 feet of Interstate 580 roadways could be exposed to DPM that would significantly contribute to cancer risk (i.e. the incremental cancer risk caused by exposure to freeway

traffic would be greater than ten in one million). The actual distance where cancer risks exceed ten in one million would probably be less since the analysis employed screening meteorological conditions that usually result in higher concentrations. For sensitive receptors, such as residential uses, a significant impact is considered a ten in one million chance of contracting cancer where the receptor is exposed to the source almost 24 hours per day for 70 years.

As noted above, the CARB's recommended setback distances between sensitive receptors and specific sources of air pollutants are advisory in nature, and local land use agencies should balance the recommendations with other goals, including housing and transportation needs, economic development priorities and community character issues.

The proposed General Plan includes policies under Objective AQ-1.2 that could minimize the impact of potential sources of toxic air contaminants. Policies 11 and 12 under Objective AQ-1.2 require that residential developments and other uses with sensitive receptors shall be located an adequate distance from air pollution sources such as freeways and other stationary sources. Under Objective AQ-1.2, Policy 13 requires sources of new toxic air pollutants to prepare a Health Risk Assessment and to establish appropriate buffer zones around those areas that pose substantial health risks, as determined by the Assessment. Finally, Policy 1 under Objective AQ-1.2 requires that the City assess air quality impacts using the latest version of CEQA Guidelines and those prepared by the SJVAPCD. Thus, the City shall follow any additional guidance related to the CARB advisory setback recommendations.

The combination of these policies and guiding mechanisms, in part by implementation of the proposed General Plan, would reduce potentially significant impacts with regard to exposure to toxic air contaminants. However, land use maps identify areas within the screening distances identified. Residential development adjacent to Interstates 205 and 580 would result in a significant impact.

**2. Carbon Monoxide Concentrations**

For local air quality impacts, carbon monoxide (CO) is the pollutant of primary concern. Violations of an ambient CO air quality standard (either 1-hour or 8-hour) would be considered a significant adverse impact. Elevated CO concentrations are usually associated with roadways that are congested with heavy traffic volumes. A CO hotspot is an area that could exceed air quality standards from vehicle emissions under congested traffic conditions. Air pollutant monitoring data indicate relatively low background levels in Tracy.

The Caline4 line-source dispersion model along with emission factors produced by the EMFAC2007 model were used to predict CO concentrations at the most congested intersections in Tracy for existing and future conditions. The most congested intersections are those signalized intersections with high traffic volumes that operate at a level of service (LOS) of D or worse. The model uses worst-case meteorological conditions to predict 1-hour levels that are adjusted to 8-hour levels and added to background concentrations. Predicted concentrations are compared to the State ambient air quality standards. CO concentrations were predicted for existing and future conditions under the proposed General Plan. As shown in Table 4.15-9, CO concentrations are predicted to be below the State ambient air quality standard of 9.0 parts per million (ppm). Furthermore, concentrations are anticipated to decrease substantially in the future, while traffic levels increase.

This is due to the substantial reductions in tailpipe emissions that are anticipated with turnover of the fleet to newer and cleaner vehicles. As a result, the impact on local air quality resulting from the project is considered to be less than significant, and sensitive receptors would not be significantly impacted by CO concentrations.

**3. Construction Dust Emissions**

Development allowed under the proposed General Plan would generate dust that could affect local and regional air quality. Dust is generated from a variety of project construction activities including grading, import/export of fill

TABLE 4.15-9 **PROJECTED 8-HOUR CARBON MONOXIDE LEVELS**

| Location | Existing (2004) | 2030 Projected Buildout of Proposed General Plan |
|---|---|---|
| Eleventh Street and Tracy Boulevard | 6.5 ppm | 2.8 ppm |
| Eleventh Street and Corral Hollow Road | 6.7 ppm | 3.1 ppm |
| Grant Line Road and Corral Hollow Road | 6.5 ppm | 2.9 ppm |

Note: California ambient air quality standard for 8-hour carbon monoxide levels is 9.0 ppm. Modeled levels are added to an 8-hour background concentration of 2.0 ppm.
Source: Illingworth & Rodkin, June 2008.

material, and vehicle travel on unpaved surfaces. Soil can also be tracked out onto paved roads where it is entrained in the air by passing cars and trucks. The rate of dust emissions is related to the type and size of the disturbance, meteorological conditions and soil conditions.

Emissions of dust (or $PM_{10}$) from construction activities are difficult to predict because of the many factors that affect emissions and dispersion. The SJAPCD regulates emissions from construction activities through Regulation IV (Prohibitions of certain activities, such as open burning and visible emissions) and Regulation VIII (Fugitive $PM_{10}$ Prohibition). This EIR takes an approach of specifying the appropriate control measures that are required for construction projects to ensure that emissions are effectively controlled. Objective AQ - 1.2, Policies 1 and 2 require air quality assessment in accordance with CEQA guidelines prepared by the SJVAPCD. Objective AQ - 1.2, Policy 3 requires a developer to implement best management practices to reduce air pollution during construction and operations of a project. Objective AQ - 1.2, Policies 14 and 15 require dust control measures and all reasonable mitigation measures to be implemented prior to approval.

In addition, the SJVAPCD and the CARB have regulations that address the handling of hazardous air pollutants such as asbestos that may be released during demolition activities. The SJVAPCD rules and regulations address both the handling and transport of these contaminants. An air toxic control measure adopted by the CARB requires measures to minimize asbestos emissions in areas known to have naturally occurring asbestos. Construction work performed in accordance with SJVAPCD and CARB rules and regulations and that implements construction air pollutant control measures recommended by the SJVAPCD would not be expected to result in significant air quality impacts.

**4. Construction Exhaust Emissions**

Similar to construction dust, exhaust emissions are difficult to predict. Exhaust from diesel powered construction equipment affects regional ozone levels as well as localized particulate levels. Diesel particulate matter is considered a toxic air contaminant. Diesel fuel will be reformulated over the next several years to reduce particulate emissions. In addition, cleaner diesel powered equipment will replace older construction equipment leading to an overall decrease in emissions of exhaust particulate matter and ozone precursor emissions. As previously discussed, the SJVAPCD's Indirect Source Review Rule would require construction exhaust emission reductions from construction activities. These would apply to larger projects. However, emission reductions are still needed on individual construction projects to reduce the exposure of sensitive receptors to toxic air contaminants and reduce regional ozone levels. Objective AQ - 1.2, Policies 1 and 2 require air quality assessment in accordance with CEQA guidelines prepared by the SJVAPCD. Objective AQ - 1.2, Policy 3 requires a developer to implement best management practices to reduce air pollution during construction and operations of a project. Measures that constitute reasonable best available control measures would reduce construction exhaust emissions to a less-than-significant impact.

### *D. Impacts and Mitigation Measures*

While policies and other regulations would reduce impacts to air quality to the extent feasible, significant impacts would occur in regard to air quality impacts under the proposed General Plan and Sustainability Action Plan.

**Impact AIR-1**: The General Plan and Sustainability Action Plan would not be consistent with applicable clean air planning efforts of the SJVAPCD, since vehicle miles traveled that could occur under the proposed General Plan would exceed that projected by the SJCOG, which are used in projections for air quality planning. The projected growth could lead to an increase in the region's VMT beyond that anticipated in the SJCOG and SJVAPCD clean air planning efforts. Development in Tracy would contribute to the on-going air quality issues in the San Joaquin Valley Air Basin.

> Mitigation Measure AIR-1: The City of Tracy will facilitate development applicants' participation in the San Joaquin Valley Air Pollution Control District's Indirect Source Review program. The Indirect Source Review program requires developers of larger projects to reduce emissions and provides on-site mitigation measures to help developers reduce air impacts. However, the mitigation measure identified above may not completely mitigate this impact. Therefore, it is considered a *significant and unavoidable* impact.

**Impact AIR-2**: The proposed General Plan does not provide adequate buffers between new or existing sources of toxic air contaminants and new or existing residences or sensitive receptors.

> Mitigation Measure AIR-2: Add a new Action under Objective AQ-1.2 as follows:
>
> "Require supplemental project studies that evaluate air quality health risks for proposed developments that place sensitive receptors within 400 feet of Interstate 205, within 230 feet of Interstate 580, or within 1,000 feet of large truck warehousing facilities or truck facilities where

trucks with transportation refrigeration units operate almost continuously. Mitigation measures to reduce significant health risks shall be included in final project designs."

Significance After Mitigation: *Less than significant.*

## 4.16 GREENHOUSE GAS EMISSIONS

This section provides an overview of the regulatory framework, describes existing conditions, analyzes the potential impacts, and includes recommended mitigation measures, if necessary, to address the impacts related to greenhouse gas (GHG) emissions.

### *A. Environmental Setting*

Gases that trap heat in the atmosphere, or GHGs, regulate the earth's temperature. This is known as the Greenhouse Effect, which is responsible for maintaining a habitable climate. GHGs are emitted by natural processes and human activities. Emissions from human activities, including motor vehicle use, electricity production, industry and agriculture, are elevating the concentration of GHGs in the atmosphere, and have led to a trend of unnatural warming of the earth's natural climate, known as global warming or climate change.

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally-occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion (a particular concern in the low-lying Sacramento–San Joaquin Delta, where potable water delivery pumps could be threatened), and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include, but are not necessarily limited to, more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters, such as flooding, hurricanes and drought; and increased levels of air pollution.

Prominent GHGs that contribute to global warming include the following gases, in addition to ozone and water vapor.

- Carbon dioxide and nitrous oxide, byproducts of fossil fuel combustion.
- Nitrous oxide, associated with agricultural operations such as crop fertilization.
- Methane, commonly created by off-gassing from agricultural practices (e.g. keeping livestock) and landfill operation.
- Chlorofluorocarbons, widely used in the past as refrigerants, propellants and cleaning solvents. Their production has been stopped by international treaty.
- Hydrofluorocarbons, now used as a substitute for chlorofluorocarbons in refrigeration and cooling.
- Perfluorocarbons and sulfur hexafluoride emissions, commonly created by industries such as aluminum production and semi-conductor manufacturing.

## *B. Regulatory Framework*

Agencies and organizations from the international level to the local level are working to develop and implement solutions to control GHG emissions and slow global warming. The major efforts are described in this section.

### 1. International Action

The United Nations Framework Convention on Climate Change (UNFCCC), an international treaty that has been ratified by 192 countries, leads international efforts to address the threats of climate change. The Convention encourages industrialized countries to reduce their GHG emissions.

The Kyoto Protocol, an addition to the treaty adopted in 2007, sets legally binding measures requiring countries to reduce emissions. The Kyoto Protocol sets binding emission reductions targets for 37 industrialized countries and Europe to reduce collective emissions about 5 percent below 1990 levels over the five year period between 2008 and 2012. The Kyoto Protocol has been ratified by 189 countries as of late 2009. Although the United States is re-

sponsible for a large potion of the emissions and signed the Protocol, Congress did not ratify it.

The Copenhagen Accord, adopted at the United Nations Climate Change Conference in Copenhagen in December 2009, is a non-binding agreement to keep maximum temperature rise to below 2 degrees Celsius (°C) and to raise funds to enable developing countries to take action on climate change.

**2. Federal Laws and Regulations**

The United States does not have any federal regulations or policies related to GHG emissions. However, in December 2009, Environmental Protection Agency (EPA) Administrator Lisa Jackson signed findings that elevated concentrations of the six key GHGs in the atmosphere endanger the public health and welfare of current and future generations, and that the combined emissions of GHGs from new motor vehicles contribute to the GHG air pollution that endangers public health and welfare.[1] While the final endangerment finding does not automatically impose any requirements, it allows EPA to finalize proposed GHG emission standards for light-duty vehicles, which were proposed in conjunction with the Department of Transportation's Corporate Average Fuel Economy (CAFE) standards earlier in 2009.[2]

**3. State Laws and Regulations**

California first addressed climate change in 1988 with the passage of Assembly Bill (AB) 4420, which directed the California Energy Commission to study global warming impacts to the State and develop an inventory of GHG emission sources. California began adopting regulations to reduce GHG emissions following the passage of AB 1493 in 2002, also known as the Pavley Bill. This legislation directed the California Air Resources Board (CARB) to

[1] U.S. Environmental Protection Agency website, "EPA's Endangerment Finding," http://www.epa.gov/climatechange/endangerment/downloads/EndangermentFinding_LegalBasis.pdf, accessed on January 13, 2010.

[2] U.S. Environmental Protection Agency website, http://epa.gov/climatechange/endangerment.html, accessed on January 14, 2010.

adopt regulations that achieve the maximum feasible and cost effective reduction in GHG emissions from motor vehicles.

In 2005, the Governor of California issued Executive Order S-3-05, which included GHG emission reduction targets. To meet these targets, the Governor directed State agencies to develop a Climate Action Plan. A Climate Action Team, led by the Secretary of the California EPA, implemented the global warming emission reduction programs identified in the Climate Action Plan and reports on progress made toward meeting the Governor's GHG emission targets.

In 2006, the Governor of California signed AB 32, the Global Warming Solutions Act, into legislation. This bill requires that California cap its GHG emissions at 1990 levels by 2020; establish a program for Statewide GHG emissions reporting; and establish monitoring and enforcement of that program. AB 32 also requires that CARB adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

To meet the requirements described above, CARB published a list of discrete GHG emissions reduction measures that can be implemented immediately. In addition, CARB's Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions. A proposed Scoping Plan to reduce GHG emissions was released in October 2008, and the final plan was adopted on December 12, 2008.

CARB is targeting all sources of GHG emissions. The main measures to reduce GHG emissions are contained in the final AB 32 Scoping Plan. The plan includes a range of GHG reduction actions. Central to the plan is a cap-and-trade program covering 85 percent of the State's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and three Canadian provinces, to create a regional carbon market. The plan also proposes that utilities produce a third of their energy from renewable sources, such as wind, solar and geothermal, and pro-

poses to expand and strengthen existing energy efficiency programs and building and appliance standards. The plan also includes full implementation of the Pavley standards to provide a wide range of less polluting and more efficient cars and trucks to consumers who will save on operating costs through reduced fuel use. It also calls for development and implementation of the Low Carbon Fuel Standard, which will require oil companies to make cleaner domestically produced fuels. Following adoption of the plan, the regulatory process began to implement the plan. This will last two years.

California Senate Bill (SB) 97, which was signed into law in 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. The bill directs the State to prepare, develop, and transmit to State resource agencies guidelines for feasible mitigation of GHG emissions or the effects of GHG emissions. The resource agencies are required to adopt these guidelines by 2010.

Pursuant to SB 97, the Governor's Office of Planning and Research (OPR) recently released updated CEQA guidelines to address GHGs. OPR recommends that each public agency develop an approach to address GHG emissions that is based on best available information. The approach includes three basic steps: (1) identify and quantify emissions; (2) assess the significance of the emissions; and (3) if emissions are significant, identify mitigation measures or alternatives that will reduce the impact to a less-than-significant level. The guidelines encourage agencies to consider a number of factors in evaluating GHG emissions, including the impact of the project on attaining the State's goal of reducing GHG emissions to 1990 levels by 2020, as directed in AB 32, and the extent of potential reductions in GHG emissions from the proposed project in comparison to the existing setting.

Recently, California enacted SB 375 to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 would develop emissions-reduction goals around which regions can apply to planning activities. SB 375 provides incentives for local governments and developers to implement new conscientiously planned growth patterns. This includes in-

centives for creating attractive, walkable and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of additional alternative transportation options that would reduce traffic congestion and vehicle trips and miles traveled would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency to develop regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB would work with the metropolitan planning organizations (e.g. SJCOG) to align their regional transportation, housing and land use plans to reduce vehicle miles travelled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants and particulate matter.

**4. Regional Policies**

The San Joaquin Valley Air Pollution Control District adopted the Climate Change Action Plan in August 2008. The Plan has been developed to assist local land use agencies and businesses to comply with State requirements.

In December 2009, the District adopted standards that require projects to reduce their GHG emissions by at least 29 percent from business as usual (BAU) levels, through application of best performance standards or through other measures, to achieve a less than cumulatively significant impact under CEQA.

**5. Local Action**

In November 2008, the Tracy City Council adopted Resolution No. 2008-241, committing the City to pursue sustainable development practices to achieve specific goals identified by the State of California to be reflective of sustainable communities.

Tracy is enrolled as one of two pilot cities in the Emerald Cities Program, a public-private partnership sponsored by the California Natural Resources

Agency (CNRA) and administered by the State Department of Conservation (DOC). Through this program, the City of Tracy is working with the DOC to accelerate progress toward the State's aggressive environmental goals, including those indicated in AB 32 and SB 375.

### *C. Existing Conditions*

Tracy's GHG inventory for the baseline year 2006 was compiled using the International Council for Local Environmental Initiatives' (ICLEI) Clean Air and Climate Protection (CACP) software, and is shown in Tables 4.16-1 and 4.16-2. The inventory includes separate community-wide and municipal analyses, which are described in the two sections below. GHG emissions in Tracy are a function of the energy, transportation and land use, solid waste and water sectors, each of which is described in the sub-sections below. Additional information on these and other sources of GHG emissions is provided in Appendix C.

In total, GHG emissions in Tracy in 2006 were 1,350,321 metric tons of carbon dioxide equivalent ($MTCO_2e$). This equates to per capita GHG emissions of 11.6 $MTCO_2e$.[3]

#### 1. Community-Wide Emissions

Tracy's 2006 community emissions were 1,338,872 metric tons of carbon dioxide equivalent ($CO_2e$) from the residential, commercial, industrial, transportation, waste and water sectors, as well as from fugitive and refrigerant emissions. Burning fossil fuels in motor vehicles and for energy use in buildings and facilities represent the major contributor to Tracy's GHG emissions.

[3] Based on the total population and employment in Tracy in 2006, which was approximately 116,500 residents and workers. From: Watten, Mackenzie and Mike Wallace. Fehr & Peers. Personal communication with Tanya Sundberg, DC&E. January 29, 2010.

TABLE 4.16-1 **COMMUNITY-WIDE EMISSIONS INVENTORY**

| Sources | Metric Tons of $CO_2e$ | Percentage of Total |
|---|---|---|
| Residential energy use | 220,036 | 16.4% |
| Commercial and industrial energy use | 160,401 | 12.0% |
| Fugitive emissions and refrigerants | 90,233 | 6.7% |
| Transportation | 849,673 | 63.5% |
| Waste | 18,190 | 1.4% |
| **Total** | **1,338,533** | **100%** |

Source: Town-Green, 2009, Clean Air and Climate Protection model (see Appendix C).

TABLE 4.16-2 **MUNICIPAL EMISSIONS INVENTORY**

| Sources | Metric Tons of $CO_2e$ | Percentage of Total |
|---|---|---|
| Buildings and facilities | 247 | 2.2% |
| Streetlights and traffic signals | 1,798 | 15.7% |
| Fugitive emissions and refrigerants | 323 | 2.8% |
| Vehicle and transit fleet | 958 | 8.4% |
| Employee commute | 3,650 | 31.9% |
| Airport facilities | 28 | .2% |
| Solid waste | 2,211 | 19.3% |
| Wastewater | 1,512 | 13.2% |
| Water delivery | 722 | 6.3% |
| **Total** | **11,449** | **100%** |

Source: Town-Green, 2009, Clean Air and Climate Protection model (see Appendix C).

This single largest source of emissions consists of fuel consumption in the transportation sector, contributing 63 percent of total emissions.

a. Energy

Energy production is a major economic, security, and environmental challenge at the local, national, and global levels. Although Tracy receives its energy from PG&E, which provides an energy mix that is much cleaner than what most other U.S. utilities provide, it still relies on fossil fuels – coal, oil, and natural gas – for about half of its energy.[4] Community-wide stationary energy consumption includes electricity and natural gas use for residential, commercial, and industrial sectors. Community-wide energy consumption for 2006 was approximately 3,200,000 million metric British thermal units (MMBtu), resulting in 380,776 metric tons of $CO_2e$, or approximately 28 percent of total community-wide emissions.

Of this total, residential energy consumption is responsible for the largest share. Tracy residences consumed approximately 227 million kilowatt hours (kWh) of electricity and 11 million therms of natural gas, resulting in the release of 220,036 metric tons of $CO_2e$. Major residential energy uses include refrigeration, lighting, and water heating. Commercial and industrial buildings consumed 168,310,545 kWh of electricity and 7,808,664 therms of natural gas, emitting 160,740 metric tons of $CO_2e$.

b. Transportation and Land Use

With increases in urbanized land over time, vehicle miles traveled (VMT) has grown dramatically, which increases GHG emissions. In 2006, the total daily VMT in Tracy was 3.3 million VMT.[5] The community transportation sector

[4] Pacific Gas and Electric website, http://www.pge.com/myhome/environment/pge/cleanenergy/, accessed on March 1, 2010.

[5] The "Citywide Travel Demand Model" used to analyze Tracy's transportation emissions from vehicle fuel combustion includes all of the VMT associated with trips completed within Tracy and half of the VMT generated by jobs and residences located in Tracy that result in travel to or from external destinations. The model does

includes travel on State highways, local roads, and the commuter train, as well as aviation and jet fuel from the Tracy Municipal Airport and off-road vehicles and equipment. These activities were responsible for 849,673 metric tons of $CO_2e$ emissions in 2006, representing approximately 64 percent of Tracy's community-wide GHG emissions.

c. Solid Waste

The production and transport of consumer products creates large amounts of GHGs. A large percentage of these products are disposed of after only one use, requiring more raw materials to be extracted to replace these products. Making new products from raw materials generally requires more energy, uses more water, and creates more air and water pollution than reusing materials or making the same product from recycled materials, thereby increasing GHG emissions and contributing to climate change.

Once in the landfill, solid waste continues to emit GHGs, most notably methane ($CH_4$), which is approximately 21 times more potent than $CO_2$ in terms of its global warming impacts.[6] Decomposition of organic materials in landfills produces methane, a GHG. Tracy sent approximately 92,202 tons of solid waste to the San Joaquin County Foothill Landfill, resulting in 18,190 metric tons of $CO_2e$, which represents 1 percent of total community-wide emissions.

d. Water

In Tracy, water is supplied by a combination of surface and groundwater sources. Surface water generally comprises between 50 and 60 percent of Tracy's total water supply, and is provided by the United States Bureau of Reclamation (USBR). The USBR acts as a water wholesaler to the City and provides surface water to help fulfill City needs. The supply of groundwater resources is dependent on the capacity of the Tracy Aquifer, which is part of

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not include vehicles that pass through Tracy without either a point of origin or a destination within the city.

[6] U.S. Environmental Protection Agency website, http://www.epa.gov/outreach/scientific.html, accessed on March 1, 2010.

the larger San Joaquin Valley groundwater basin. According to the 2005 *City of Tracy Urban Water Management Plan*, Tracy's annual water demand in 2005 was 18,500 acre-feet.[7] The City manages water delivery for community consumption; therefore, emissions associated with water delivery are included in the municipal inventory, below. Emissions from water delivery are a negligible percentage of the community emissions inventory.

**2. Municipal Emissions**

Tracy's municipal GHG emissions inventory for 2006 was 11,449 metric tons of CO2e, comprising less than 1 percent of the City's total emissions. The municipal inventory is discussed in greater detail below for each subsector.

a. Energy

The energy sector of the municipal inventory includes electricity and natural gas use for the operations of municipal buildings and facilities, streetlights and traffic signals. Municipal operations consumed approximately 11 million kWh of electricity and 41,000 therms of natural gas, or approximately 42,000 MMBtu. Buildings and facilities were responsible for 247 metric tons of $CO_2e$, or 2 percent of municipal emissions, and streetlights and traffic signals accounted for 1,798 metric tons of $CO_2e$, or 16 percent of municipal emissions.

b. Transportation and Land Use

Transportation-related activities within the municipal inventory include commuting by City employees and the City's vehicle fleet. Commuting was responsible for 3,650 metric tons of $CO_2e$ and 32 percent of municipal emissions. Tracy's fleet includes all vehicles owned and operated by the City, including Tracer, the public bus system, and contractor vehicles performing City functions. The vehicle and transit fleet emitted approximately 958 metric tons of $CO_2e$, or 8.75 percent of municipal emissions. Together, these

[7] Erler & Kalinowski, Inc., 2005, *City of Tracy Urban Water Management Plan*, pages 13-15.

activities are responsible for approximately 40 percent of the municipal inventory.

c. Solid Waste

In 2006, the City's solid waste facilities emitted 2,211 metric tons of $CO_2e$ emissions. Because Tracy Delta Solid Waste Management does not distinguish between municipal- and community-generated waste, the solid waste generated by municipal operations is included in the community-wide figure of 92,206 tons of waste sent to the landfill.

d. Water

Water delivery generated 722 metric tons of $CO_2e$ in 2006, accounting for 6 percent of Tracy's municipal inventory. Nearly all of the water supply is devoted to community water consumption; only 1 percent of the total water demand is from municipal uses. Emissions from water distribution result from energy use for facilities and pumping within Tracy's boundaries, as well as for transporting imported water from the Delta Mendota Canal and the Stanislaus River to Tracy.

### *D. Standards of Significance*

The proposed General Plan and Sustainability Action Plan would have a significant impact to GHG emissions if they would:

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, including AB 32's goal to reduce GHG emissions in 2020 to 1990 levels.
- Subject property and persons to additional risk of physical harm related to flooding, public health, wildfire risk, and other impacts resulting from climate change.

As indicated in the first bullet above, the General Plan and Sustainability Action Plan would result in a significant impact if they would conflict with applicable plans, policies, or regulations adopted for the purpose of reducing

GHG emissions, including AB 32's goal to reduce 2020 GHG emissions to 1990 levels. The San Joaquin Valley Air Pollution Control District has interpreted AB 32 to mean that projects within its district that result in a 29 percent reduction in GHG emissions from BAU projected emissions are considered to have a less-than-significant impact on GHG emissions. Consistent with San Joaquin Valley Air Pollution Control District interpretation, the evaluation in Section E below considers whether the General Plan and Sustainability Action would reduce 2020 BAU projected emissions by 29 percent.

As explained further in Appendix C, projected 2020 BAU emissions for Tracy are 1,748,970 metric tons $CO_2e$. Of this total amount, 1,735,022 metric tons $CO_2e$ are community-wide emissions, which represent an increase of approximately 30 percent over the 2006 baseline inventory. For municipal emissions, the 2020 BAU forecast is 13,948 metric tons $CO_2e$, an increase of approximately 22 percent over the baseline. Tracy's per capita GHG emissions in 2020 under BAU conditions are projected to be 11.5 metric tons $CO_2e$,[8] a slight decrease from the 2006 per capita emissions. These projections are based on the assumption that GHG emissions will increase as Tracy's population grows.

In order to reduce 2020 business-as-usual emission by 29 percent and have a less-than-significant impact, the General Plan and Sustainability Action Plan would need to reduce GHG emissions in Tracy in 2020 by 507,201 metric tons $CO_2e$.

### *E. Impact Discussion*

This section provides an analysis of the effects of the proposed General Plan and Sustainability Action Plan on GHG emissions.

[8] Based on the total anticipated population and employment in Tracy in 2020, approximately 152,100 residents and workers. From: Watten, Mackenzie and Mike Wallace. Fehr & Peers. Personal communication with Tanya Sundberg, DC&E. January 29, 2010.

**1. Conflict with Applicable Plans Adopted for the Purpose of Reducing GHG Emissions**

The City of Tracy has, through the proposed General Plan and Sustainability Action Plan planning processes, developed a variety of policies and measures to meet applicable policies and regulations intended to reduce GHG emissions. The City has enrolled as one of two pilot cities in the Emerald Cities Program, a public-private partnership sponsored by the CNRA and administered by the DOC. Through this program, the City of Tracy is working with the DOC to accelerate progress toward the State's aggressive environmental goals, including those indicated in AB 32 and SB 375.

As described in Chapter 3, the proposed General Plan and Sustainability Action Plan includes policies and measures to reduce GHG emissions, supporting the State's emission reduction targets and other environmental goals.

The proposed General Plan Land Use Element includes new policies to encourage Downtown sites to be developed at the highest densities possible, consistent with environmental protection and land use compatibility goals, and require the creation of a specific plan to guide efficient and orderly development within Tracy's Secondary Residential Growth Areas. In the Community Character Element, proposed policies encourage the development of urban green spaces, promote the incorporation of pedestrian and bicycle access into site design, and discourage new strip commercial development. The Economic Development Element includes proposed policies encouraging green businesses, local procurement of green products, and employment opportunities that reduce the need for vehicle trips. The Circulation Element proposes additional policies to: encourage the use of non-motorized transportation, transit, and low-emission vehicles; avoid disrupting sensitive environmental resources during transportation projects; and use sustainable materials in road construction and repair projects. Proposed policies in the Open Space and Conservation Element incorporate resource conservation through construction and development practices, expand the urban forest, and use water-efficient landscaping techniques. The proposed Public Facilities Element includes policies that call for rehabilitating and reusing municipal buildings

whenever feasible, and that require standards to reduce water and wastewater treatment demand in new development and redevelopment. In the Air Quality Element, proposed policies would develop a green building standard for new development, encourage solar panels on new development, encourage use of light emitting diodes (LED) for outdoor lighting, and reduce GHG emissions from municipal operations and new development.

The proposed Sustainability Action Plan includes 39 measures in the energy, transportation and land use, solid waste and water sectors that would reduce GHG emissions. The GHG emission reductions associated with each measure are provided in Appendix D.

- Energy sector measures would reduce GHG emissions in Tracy in 2020 by 132,384 metric tons $CO_2e$.
- Transportation and land use sector measures would reduce GHG emissions in Tracy in 2020 by between 149,049 and 252,742 metric tons $CO_2e$.[9]
- Solid waste sector measures would reduce GHG emissions in Tracy in 2020 by 98,689 metric tons $CO_2e$.
- Water sector measures would reduce GHG emissions in Tracy in 2020 by 2,300 metric tons $CO_2e$.

In total, it is estimated that measures in the General Plan and Sustainability Action Plan would reduce 2020 BAU GHG emissions by between 382,422 and 486,115 metric tons $CO_2e$.

[9] The range of GHG emission reductions is based on different models for measuring the benefits from the external State-level measures that improve fuel and vehicle efficiency. The lower range represents a conservative modeling approach; the upper range is based on a method of modeling these fuel and vehicle efficiency standards by the Bay Area Air Quality Management District, but adjusted for Tracy-specific data.

While the General Plan and Sustainability Action Plan make significant headway in reaching the GHG target, an additional reduction of between 124,779 and 21,086 metric tons $CO_2e$ is needed in order to fully achieve a 29 percent reduction from BAU projected emissions. As part of the process to develop the General Plan and Sustainability Action Plan, many potential measures were considered. Some of the potential measures were not included in the Sustainability Action Plan for a variety of reasons, such as a lack of data or examples and political and/or economic constraints. However, City staff will maintain a list of these other potential measures for additional investigation and consideration over the next ten years. Therefore, the remaining reductions that are needed in order to reach the GHG target could be achieved by these other potential measures.

The policies and measures in the proposed General Plan and Sustainability Action Plan also provide additional GHG-related benefits that are not fully recognized in the GHG emission levels that were quantified for this analysis. For instance, the General Plan and Sustainability Action Plan measures would increase the percentage of jobs in Tracy that are filled by residents of Tracy to 72 percent, an increase of 32 percent from the conditions in 2000.[10] This increase in worker capture will significantly decrease commute trips for Tracy residents, a major component of Tracy's GHG emissions inventory.

In addition, implementation of the proposed General Plan and Sustainability Action Plan would decrease the per capita GHG emissions in Tracy compared to 2006 and 2020 BAU levels. Tracy's per capita GHG emissions were 11.6 metric tons $CO_2e$ in 2006, and are projected to slightly decrease to 11.5 metric tons $CO_2e$ in 2020 under BAU conditions. With implementation of the proposed General Plan and Sustainability Action Plan, per capita GHG emissions in 2020 are projected to be between 8.2 and 8.9 metric tons $CO_2e$, a decrease of between approximately 23 and 29 percent from existing conditions.

[10] Based on data from the US Census, the percentage of jobs in Tracy that were filled by residents of Tracy was 40 percent in 2000.

Although the General Plan and Sustainability Action Plan include many goals, policies, and measures that would reduce GHG emissions from projected BAU levels, the proposed project would not meet the San Joaquin Valley Air Pollution Control District's threshold of a 29 percent reduction in GHG emissions from BAU projected emissions. Therefore, the proposed General Plan and Sustainability Action Plan would result in a *significant* GHG emission impact.

**2. Risk of Physical Harm Related to Impacts Resulting from Climate Change**

Development allowed by the proposed General Plan would contribute to increased levels of GHG emissions and global warming due to increased vehicle use, energy use from new residences and expanded non-residential development, generation of waste, and construction-related activities. These factors would contribute to climate change, which affects changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates. Such changes result in impacts to public health, including, but not limited to, flooding risk. In particular, regional climate change modeling for northern California shows a decrease in precipitation falling as snow and an increase in rainfall during the winter, as well as an increase in the frequency of intense rainfall events.[11] These conditions will heighten local flood risk.

As discussed above, the proposed General Plan and Sustainability Action Plan includes policies and measures that would reduce GHG emissions. In addition, numerous polices in the proposed General Plan address the City's emergency preparedness in the event of natural or man-made disasters. The City would commit to keeping emergency access routes free of traffic impediments and regularly update those routes (Objective SA-6.1, P1 and A2). The City would also commit to updating its emergency preparedness plan in response

[11] Knowles, et al., 2006, as cited in California Energy Commission, May 2009, *The Future Is Now – An Update on Climate Change Science Impacts and Response Options For California*, CEC-500-2008-071, prepared by the California Climate Change Center.

to changes in land use, population and city boundaries, and to conducting periodic drills using the emergency response systems to test the effectiveness of City procedures (Objective SA-6.1, A1 and A4). The proposed General Plan also addresses the issue of educating the public about emergency preparation and evacuation procedures (Objective SA-6.1, A5).

Furthermore, the proposed General Plan specifically addresses flood risks. Proposed policies and actions limit development within floodplains (Objective SA-2.1, P1, P2 and P3; Objective SA-2.2, P2), ensure storm drainage capacity for 100-year flood flows (Objective SA-2.1, A2), and improve planning efforts related to flood risk (Objective SA-2.1, A3 and A4; Objective SA-2.2, P1, P3 and A1).

Taken together, these policies and actions would ensure adequate emergency preparedness to handle impacts associated with climate change. Therefore, the impact would be *less than significant*.

### *F. Impacts and Mitigation Measures*

**Impact GHG-1**: Implementation of the proposed General Plan and Sustainability Action Plan would reduce GHG emissions from 2020 projected BAU conditions by 22 and 28 percent. Therefore, the project would not meet the San Joaquin Valley Air Pollution Control District's threshold of reducing GHG emissions by 29 percent.

While the General Plan and Sustainability Action Plan do not meet the GHG threshold, the documents include all measures that are considered to be feasible at this time. The process to develop the Sustainability Action Plan and General Plan included a comprehensive review of other climate-related plans and policies, including the California Air Pollution Control Officers Association's (CAPCOA) *Model Policies for Greenhouse Gases in General Plans* and Green Cities California's *Best Practices*, and recommendations from the con-

sultant team in order to identify a wide array of potential measures.[12,13] All measures that were considered feasible were included in the General Plan and Sustainability Action Plan. Therefore, no additional mitigation would be feasible and the impact is considered *significant and unavoidable*.

[12] California Air Pollution Control Officers Association, June 2009, *Model Policies for Greenhouse Gases in General Plans.*

[13] Best Practices website of Green Cities California, http://www.greencities california.org/, accessed on March 22, 2010.

# 5 ALTERNATIVES TO THE PROPOSED PROJECT

This chapter discusses alternatives to the proposed General Plan. CEQA Guidelines §15126.6 requires that an EIR include the description and a comparative analysis of alternatives to the proposed project, including both a No Project Alternative and a reasonable range of alternatives that could feasibly attain the project's objectives and avoid or substantially lessen any of the significant effects of the project. However, CEQA Guidelines §15163(2b) states that a Supplemental EIR "need contain only the information necessary to make the previous EIR adequate for the project as revised." Therefore, because this is a Supplemental EIR, this chapter only considers alternatives that would address those significant impacts that are the result of the proposed General Plan Amendment and Sustainability Action Plan; it does not consider alternatives that would address significant impacts that were found in the 2006 General Plan Draft EIR because such alternatives were already evaluated in that EIR. For a full alternatives analysis of the 2006 General Plan, please see Chapter 5, Alternatives to the Proposed Project, of the 2006 General Plan Draft EIR.

Overall, there is a decrease in the intensity of impacts in most environmental topics from the 2006 General Plan EIR as a result of the proposed General Plan Amendment and Sustainability Action Plan. The only new impacts as a result of the proposed General Plan are Impacts AIR-3 and GHG-1, below, which are related to cumulative air quality issues and greenhouse gas (GHG) emissions, respectively. These impacts were not found in the 2006 General Plan EIR because GHG emissions were not evaluated under CEQA in 2006.

- **Impact AIR-3**: Buildout under the proposed General Plan and Sustainability Action Plan is projected to lead to substantial increases in vehicle travel and contribute to existing air quality issues in the San Joaquin Valley Air Basin. These air quality impacts associated with increases in regional traffic are anticipated to occur after 2030, constituting a cumulatively significant impact.

  Mitigation Measure AIR-3: No mitigation measures have been identified for this impact. Therefore, it is a *significant and unavoidable* cumulative impact.

- **Impact GHG-1**: Implementation of the proposed General Plan and Sustainability Action Plan would reduce GHG emissions from 2020 projected Business as Usual (BAU) conditions by between 22 and 28 percent. Therefore, the project would not meet the San Joaquin Valley Air Pollution Control District's threshold of reducing GHG emissions by 29 percent.

  Mitigation Measure GHG-1: While the proposed General Plan and Sustainability Action Plan do not meet the GHG threshold, the documents include all measures that are considered to be feasible at this time. The process to develop the Sustainability Action Plan and General Plan included a comprehensive review of other climate-related plans and policies, including the California Air Pollution Control Officers Association's (CAPCOA's) *Model Policies for Greenhouse Gases in General Plans* and Green Cities California's *Best Practices*, and recommendations from the consultant team in order to identify a wide array of potential measures. All measures that were considered feasible were included in the General Plan and Sustainability Action Plan. Therefore, no additional mitigation would be feasible, and the impact is considered *significant and unavoidable*.

This chapter evaluates the alternatives to the proposed General Plan and Sustainability Action Plan against these two new impacts. This alternatives evaluation includes the same alternatives that were included in the 2006 General Plan EIR. The 2006 General Plan EIR included the following four alternatives:

- **No Project Alternative.** The proposed General Plan and Sustainability Action Plan would not be adopted and the existing General Plan for the City of Tracy, including the existing Sphere of Influence (SOI), would remain in effect. This alternative includes development projected in both the Tracy Hills Specific Plan and Tracy Gateway Planned Unit Development areas, since these areas have adopted plans.
- **Concentrated Growth Alternative.** Under this alternative, the proposed General Plan would include policy direction to ensure that new

growth would be concentrated near the existing urbanized area (both within and outside the City limits). This alternative would include development of all available land within the existing City limits, except for the Tracy Hills Specific Plan area. It would also include development in areas identified as "Secondary Residential Growth Areas" in Figure 2-3 of the proposed General Plan. Under this alternative, the City's SOI would be contracted to encompass only the areas identified for development. The same General Plan land use designations as under the proposed General Plan would be applied to these areas. All other policies proposed for the General Plan and Sustainability Action Plan would be included.

- **City Limits Alternative.** Under this alternative, the proposed General Plan land use designations would be applied to all land within the existing City limits. The SOI would be contracted to become coterminous with the existing City limits. All other policies proposed for the General Plan and Sustainability Action Plan would be included.
- **Existing SOI Alternative.** Under this alternative, the proposed General Plan land use designations would be applied to all land within both the existing City limits and the existing Sphere of Influence (SOI). However, no new development-oriented General Plan designations or new development would occur outside of the existing SOI. All other policies proposed for the General Plan and Sustainability Action Plan would be included.

### *A. Impact AIR-3*

All four alternatives would result in increases in vehicle miles traveled (VMT) and regional traffic, which would contribute to existing air quality issues in the San Joaquin Valley Air Basin. Therefore, all four alternatives would result in the same significant and unavoidable cumulative air quality impact as the project.

### *B. Impact GHG-1*

As described in Chapter 4.16, Impact GHG-1 is a result of the General Plan and Sustainability Action Plan conflicting with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions, including AB 32's goal to reduce 2020 GHG emissions to 1990 levels. The San Joaquin Valley Air Pollution Control District has interpreted AB 32 to mean that projects within its district that result in a 29 percent reduction in GHG emissions from BAU projected emissions are considered to have a less-than-significant impact on GHG emissions. Consistent with San Joaquin Valley Air Pollution Control District interpretation, the evaluation in Chapter 4.16 considers whether the General Plan and Sustainability Action would reduce 2020 BAU projected emissions by 29 percent. As described in Chapter 4.16, implementation of the proposed General Plan and Sustainability Action Plan would reduce GHG emissions from 2020 projected BAU conditions by between 22 and 28 percent, which would not meet the 29 percent reduction.

All four alternatives would result in less employment and residential growth at buildout, which would generate significantly fewer vehicle trips per day than the General Plan and Sustainability Action Plan, and in turn reduce GHG emissions. As described in detail in the 2006 General Plan EIR, the No Project Alternative and Existing SOI Alternative would result in 15 to 20 percent fewer trips than the proposed General Plan and Sustainability Action Plan, and the Concentrated Growth Alternative and City Limits Alternative would result in 40 to 50 percent fewer trips. Reductions in vehicle trips would significantly reduce GHG emissions under all four alternatives, representing a substantial improvement as compared to the proposed General Plan and Sustainability Action Plan.

# 6 CEQA-REQUIRED ASSESSMENT CONCLUSIONS

As required by CEQA, this chapter provides an overview of the impacts of the proposed General Plan and Sustainability Action Plan based on the technical analyses presented in this EIR. The topics covered in this chapter include growth inducement; cumulative impacts; unavoidable significant effects; and expected significant irreversible environmental changes. A more detailed analysis of the project-level effects of the proposed General Plan and Sustainability Action Plan on the environment is provided in Chapter 4 of this report.

## *A. Growth Inducement*

A project is typically considered to be growth-inducing if it fosters economic or population growth. Typical growth inducements might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. Not all growth inducement is necessarily negative. Negative impacts associated with growth inducement occur only where the projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct and indirect. Direct growth-inducing impacts are generally associated with the provision of urban services to an undeveloped area. The provision of these services to a site, and the subsequent development, can serve to induce other landowners in the vicinity to convert their property to urban uses. Indirect, or secondary growth-inducing impacts, consist of growth induced in the region by the additional demands for housing, goods and services associated with the population increase caused by, or attracted to, a new project.

### 1. Direct Impacts

As discussed in Chapter 3, by 2025, based on land use designations, available acres and existing building allotment regulations, 9,500 new housing units will be built in Tracy, the population is estimated to reach 112,600 and the number of employees will increase to 53,800. Total buildout under the proposed General Plan is projected to add between 13,225 and 21,300 new units;

the total residential and employee populations are estimated to reach up to 151,500 people and 193,000 jobs, respectively.

Implementation of the proposed General Plan and Sustainability Action Plan would induce some population and housing growth in Tracy, in part because it increases intensity of uses and densities in the Downtown and in Village Centers, close to transportation nodes. This type of residential growth can be beneficial in that it would help preserve open space and agricultural lands on the periphery, and because higher density, multi-family housing would allow the City to meet its fair share housing allocation requirements. While growth would be allowed under the proposed General Plan, the market indicates that growth would occur in Tracy whether or not the General Plan is adopted at a similar rate controlled by the City's Growth Management Ordinance.

The General Plan provides goals and policies to maintain the character of Tracy and minimize the environmental impacts of the anticipated growth. Proposed policies are intended to be obtainable and, as such, take into account market conditions and realistic growth assumptions that are consistent with the Growth Management Ordinance and discourage undesirable development in areas with sensitive natural resources, critical habitats and important scenic resources. The impact on agricultural land in the Tracy area is also incorporated, especially as it affects Prime Farmland and Farmland of Statewide Importance. The Plan encourages new development to occur in areas adjacent to existing urban uses and requires developers to provide service extensions. The San Joaquin Multi-Species Habitat Conservation and Open Space Plan also requires dedications of agriculture and open space at a one-to-one acre ratio for non-urbanized land that is converted to urban uses.

Finally, the proposed General Plan also includes policies specifically designed to discourage urbanization in unincorporated county areas outside the SOI (Goal LU-8). For example, Objective LU-8.1, Policy 1 states that the City will not support development within the SOI until the property is annexed. Policies 3 and 4 state that the City will support the maintenance of existing County land use designations in the Planning Area and encourage the County

to preserve significant agricultural lands outside the SOI. Finally, Policy 2 states that the City will not make new commitments to provide water and wastewater outside the City limits until the property is subject to an approved annexation agreement.

As a result, while the proposed General Plan would result in an increase of growth locally, the policies included in the Plan reduce the potential for negative impacts associated with directly induced growth to a less-than-significant level.

**2. Indirect Impacts**

While the proposed General Plan does allow additional growth, it also includes specific policies that limit that growth to the City limits and SOI, as mentioned above. For example, policies under Objective LU-8.1 work to discourage development outside the defined City limits and SOI. The land use plan also provides a mixture of housing, shopping and employment opportunities so that as the number of residents increase, they do not pressure adjacent communities to provide new commercial and employment opportunities. Also, as previously stated, commitments to provide water and sewer infrastructure would be limited to areas within the City limits, or that have pre-annexation agreements. As result, the proposed General Plan policies would result in a less-than-significant indirect growth inducing impact.

### *B. Cumulative Impacts*

CEQA Guidelines require consideration of the potential cumulative impacts that could result from a proposed project in conjunction with other projects in the vicinity. Such impacts can occur when two or more individual effects create a considerable environmental impact or compound other environmental consequences. In the case of a city-wide planning document such as the proposed General Plan and Sustainability Action Plan, cumulative effects are effects that combine impacts from the project's development in the city with effects of development in other portions of the region. By definition, no development within the City limits and SOI would be considered part of the

cumulative impacts; instead, development inside the city and SOI is part of the project itself.

It should be noted that a significant planning effort within the city is underway: the Tracy Downtown Specific Plan. The Downtown Specific Plan is intended to fulfill General Plan Goal LU-5 for a physically, socially, and economically vibrant Downtown, as well as other General Plan goals for the Downtown. A General Plan Amendment is required for the Downtown Specific Plan since the land use designations would be changed on a number of parcels and the types of uses allowed in the designations would be altered. Although the Downtown Specific Plan would increase the intensity of development within the Specific Plan area from that allowed by the proposed General Plan, this EIR and the EIR for the Downtown Specific Plan assume that overall development in the city would shift slightly towards the Downtown, resulting in a more compact urban core and the same level of citywide development. Therefore, the Downtown Specific Plan is included in the development projections of the proposed General Plan, and additional review through the cumulative analysis is not appropriate.

The cumulative impacts of the General Plan and Sustainability Action Plan take into account growth projected by the General Plan, in combination with impacts from projected growth in other cities in the region. In the following sections, the cumulative impact analysis examines cumulative effects of the proposed General Plan and Sustainability Action Plan, in combination with San Joaquin County Council of Governments (SJCOG)-projected growth for the other cities in San Joaquin County.

SJCOG is responsible for estimating regional growth for San Joaquin County. In 2000, SJCOG estimated future anticipated growth for the county as a whole, and individual jurisdictions. The 2025 population for San Joaquin

TABLE 6-1 **SJCOG POPULATION PROJECTIONS FOR SAN JOAQUIN COUNTY IN 2025 COMPARED TO 2000 AND 2008**

| Area | 2000 Census[a] | 2008[b] | 2025[c] |
|---|---|---|---|
| San Joaquin County | 563,598 | 685,660 | 995,132 |
| Escalon | 5,963 | 7,131 | 10,524 |
| Lathrop | 10,445 | 17,429 | 31,073 |
| Lodi | 56,999 | 63,362 | 77,253 |
| Manteca | 49,258 | 66,451 | 96,607 |
| Ripon | 10,146 | 14,915 | 19,543 |
| Stockton | 243,771 | 289,927 | 401,997 |
| Tracy | 56,929 | 81,548 | 153,677 |
| Unincorporated | 130,087 | 144,897 | 194,564 |

[a] US Census, 2000.
[b] California Department of Finance estimates for January, 2008.
[c] SJCOG Population Projections as of 2005.

County, as projected by SJCOG, is 995,132.[1] SJCOG's projected 2025 population for Tracy is 153,677. Table 6-1 depicts the projected growth for San Joaquin County. The projections do not reflect actual 2000 Census data, but ended up closely in line with the real data.

For the purposes of this cumulative analysis, a county-level cumulative analysis is used. The potential cumulative effects of the proposed General Plan and

[1] Population, Employment & Housing Unit Projections, San Joaquin Council of Governments, http://www.sjcog.org/docs/pdf/RFC%20Projections.pdf, accessed on September 11, 2008.

Sustainability Action Plan are summarized in each of the following subsections.

The following sections summarize the potential cumulative impacts of the proposed General Plan and Sustainability Action Plan at the regional level, by topics outlined in Chapter 4 of this report.

**1. Land Use**

As the primary planning document for Tracy, the proposed General Plan and Sustainability Action Plan would have a less-than-significant impact in relation to potential conflicts with other applicable plans, policies and regulations, including the County's General Plan and LAFCo's SOI. In addition, potential land use incompatibility problems resulting from implementation of the proposed General Plan and Sustainability Action Plan would be mitigated by policies contained in the Land Use and Open Space Elements. Specific policies in these Elements work to prevent conflicts between various land uses, such as residential and the airport or agriculture, and avoid environmental impacts at the project level. The proposed General Plan and Sustainability Action Plan also uphold additional guidelines from the County and State in regards to open space, such as the SJMSCP, which requires the preservation of open space and agriculture acres according to the amount of land converted to urban uses. Therefore, implementation of the General Plan and Sustainability Action Plan will not result in significant and unavoidable cumulative impacts at the project or regional level.

**2. Population, Employment and Housing**

As discussed in Section 4.2, the proposed General Plan and Sustainability Action Plan includes policies to control and direct growth in a well planned manner and does not result in the division of existing communities. While there is no project-level significant impact associated with the 2025 planning horizon buildout, a project-level significant and unavoidable impact is associated with total buildout, relative to existing conditions. Growth would also occur in other communities throughout the county and the region. Just as the City of Tracy is expected to grow considerably as its General Plan builds

out, other communities in the region will do so as well. This will constitute a significant and unavoidable cumulative impact on population and employment.

San Joaquin and Alameda Counties and other incorporated jurisdictions are required by State law to use the General Plan process, as well as other planning processes, such as utility master plans, to plan for and control future growth. As a result, the cumulative impact associated with population and employment growth would be reduced somewhat, since planning for it would occur. However, many people would find the sheer change in population and employment in the region to be significant.

**Impact POP-2:** Despite processes to plan for and control future growth by the City of Tracy and other jurisdictions, significant growth will occur under the proposed General Plan and in other communities in the region, constituting a significant cumulative impact on population and employment.

No mitigation measures have been identified for this impact. Therefore, it is a *significant and unavoidable* cumulative impact.

**3. Visual Quality**

The proposed General Plan would result in changes to the visual character of the Tracy Planning Area from a more rural setting to one that is more characterized by urban uses, with increased light and glare sources. As outlined in Section 4.3, despite the proposed General Plan's policies and actions, in conjunction with adopted State, County and City regulations to enhance "hometown feel" and preserve open space, development permitted under the proposed General Plan would result in a significant impact to the existing visual identity and character of the city due to the amount of growth allowed. Similarly, development associated with the anticipated regional growth would result in a substantial change to the visual character of San Joaquin County. Continual urbanization of existing agriculture and open space land has the potential to permanently alter the character of the area. State and local regulations, such as the State Scenic Highway guidelines and the San Joaquin

County Multi-Species Critical Habitat Plan mitigate some potential impacts along scenic corridors by preserving views and open space land.

Therefore, the proposed General Plan, combined with the overall growth trends in San Joaquin County, would contribute to the cumulative conversion of the County's visual character from a rural, agricultural character to a more urban feel and thus, would result in a cumulative significant, unavoidable impact to visual quality.

**Impact V-4**: The proposed General Plan, in combination with cumulative growth in San Joaquin County, would convert the visual character from the current rural/agricultural character to a more urban visual character. This change in visual quality will constitute a significant cumulative impact.

No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact.

**4. Traffic and Circulation**

The quantitative, project-level traffic analysis through 2030 included in Section 4.4 also addresses cumulative impacts to the regional transportation system since the traffic model used analyzed the cumulative impacts of the proposed General Plan along with projected regional growth for San Joaquin County. While the proposed General Plan and Sustainability Action Plan incorporate a range of features that work to help reduce the potential impact of future growth in Tracy to regional roadways, traffic levels along regional roadways will increase, creating a significant and unavoidable impact to Interstate 205, Interstate 580, Interstate 5, Patterson Pass Road and Tesla Road. As a result, there would be a significant unavoidable impact to the regional transportation system. Significant regional roadway impacts are also anticipated to continue to occur after 2030 through total buildout, so a significant and unavoidable cumulative impact would also occur during that period.

**Impact CIR-2:** Despite measures in the proposed General Plan and Sustainability Action Plan to help reduce the potential impact of future growth in

Tracy to regional roadways, traffic levels along regional roadways will increase. Significant regional roadway impacts are anticipated to continue to occur after 2030. This will constitute a significant cumulative impact.

No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact.

**5. Cultural Resources**

While grading and other construction activities have the potential to impact cultural resources in the Tracy Planning Area, proposed General Plan policies, mitigation measures contained in this EIR, and compliance with federal and State regulations reduce the project-specific impact to a less-than-significant level. Cultural resources in San Joaquin County, including historical, archaeological and paleontological resources, could be cumulatively impacted by future development and related construction activities in the region. However, potential impacts would be mitigated at an individual project level by current State and federal regulations, as well as other local and County regulations and mitigations. Such regulations and mitigation would include the monitoring of construction sites in proximity to known resources, immediate cessation of construction activity upon discovery of unidentified human remains, and the protection of cultural resources. The combination of the above-mentioned efforts would reduce potential cumulative impact related to cultural resources to a *less-than-significant* level.

**6. Biological Resources**

Development associated with implementation of the proposed General Plan would contribute to the on-going loss of natural and agricultural lands in the Tracy area, which currently provide habitat for a variety of species. Development under the proposed General Plan would result in the conversion of existing agricultural habitat to urban uses. Section 4.6 of this EIR references policies in the proposed General Plan and regional, State and federal regulations that mitigate impacts to biological resources at a project level. Development outside of Tracy in San Joaquin County would also be subject to the same regional, State and federal regulations addressing sensitive species. Im-

plementation of regional, State and federal regulations, such as the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), and the Endangered Species Act would also minimize risks to sensitive populations and reduce cumulative impacts throughout the region to a *less-than-significant* level.

**7. Agricultural Resources**

With the implementation of the proposed General Plan, there would be a loss of the existing agricultural lands and land under active Williamson Act contracts within the City limits and SOI. While the proposed General Plan includes policies to minimize this impact, there would still be a project-level significant and unavoidable impact. The loss of agricultural land within Tracy and the SOI as a result of urban development is part of an overall trend within San Joaquin County, with 80 percent (2,037 acres) of new urban acres occurring on formerly irrigated farmland between 1998 and 2000.[2] According to the Farmland Mapping and Monitoring Program (FMMP), agricultural land in San Joaquin County will continue to face development pressure in the foreseeable future.

The proposed General Plan does include several policies and actions under Objective OSC-2.1 stating that the City will work at a regional level to control the conversion of agricultural uses. The City also recently adopted an Agricultural Mitigation Fee Ordinance to help mitigate for the loss of farmland; in-lieu fees will be collected for impacts from development on agricultural land, which will eventually be utilized for the purchase of conservation easements on agricultural lands. In addition, the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan works at a regional level to promote the permanent preservation of agricultural lands in San Joaquin County. However, since the County is projected to continue to urbanize at a significant rate, the loss of agricultural lands and land under active Williamson

[2] *California Farmland Conversion Report 1998-2000*. California Department of Conservation, Division of Land Resource Protection.

Act contracts as a result of the proposed General Plan would contribute to a significant and unavoidable cumulative impact to agricultural resources.

**Impact AG-4:** Significant growth will occur under the proposed General Plan and in other communities in the region, constituting a significant cumulative impact on agricultural resources.

No mitigation measures have been identified for this impact. Therefore, it is a *significant and unavoidable* cumulative impact.

**8. Mineral Resources**

As discussed in Section 4.8, the proposed General Plan includes land use and design policies to avoid significant impacts to important mineral resources in Tracy. These policies are in compliance with State laws that require local jurisdictions to take into consideration the continued availability of important mineral resources in land use decisions. Implementation of the Tracy General Plan would result in a *less-than-significant* cumulative impact to mineral resources.

**9. Community Services**

The following provides a cumulative analysis broken down by each community service.

a. Police Service

Future regional growth would result in a need for expanded police service throughout the county. However, only growth within Tracy and its SOI would result in the need for the City to construct additional police facilities to serve its population, resulting in additional environmental impacts. The project-level analysis contained in Section 4.9 takes into consideration the potential growth within the area that would be provided police service by Tracy and no significant impact was identified in regards to the construction of new and expanded facilities. Therefore, implementation of the General Plan would result in a *less-than-significant* cumulative impact to police service.

b. Fire Protection and Emergency Medical Services

Future regional growth would result in increased demand for fire services throughout the county. However, only growth within the Tracy Fire Department service area would result in the need for the Tracy Fire Department to construct additional facilities, resulting in additional environmental impacts. The project-level analysis contained in Section 4.9 takes into consideration the potential growth within the area that would be provided fire service by Tracy, and no significant impact was identified in regard to the construction of new and expanded facilities. Moreover, since Tracy represents the largest concentration of population for the Tracy Fire Department service area, facilities needed to provide service to the proposed General Plan area would also be adequate to meet the demand generated by any other growth occurring within the Department's service area. Therefore, implementation of the General Plan would result in *less-than-significant* cumulative impacts to fire protection and emergency medical services.

c. Schools

Future regional growth would result in increased demand for schools throughout the county. However, only growth within the TUSD, JESD, LESD, BUSD, and NJSD service areas would result in the need for the various districts to construct additional facilities, resulting in additional environmental impacts. For some of the districts, growth within Tracy would be the primary source of demand for additional school facilities. However, the LESD is planning for additional schools to support the Mountain House community and the BESD would need to serve proposed residential development in the River Islands of Lathrop project. As with the proposed General Plan project-level analysis, it is unknown exactly where these school facilities would occur to support the cumulative increase in population resulting from growth outside of Tracy. As specific school facility expansion or improvement projects are identified, additional project-specific, second-tier environmental analysis would be completed. Therefore, implementation of the General Plan would result in *less-than-significant* cumulative impacts to schools.

d. Solid Waste

Growth within San Joaquin County would contribute to the need for adequate solid waste disposal facilities. As discussed in Section 4.9 for the project-level analysis, the Foothill Landfill has capacity until at least 2054. The cumulative population growth within the county was considered when evaluating the lifespan of the facility and planning for future expansions. It is also reasonable to assume that adequate planning for further landfill expansion will occur in the 48-year period before the existing landfill reaches capacity. As a result, it can be concluded that there would be adequate capacity to support regional increases in population. Therefore, implementation of the General Plan would result in a *less-than-significant* cumulative impact to the disposal solid waste.

e. Parks and Recreational Facilities

The California Quimby Act allows a City to require land or in-lieu fees for a minimum of 3 acres per 1,000 residents, with the possibility of increasing the requirement to a maximum of 5 acres per 1,000 residents if the City already provides more than 3 acres per 1,000 residents. As discussed in Section 4.9, Tracy's current park dedication ordinance requires a dedication of 4 acres per 1,000 people for all new development projects. Furthermore, the proposed General Plan includes an action for the City to consider increasing its parkland dedication standard to 5 acres per 1,000 residents. San Joaquin County requires 3 acres per 1,000 residents for new development, as do the neighboring communities of Lathrop and Manteca. Through its regulations, Tracy is providing more than the State-defined need for parkland. Given the parkland requirements of Tracy and neighboring communities, which will ensure that new development provides adequate parkland for new residents to the extent allowed by State law, implementation of the General Plan and adherence to other requirements would result in *less-than-significant* cumulative impacts to parks and recreational facilities.

**10. Infrastructure**

The following provides a cumulative analysis for each infrastructure type.

a. Water Services

Future growth in San Joaquin County would generate an additional demand for water. A portion of this growth would be dependent on the groundwater basin for its primary water source. As mentioned in Section 4.10, a study has been completed for the groundwater basin and users have entered into an agreement to limit their use of the basin to a sustainable level. In addition, new development throughout the county would also be subject to SB 610 and SB 221, which require adequate water supplies to be identified prior to approval of a project. As a result of these existing regulations, there would not be a cumulative impact associated with water supplies.

Future regional growth would result in a need for expanded water infrastructure throughout the county. However, only growth within Tracy and its SOI would result in the need for the City to construct additional water facilities to serve its population, resulting in additional environmental impacts. The project-level analysis for the proposed General Plan in Section 4.10 takes into consideration all potential growth within the area that would be provided water service by Tracy. No significant impact was identified in regard to the construction of new and expanded facilities during the 20-year planning horizon. However, a project-level significant and unavoidable impact associated with total buildout was found with regard to water supply. While the project would not contribute to a significant cumulative impact associated with water services during the 20-year planning horizon, it would contribute to a cumulative significant and unavoidable impact at total buildout, since regional water supplies are also not ensured into the future for development that would begin beyond a 20-year planning horizon.

**Impact INF-2**: The proposed General Plan at total buildout, in combination with cumulative growth in San Joaquin County, would not have ensured water supplies. This will constitute a significant cumulative impact.

No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact.

b. Wastewater

Future regional growth would result in increased demand for wastewater services throughout San Joaquin County. However, only growth within Tracy and its SOI would result in the need for the City to construct additional wastewater facilities, resulting in additional environmental impacts. The project-level analysis in Section 4.10 takes into consideration all potential growth within the area that would require wastewater service by Tracy, and no significant impact was identified for the 20-year planning horizon and for total buildout. Therefore, implementation of the General Plan will result in *less-than-significant* cumulative impacts to wastewater services.

c. Stormwater

As development proceeds within Tracy and the SOI, impervious surfaces would increase, as would the amount of pollutants in runoff, thereby increasing stormwater drainage rates and potentially impacting surface and groundwater quality. However, project-level water quality impacts to water resources would be reduced to a less-than-significant level by implementing BMPs in accordance with the NDPES and other applicable regulations, as well as implementation of the water quality policies contained in the proposed General Plan. New development within the county would also result in an increase in runoff. Regional development would also be required to comply with regional, State and federal regulations addressing stormwater runoff and water quality. Therefore, adherence to these regulations would result in a *less-than-significant* cumulative impact to water quality.

Future regional growth would result in increased demand for additional stormwater drainage infrastructure throughout the county. However, only growth within Tracy and its SOI would cause the need for the City to construct additional stormwater drainage infrastructure, resulting in additional environmental impacts. The project-level analysis for the proposed General Plan in Section 4.10 takes into consideration all potential growth within the area that would require stormwater drainage infrastructure in Tracy and the SOI, and no significant impact was identified in regard to the construction of new and expanded facilities for the 20-year planning horizon and for total

buildout. Therefore, implementation of the General Plan would result in a *less-than-significant* cumulative impact to stormwater drainage infrastructure.

d. Energy

As growth occurs throughout San Joaquin County, there will be an increased demand for electricity and natural gas. As discussed in Section 4.10, Tracy would avoid a significant project-level impact associated with the wasteful use of energy by implementing proposed General Plan policies, as well as complying with State regulations. Similarly, other jurisdictions in San Joaquin County are required to meet State regulations in regard to energy conservation, such as required by Title 24. As a result, *less-than-significant* cumulative impacts related to energy would occur.

**11. Geology, Soils, and Seismic Hazards**

Regional development would increase the number of people and structures subject to geologic- and soils-related risks. The policies contained in the proposed General Plan, along with compliance with federal, State and local regulations addressing building construction, run-off and grading, reduce the potential project-level impact associated with geology and soils to a less-than-significant level. Development in other communities in San Joaquin County would also be required to comply with federal, State and local regulations that are designed to protect increases in people and structures from hazards related to such issues as earthquakes, landslides and soil erosion. As a result, conformance with adopted California building codes, and other measures to protect people and structures from geologic hazards, would reduce this impact to a *less-than-significant* level.

**12. Hydrology and Flooding**

As development proceeds within Tracy and the SOI, additional population would also be exposed to the risk of flooding and dam inundation. As discussed in Section 4.12, existing regulations and proposed General Plan policies and actions would reduce the risk to a less-than-significant level. However, new development within the county may locate additional population and structures within areas subject to flooding. However, regional development

would also be required to comply with regional, State and federal regulations regarding flooding. These regulations, in combination with implementation of the General Plan, would result in a *less-than-significant* cumulative impact related to hydrology and flooding.

**13. Hazardous Materials and Other Hazards**

As discussed in Section 4.13, the increase in local population and employment under the proposed General Plan would result in the increased use of hazardous household, commercial and industrial materials. In addition, there would be an increase in population that would be exposed to potential wildland fires and hazards associated with aircraft operation. Potential project-level impacts associated with hazards and hazardous materials would be reduced to a less-than-significant level due to local, regional, State and federal regulations, such as those that control the production, use and transportation of hazardous materials and waste and control the location of incompatible land uses in airport hazard areas. Similarly, as growth occurs in the county, additional people would be exposed to risks associated with hazardous materials, wastes, wildland fires and airport operations. However, as would occur within Tracy, regional, State and federal regulations would apply to countywide development, and would result in *less-than-significant* cumulative impacts associated with hazards and hazardous materials.

**14. Noise**

Cumulative noise impacts are considered as part of the project-level noise analysis since the future traffic projections used for the noise analysis were generated by a cumulative traffic model. The quantitative traffic model considered growth through 2030 under the proposed General Plan and Sustainability Action Plan in conjunction with the projected regional growth for San Joaquin County for that period. As discussed in detail in Section 4.14, future noise level increases related to increases in traffic associated with new roadways facilitated by the proposed General Plan and Sustainability Action Plan would contribute to a significant and unavoidable noise impact at the project-level and cumulative level. Since these noise level increases related to regional traffic would also be anticipated to continue to occur after 2030 through total

buildout, a significant and unavoidable cumulative impact would also occur during that period.

**Impact NOI-3:** Increases in traffic associated with new roadways facilitated by the proposed General Plan and Sustainability Action Plan would contribute to significant noise levels increases adjacent to existing noise sensitive uses. These noise level increases related to regional traffic are anticipated to continue to occur after 2030. This will constitute a significant cumulative impact.

No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact.

**15. Air Quality**

Cumulative air impacts are considered as part of the project-level analysis since the future traffic projections used for the air quality analysis were generated by a cumulative traffic model. The traffic model considered growth under the proposed General Plan and Sustainability Action Plan in conjunction with projected regional growth for San Joaquin County. As discussed in detail in Section 4.15, due to the existing air quality issues in the San Joaquin Valley Air Basin, the proposed General Plan and Sustainability Action Plan would contribute to one significant, unavoidable cumulative air quality impact. Since air quality impacts associated with increases in regional traffic would also be anticipated to occur after 2030 through total buildout, a significant and unavoidable cumulative impact would also occur during that period.

**Impact AIR-3**: Buildout under the proposed General Plan and Sustainability Action Plan is projected to lead to substantial increases in vehicle miles traveled and contribute to existing air quality issues in the San Joaquin Valley Air Basin. These air quality impacts associated with increases in regional traffic are anticipated to occur after 2030, constituting a cumulatively significant impact.

No mitigation measures have been identified for this impact. Therefore, it is a s*ignificant and unavoidable* cumulative impact.

**16. Greenhouse Gas Emissions**

Climate change is the result of cumulative global emissions. There is no single project, when taken in isolation, that can "cause" global warming, as a single project's emissions are insufficient to change the radiative balance of the atmosphere. Because global warming is the result of greenhouse gas (GHG) emissions, and GHGs are emitted by innumerable sources worldwide, global climate change is a significant cumulative impact of human development and activity. The global increase in GHG emissions that has occurred and will occur in the future is the result of the actions and choices of individuals, businesses, local governments, states, and nations. Therefore, the project-level analysis in Chapter 4.16 addresses cumulative impacts.

### *C. Unavoidable Significant Effects*

While some impacts associated with the proposed General Plan and Sustainability Action Plan would be reduced to a less-than-significant level, adoption and implementation of the proposed General Plan and Sustainability Action Plan would result in the following significant and unavoidable impacts:

- **Impact POP-1:** Despite policies in the Community Character Element of the proposed General Plan to maintain and enhance quality of life as future growth occurs, development permitted under the proposed General Plan would result in approximately an additional 43,000 to 70,000 residents, 163,000 employees and 13,225 to 21,300 housing units for a total of 124,500 to 151,500 residents, 193,000 employees and 38,700 to 46,700 housing units at total buildout.
- **Impact POP-2:** Despite processes to plan for and control future growth by the City of Tracy and other jurisdictions, significant growth will occur under the proposed General Plan and in other communities in the region, constituting a significant cumulative impact on population and employment.

- **Impact V-1:** As discussed on pages 52 and 53, in addition to policies in the SJMSCP and the City's Agricultural Mitigation Fee Ordinance, the proposed General Plan contains policies to preserve open space and agricultural lands and community character. Despite such policies to enhance "hometown feel" and preserve open space, development permitted under the proposed General Plan for both the 2025 and total buildout of the City limits and SOI will result in a significant impact to the existing visual identity and character of the City.

- **Impact V-2:** As discussed on page 53, despite policies in the proposed General Plan to protect scenic resources, including those along state designated scenic highways for development projected through 2025, a significant and unavoidable impact would occur with regards to scenic resources along the state designated scenic routes I-580 (between I-205 and I-5) and I-5 (south of I-205) at total buildout of the proposed General Plan.

- **Impact V-4:** The proposed General Plan, in combination with cumulative growth in San Joaquin County, would convert the visual character from the current rural/agricultural character to a more urban visual character. This change in visual quality will constitute a significant cumulative impact.

- **Impact CIR-1:** The General Plan incorporates a range of features to help reduce the potential impact of future growth on regional roadways. However, traffic levels along regional roadways listed below will increase, creating a significant and unavoidable impact.
  - I-205
  - I-580
  - I-5
  - Patterson Pass Road
  - Tesla Road

- **Impact CIR-2:** Despite measures in the proposed General Plan and Sustainability Action Plan to help reduce the potential impact of future growth in Tracy to regional roadways, traffic levels along regional roadways will increase. Significant regional roadway impacts are anticipated

to continue to occur after 2030. This will constitute a significant cumulative impact.

- **Impact AG-1:** As discussed on pages 67 through 71, the proposed General Plan contains policies to preserve agricultural lands, in addition to policies in the SJMSCP and the City's Agricultural Mitigation Fee Ordinance. Despite these policies and regulations, development permitted under the proposed General Plan would result in the conversion of Prime Farmland, Unique Farmland and Farmland of Statewide Importance to urban uses. No additional mitigation is available.
- **Impact AG-2:** Despite policies in the proposed General Plan to support and encourage preservation of Williamson Act lands and the voluntary nature of the Williamson Act program, total buildout of the City limits and SOI may result in the conversion of land under active contracts to urban uses.
- **Impact AG-3:** The proposed General Plan contains several policies to mitigate impacts to agricultural resources due to the conversion of additional farmland to urban uses. However, implementation of the proposed General Plan would result in additional and incompatible urban development adjacent to agricultural uses to the extent that the conversion of additional farmland to non-agricultural uses.
- **Impact AG-4:** Significant growth will occur under the proposed General Plan and in other communities in the region, constituting a significant cumulative impact on agricultural resources.
- **Impact INF-1:** As discussed on page 78, no significant water-related impacts have been identified for development projected through 2025. However, despite policies in the Land Use and Public Facilities Elements of the proposed General Plan directing the City to acquire reliable, additional sources of water supplies to meet the city's future demand as new development occurs, there is currently insufficient water supply secured to serve projected development under total buildout of the proposed General Plan.

No additional mitigation is available. Despite policies in the proposed General Plan to ensure infrastructure is in place or planned to support growth, current water supplies would be insufficient to accommodate projected development at total buildout. However, as noted on page 78, no significant impacts would occur related to development through 2025, since current water supply could accommodate projected development through this period.

- **Impact INF-2:** The proposed General Plan at total buildout, in combination with cumulative growth in San Joaquin County, would not have ensured water supplies. This will constitute a significant cumulative impact.

- **Impact NOI-1:** The City's Noise Ordinance and policies in the proposed General Plan serve to control excessive sources of noise in the city and ensure that noise impacts from new projects are evaluated when they are reviewed. Despite these policies and regulations, significant noise levels increases (3 dBA $L_{dn}$ or greater) associated with increased traffic would occur adjacent to existing noise sensitive uses along portions of I-205, Grant Line Road, Schulte Road, Linne Road, Lammers Road, Corral Hollow Road, Tracy Boulevard, and MacArthur Drive. New roadways facilitated by the General Plan would also increase existing noise levels at receivers in Tracy.

- **Impact NOI-3:** Increases in traffic associated with new roadways facilitated by the proposed General Plan and Sustainability Action Plan would contribute to significant noise levels increases adjacent to existing noise sensitive uses. These noise level increases related to regional traffic are anticipated to continue to occur after 2030. This will constitute a significant cumulative impact.

- **Impact AIR-1**: The General Plan and Sustainability Action Plan would not be consistent with applicable clean air planning efforts of the SJVAPCD, since vehicle miles traveled that could occur under the proposed General Plan would exceed that projected by the SJCOG, which are used in projections for air quality planning. The projected growth could lead to an increase in the region's VMT beyond that anticipated in

the SJCOG and SJVAPCD clean air planning efforts. Development in Tracy would contribute to the on-going air quality issues in the San Joaquin Valley Air Basin.

Mitigation Measure AIR-1: The City of Tracy will facilitate development applicants' participation in the San Joaquin Valley Air Pollution Control District's Indirect Source Review program. The Indirect Source Review program requires developers of larger projects to reduce emissions and provides on-site mitigation measures to help developers reduce air impacts. However, the mitigation measure identified above may not completely mitigate this impact. Therefore, it is considered a *significant and unavoidable* impact.

- **Impact AIR-3**: Buildout under the proposed General Plan and Sustainability Action Plan is projected to lead to substantial increases in vehicle miles traveled and contribute to existing air quality issues in the San Joaquin Valley Air Basin. These air quality impacts associated with increases in regional traffic are anticipated to occur after 2030, constituting a cumulatively significant impact.
- **Impact GHG-1**: Implementation of the proposed General Plan and Sustainability Action Plan would reduce GHG emissions from 2020 projected BAU conditions by 22 and 28 percent. Therefore, the project would not meet the San Joaquin Valley Air Pollution Control District's threshold of reducing GHG emissions by 29 percent.

### *D. Significant Irreversible Changes*

Section 15126.2(c) of the CEQA Guidelines requires a discussion of the extent to which a proposed project will commit nonrenewable resources to uses that future generations would probably be unable to reverse. An example of such an irreversible commitment is the construction of highway improvements that would provide public access to previously inaccessible areas.

A project would generally result in a significant irreversible impact if:

- Primary and secondary impacts would commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

**1. Changes in Land Use that Commit Future Generations**

Development under the proposed General Plan and Sustainability Action Plan would result in the conversion of vacant and agricultural lands to industrial, commercial and residential uses, and the intensification of underutilized areas. This development would constitute a long-term commitment to residential, commercial, industrial, parking and other urban uses.

**2. Commitment of Resources**

Development allowed under the proposed General Plan and Sustainability Action Plan would irretrievably commit nonrenewable resources to the construction and maintenance of buildings, infrastructure and roadways. These non-renewable resources include mining resources such as sand, gravel, steel, lead, copper and other metals. Buildout of the proposed General Plan also represents a long-term commitment to the consumption of fossil fuels, natural gas and gasoline. Increased energy demands would be used for construction, lighting, heating and cooling of residences, and transportation of people within, to and from the city and SOI. Proposed General Plan policies and actions promoting energy conservation (Objective OSC-5.1 and Objective OSC-5.2 with supporting policies and actions) would result in some savings in non-renewable energy supplies. Implementation of the proposed General Plan and Sustainability Action Plan would also result in an irreversible commitment of limited, renewable resources such as lumber and water. Proposed General Plan policies and actions promoting resource and water conservation and green building (policies and actions under Objective CC-1.1, Objective OSC-5.1, Objective OSC-5.3, Objective PF-5.1, Objective PF-6.1, Objective

PF-6.5, Objective PF-7.4, Objective AQ-1.2 and Objective AQ-1.4) would result in some savings of renewable resources.

# 7 REPORT PREPARATION

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**APPENDIX A**

# GOAL, OBJECTIVE, POLICY, AND ACTION REVISIONS

# APPENDIX A

The proposed General Plan includes new and revised goals, objectives, policies and actions to implement the proposed changes to the SOI, encourage ways to reduce greenhouse gas emissions and strengthen the sustainability-related policy framework that is used to guide future development and City operations.

Proposed changes to the goals, objectives, policies and actions are listed below. Text that is proposed to be added to or removed from the 2006 General Plan text is shown in double underline and ~~strikethrough~~, respectively. In addition, goals, objectives, policies and actions that address the reduction of greenhouse gas emissions or encourage sustainable practices are denoted with an earth symbol (🌎).

## *A. Policy Changes*

### 1. Land Use Element

Objective LU-1.2

Policies

P2. The first application for development in each Urban Reserve shall be responsible for preparing a General Plan amendment to establish specific land use designations for each parcel of land within the Urban Reserve and a Zoning District, Specific Plan or PUD for the entire Urban Reserve area. When the development intended for areas within an Urban Reserve is initiated solely to accommodate schools, parks, and public facilities, then the requirement to prepare comprehensive Zoning Districts, Specific Plans or PUDs for the entire area does not apply until development of commercial, industrial, office or residential development is proposed.

Objective LU-1.4

Policies

P2. ~~The~~ On a regular basis, the City shall prioritize the allocation of Residential Growth Allotments (RGAs) for new residential development to meet the goals of the General Plan including, but not limited to, ~~concentrated growth~~ growth concentrated around existing urban development and services, infill development, affordable housing, senior housing, and development with a mix of residential densities and housing types, as a high priority.

P3. The City shall encourage residential growth that follows an orderly pattern with initial expansion targeted for areas shown in Figure 2-3. Applications for residential development shall only be considered in the following instances:

- In areas designated within Figure 2-3 or on a property with a recorded Development Agreement that allows for the allocation of RGAs and building permits.
- In areas and Urban Reserves that primarily contain land uses focused on the generation of jobs with ancillary residential development. However, the residential portions of such areas or Urban Reserves shall not be considered eligible to apply for RGAs and building permits until RGAs and building permits necessary to develop all areas within Figure 2-3 have been awarded, unless those RGAs and building permits sought for projects in such areas are for affordable housing as defined by the Tracy Municipal Code, in which cases RGAs and building permits for affordable housing may be awarded.

P4. The City shall continue to make available RGAs and building permits for downtown and infill development as a high priority.

P6. Development of Downtown sites shall be encouraged at the highest possible densities consistent with available services and the goals for environmental protection and land use compatibility.

P7. A Zoning District, Specific Plan, or PUD should be created to plan for the development of Urban Reserves 5, 7, 8 and 9 for residential development, that will further the City's goal to promote the efficient and orderly expansion of the City's housing base within the Secondary Residential Growth Areas.

Objective LU-1.5

Policies

P3. A new, mixed-use, high-density Village Center should be developed in Urban Reserves 10 and 11 along the Union Pacific Railroad.

Objective LU-6.4 Ensure that development conforms to flood safety requirements.

Policies

P1. The City shall ensure that development permitting occurs in a manner to provide public safety in flood-prone areas.

Actions

A1. Conduct a review as necessary of areas that are subject to flooding, as identified in flood plain maps prepared by the Federal Emergency Management Agency (FEMA) (Figure 8-1 in the Safety Element) or the Department of Water Resources (DWR).

A2. Amend the Land Use Element as necessary to reflect any new flood plain maps when provided by FEMA or DWR.

Objective LU-9.1 Undertake measures to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents and businesses in Tracy.

Policies

P1. The City shall maintain the Sustainability Action Plan.

Actions

A1. Implement and regularly update the Sustainability Action Plan every five years.

**2. Community Character Element**

Objective CC-1.1

Policies

P2. The City shall promote the development of urban green space, including community squares, parks, rooftop gardens and plazas.

Objective CC-4.1

Policies

~~P2. Development at the edges of Tracy shall have "hard" and "soft" edges in the locations shown in Figure 3-3. A "soft edge" is defined as a gradual or smooth transition between urban and rural uses. A "hard edge" is clearly defined or abrupt transition between urban and rural uses.~~

~~P3.~~P2. To the extent feasible, the City shall use land use designations and open space preservation techniques to create ~~a soft edge to the city~~ appropriate transitions. A variety of techniques can be used to create the soft or hard edges to the City including the following:

- Buffer Zone. Soft edges can be created with buffer zones such as natural open space, large setbacks and landscaped areas, as a means to separate urban from rural uses. Buffer areas shall be planted and maintained by the property owner, tenants or homeowners association and may include passive and active recreation areas such as picnic areas, bridle, and walking trails. Golf course development may also be an option in areas where a soft edge is desired.

- Cluster Development. Clustered development is a method of site planning in which structures are clustered on a given site in the interest of preserving open space or creating a buffer. Areas with clustered development typically have low gross residential densities and high minimum open space requirements to encourage the clustering of structures.

- Feathering of Density. A gradual reduction in residential density can be used to establish a smooth transition between urban and rural uses.

~~P4. In select locations within the Sphere of Influence, new development shall have a "hard edge," which is a clearly defined transition between urban and rural uses. Approximate locations for hard edges are shown in Figure 3-3. Hard edges shall be accomplished with a narrow landscaped or open space buffer. Areas where a hard edge shall be created generally include parcels separating industrial or commercial development from agriculture and open spaces and along freeways.~~

Objective CC-5.2

Policies

P4. In most instances, block lengths should be short, typically no more than 400 feet, to create ~~a fine grained~~ an easily navi-

gable street pattern that allows for multiple routes through a neighborhood and greater opportunities for pedestrian activity.

Objective CC-6.3

Policies

P2. Soundwalls shall only be permitted along arterial streets or freeways. Walls that are not intended for sound mitigation purposes, including other masonry, block and brick walls, may be permitted elsewhere as appropriate.

~~P6. The development and enforcement of restrictive covenants is encouraged.~~

Objective CC-7.1

Policies

P3. The City shall discourage new "strip" commercial development and encourage site design for new commercial projects that provide for pedestrian/bicycle access and proper building scale and proportion relative to the pedestrian realm.

Objective CC-10.2

Policies

P4. Shared parking may be used where appropriate ~~applicable~~ to reduce the total number of parking spaces and curb cuts.

**3. Economic Development Element**

Goal ED-1 A diversified and sustainable local economy.

Objective ED-1.2 Support and encourage a sustainable local economy.

Policies

P1. The City shall encourage businesses that use green practices.

P2. The City shall facilitate employment opportunities that minimize the need for automobile trips, such as live/work, telecommuting, satellite work centers, and home occupations, in addition to mixed-use development strategies.

P3. The City shall purchase green products from local businesses whenever feasible.

Objective ED-7.1

Actions

A2. Consult ~~Coordinate~~ with institutions of higher learning, regional partnerships, and state agencies dedicated to workforce issues (e.g., California Employment Development Department).

**4. Circulation Element**

Objective CIR-1.1

Actions

A2. Prepare Precise Plan Line studies for major new roads and widenings, and consult ~~coordinate~~ with Caltrans for new interchanges identified in the Roadway Master Plan in order to define the rights-of-way needed to construct future facilities.

A3. Consult ~~Coordinate~~ with San Joaquin County and the City of Lathrop to ensure that adequate rights-of-way are preserved in the City's Sphere of Influence.

Objective CIR-1.3 Adopt and enforce LOS standards that provide a high level of mobility and accessibility, for all modes, for residents and workers.

Policies

P1. To the extent feasible, the City shall strive for LOS D ~~C~~on all streets and intersections, with the LOS standard for each facility to be defined in the Transportation Master Plan in accordance with the opportunities and constraints identified through the traffic projections and analysis performed for that Plan. The following exceptions to the LOS D standard may be allowed~~, except as follows~~:

- LOS ~~D~~E or lower shall be allowed on streets and at intersections within one-quarter (1/4) mile of any freeway. This lower standard is intended to discourage inter-regional traffic from using Tracy streets.
- LOS E or lower shall be allowed in the Downtown and Bowtie area of Tracy, in order to create a pedestrian-friendly urban design character and densities necessary to support transit, bicycling and walking.

P2. The City may allow individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse effect on the character of the community, including pedestrian mobility, crossing times, and comfort/convenience.

P4. Roadways and freeways that are subject to State and regional agency oversight and/or are candidates for State-funded or federally-funded improvements should conform to the operational service requirements of the applicable agency.

Objective CIR-1.8 Minimize transportation-related energy use and impacts on the environment.

Policies

P1. Transportation projects shall avoid disrupting sensitive environmental resources.

P2. When possible, road construction and repair projects shall use sustainable materials.

P3. The City shall encourage the use of non-motorized transportation and low-emission vehicles.

Objective CIR-3.1

Policies

P5. The City shall establish a ¼-mile walkability standard for residents to access goods, services and recreational facilities.

P6~~5~~. New development shall include pedestrian and bicycle facilities internal to the development and that connect to city-wide facilities, such as parks, schools and recreational corridors, as well as adjacent development and other services.

Objective CIR-4.1

Policies

P1. The City shall promote efficient and affordable public transportation that serves all users.

P5. The City shall require ~~large~~ developments~~s~~ to provide for transit ~~with~~ and transit-related increased modal opportunities, such as adequate street widths and curb radii, bus turnouts, bus shelters, park-and-ride lots and multi-modal transit centers through the development and environmental review processes, if appropriate.

Objective CIR-4.2

Policies

P1. The City shall ~~continue to pursue the development of~~ complete the Multi Modal Transit Center at Central Avenue and 6th Street.

P3. The City shall encourage the expansion of transit services through consultation ~~coordination~~ and cooperation with the Bay Area Rapid Transit District (BART), San Joaquin Regional Rail Commission, San Joaquin Regional Transit District, the Altamont Commuter Express (ACE), on services that expand the mobility and accessibility of transporting people, goods and services in and through Tracy and the region.

**5. Open Space and Conservation**

Objective OSC-1.1

Policies

P3. New development should incorporate native vegetation into landscape plans and ~~discourage~~ reduce the use of invasive, non-native plant species.

P4. New development shall provide setbacks and buffers along riparian and critical habitat corridors. Where disturbance is unavoidable, on-site habitat mitigation or mitigation elsewhere in the county shall be provided, in accordance with the San Joaquin Multi Species Habitat Conservation and Open Space Plan.

Goal OSC-5 Efficient use of ~~energy~~ resources throughout the City of Tracy.

Objective OSC-5.1 Promote resource conservation.

Policies

P1. The City shall promote development patterns and construction standards that conserve resources through appropriate planning, housing types and design, and energy conservation practices.

P2. The City shall encourage the establishment and maintenance of trees on public and private property to create an urban forest.

P3. The City shall encourage landscaping that is water- and energy- efficient.

P4. The City shall encourage buildings to incorporate energy- and water-efficient technologies.

Objective OSC-5.3 Promote sustainability and energy efficiency and conservation through the City's direct actions.

Policies

P1. The City shall use local renewable energy resources when feasible.

P9. City purchasing policies shall require purchase of energy-efficient products, products that contain recycled materials, and products that reduce waste generated when feasible.

P11. The City shall use nontoxic materials whenever feasible.

**6. Public Facilities and Services**

Objective PF-1.1

Policies

P2. The City shall ensure that new development pays a fair and equitable amount to offset the costs for fire ~~and emergency~~ facilities by collecting a Public Buildings impact fee, or by requiring developers to build new facilities.

P4. Fire ~~sub-~~stations shall be constructed in new development areas in order to meet the ~~City's~~ South County Fire Authority's adopted response time requirements.

P5. New developments shall satisfy fire flow and hydrant requirements and other design requirements as established by the ~~City~~ Fire Department.

Objective PF-3.1

Policies

P1. The City shall consult ~~coordinate~~ with the school districts serving the City of Tracy to ensure the provision of educational facilities sufficient for the existing and anticipated kindergarten through twelfth grade population, and shall work to ensure that school facilities that serve new development are available concurrent with the need, to the extent allowed by State law.

Objective PF-5.1

Policies

P1. Promote redesign, reuse, composting, and shared producer responsibility of discarded materials.

P6. City buildings shall be rehabilitated and reused when feasible.

Objective PF-6.1 Ensure that reliable water supply can be provided within the City's service area, even during drought conditions, while protecting the natural environment.

Policies

P4. The City shall establish water demand reduction standards for new development and redevelopment to reduce per capita and total demand for water.

Objective PF-7.4

Policies

P4. The City shall establish wastewater treatment demand reduction standards for new development and redevelopment to reduce per capita and total demand for wastewater treatment.

**7. Safety Element**

Objective SA-2.1

Policies

P2. Public and private development ~~facilities~~ in the 100-year flood zones shall have the lowest floor elevated at least 1 foot above the base flood level, or be of flood proof construction.~~be floodproofed to a point at or above the base flood level elevation.~~

Actions

A4. Maintain historical data on flooding.

Objective SA-2.2 Maintain a high level of preparedness in the event of flooding.

Policies

P1. The City shall maintain operational contingency plans for essential public facilities in the event of flooding.

P2. The City shall locate, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities, or identify construction or other methods to minimize damage if these facilities are located in flood hazard zones.

P3. The City shall continue to work with other public agencies responsible for flood protection, including the Central Valley Flood Protection Board, the San Joaquin Office of Emergency Services, and the US Army Corps of Engineers.

Actions

A1. Update the General Plan within 24 months of the adoption of the Central Valley Flood Protection Plan (CVFPP) to appropriately reflect the CVFPP and to identify State and local flood management facilities and flood hazard zones.

Objective SA-4.1

Actions

A2. Consult ~~Coordinate~~ with San Joaquin County Office of Emergency Services to maintain an inventory of businesses or facilities involved in the transportation, use and storage of hazardous materials.

**10. Air Quality Element**

Goal AQ-1 Improved air quality and reduced greenhouse gas emissions.

Objective AQ-1.1 Improve air quality and reduce greenhouse gas emissions through land use planning decisions.

Objective AQ-1.2 Promote development that minimizes air pollutant and greenhouse gas emissions and their impact on sensitive receptors as a result of indirect and stationary sources.

Policies

P4. New development projects should incorporate energy efficient design features for HVAC, lighting systems and insulation that ~~meet or~~ exceed Title 24.

P6. Installation of solar voltaic panels on new homes and businesses shall be encouraged.

~~P9. Natural gas fireplaces and pelletized fuel or natural gas space heating systems are encouraged.~~

P13. Residential developments and other projects with sensitive receptors shall be analyzed in accordance with CARB and SJVAPCD recommendations. ~~located an adequate distance from odor sources such as freeways, arterial roadways and stationary air pollutant sources~~.

P14. Developments that significantly impact air quality shall only be approved if all feasible ~~reasonable~~ mitigation measures to avoid, minimize or offset the impact are implemented.

Actions

A4. Develop a green building standard for new development.

A5. The City shall evaluate the installation of light emitting diodes (LEDs) or similar technology for traffic, street and other outdoor lighting where feasible.

Objective AQ-1.3 Provide a diverse and efficient transportation system that minimizes air pollutant and greenhouse gas emissions.

Policies

P3. The City shall encourage employers to establish ~~in~~ Transportation Demand Management programs.

P5. The City shall require d~~D~~irect pedestrian and bicycle linkages from residential areas to parks, schools, retail areas, ~~Downtown,~~ high-frequency transit facilities and major employment areas ~~shall be planned and implemented~~.

Objective AQ-1.4

Policies

P1. The City shall continue to consult with other local, regional and State agencies on ~~coordinate~~ air quality planning efforts ~~with local, regional and State agencies~~ as well as encourage community participation in air quality planning.

P3. The City shall be proactive in reducing greenhouse gas emissions from City operations as well as new or renovated development.

Actions

A3. Develop a citywide sustainability strategy that would include a baseline inventory of greenhouse gas emissions from all sources within the City; greenhouse gas emissions reduction targets; and enforceable greenhouse gas emissions reduction measures.

### *B. Circulation Improvement Changes*

Under the General Plan Amendment, the SOI contraction would eliminate the need for an extension of Valpico Road that connects to a north-south arterial to Eleventh Street.

**APPENDIX B**

# EXISTING NOISE LEVEL MEASUREMENTS

# Noise Levels at LT-1
## Residential Land Uses at South End of English Oak Court
## Adjacent to Altamont Commuter Express Line and West Linne Road
## June 2-4, 2003

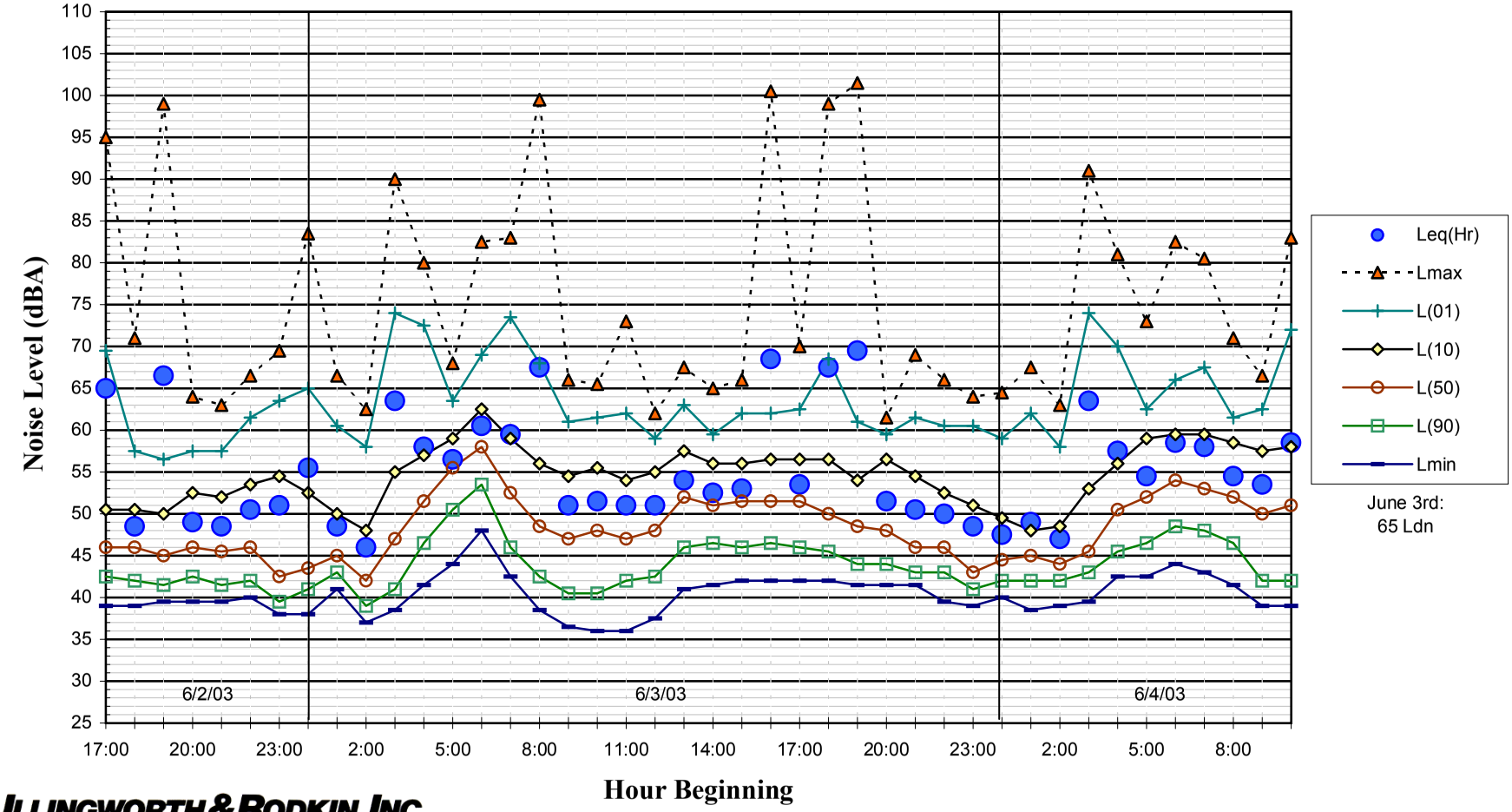


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**Figure 1**

**Noise Levels at LT-2**
**~ 35 feet from the Altamont Commuter Express Line near Chrisman Road**
**June 2-4, 2003**

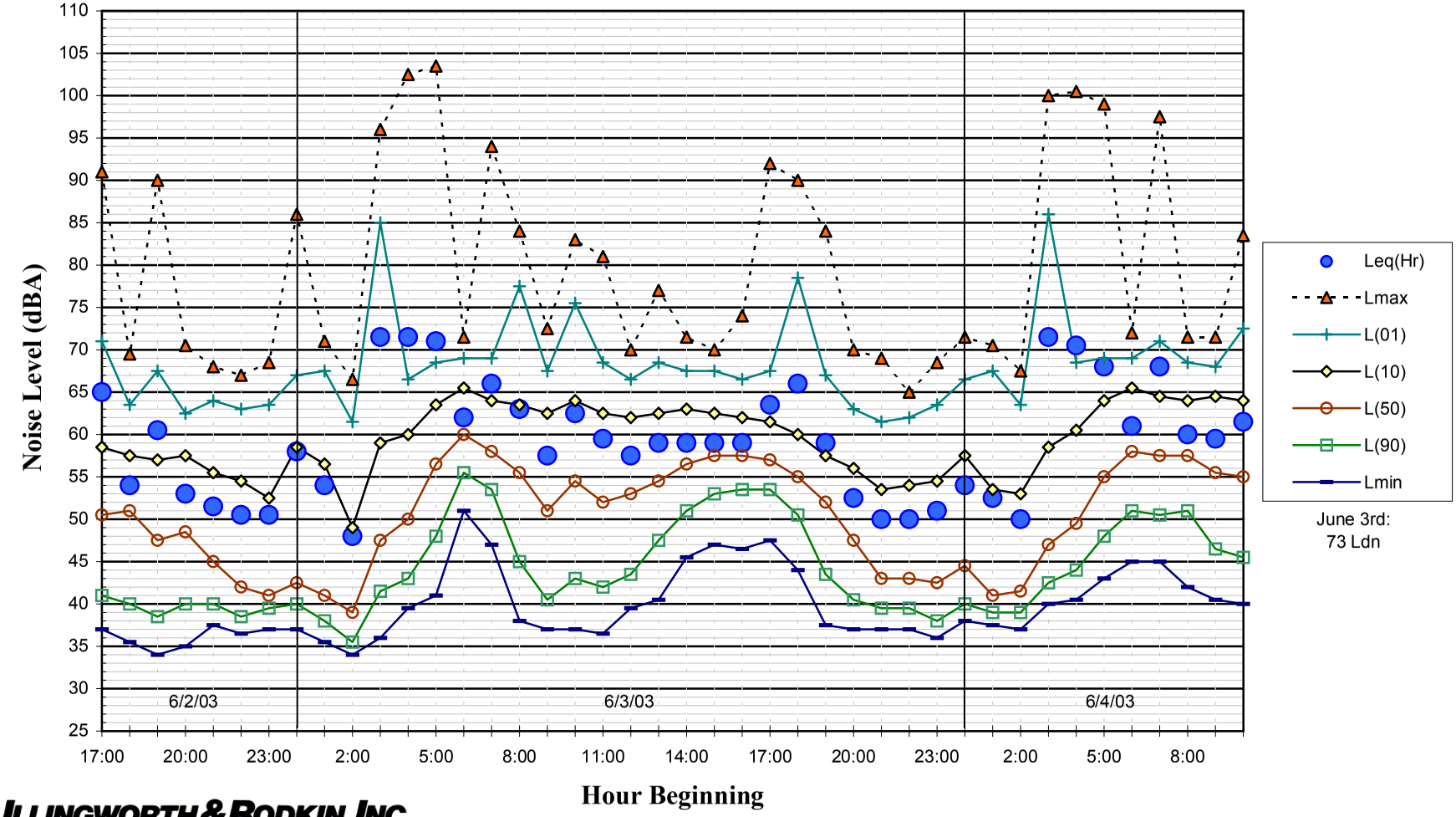


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**Figure 2**

## Noise Levels at LT-3

## June 2-4, 2003

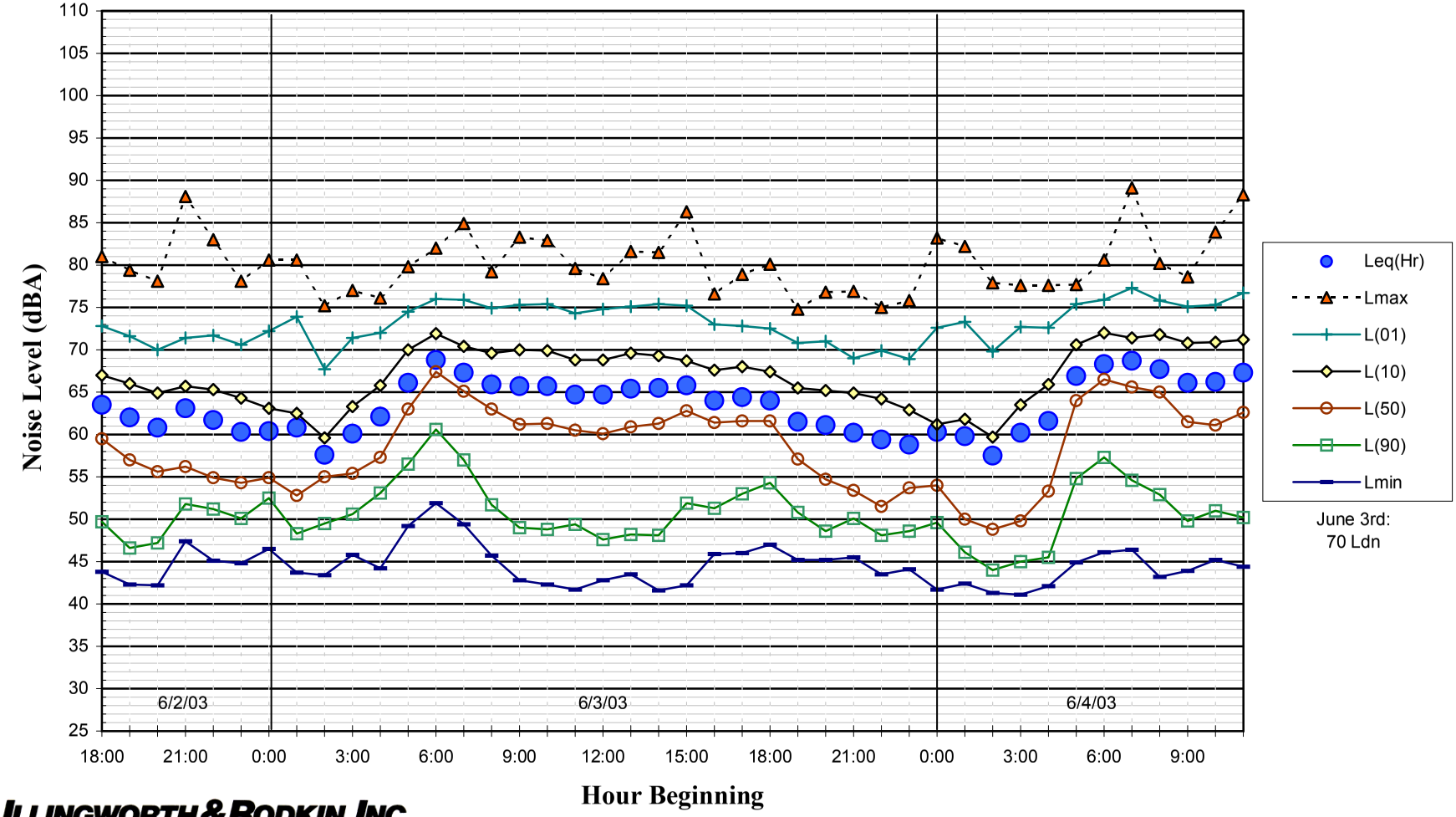


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Figure 3

## Noise Levels at LT-4

## June 4-6, 2003

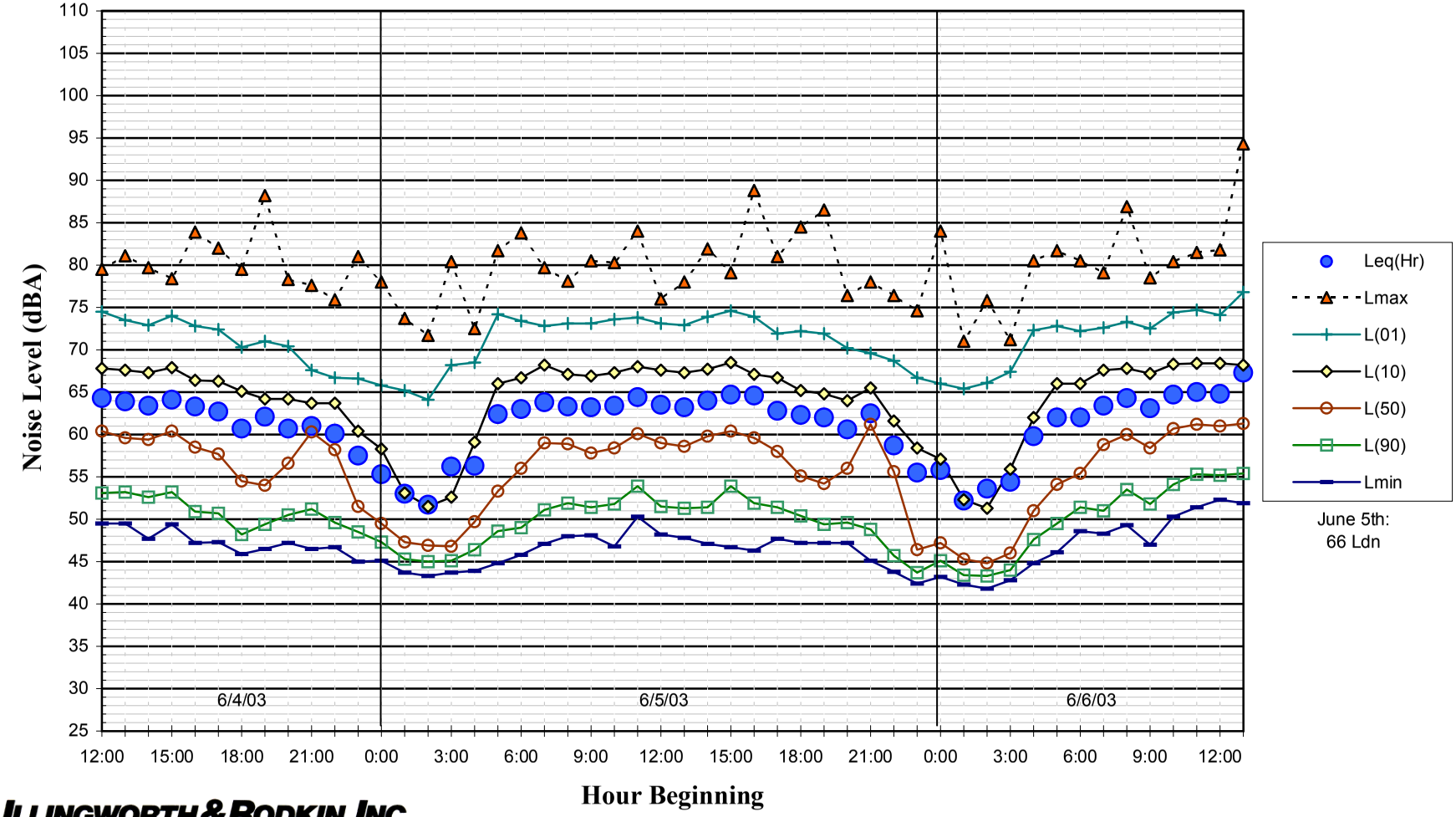


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Figure 4

**Noise Levels at LT-5**
**~ 90 feet from the Centerline of Eleventh Street at Wall Road**
**June 4-6, 2003**

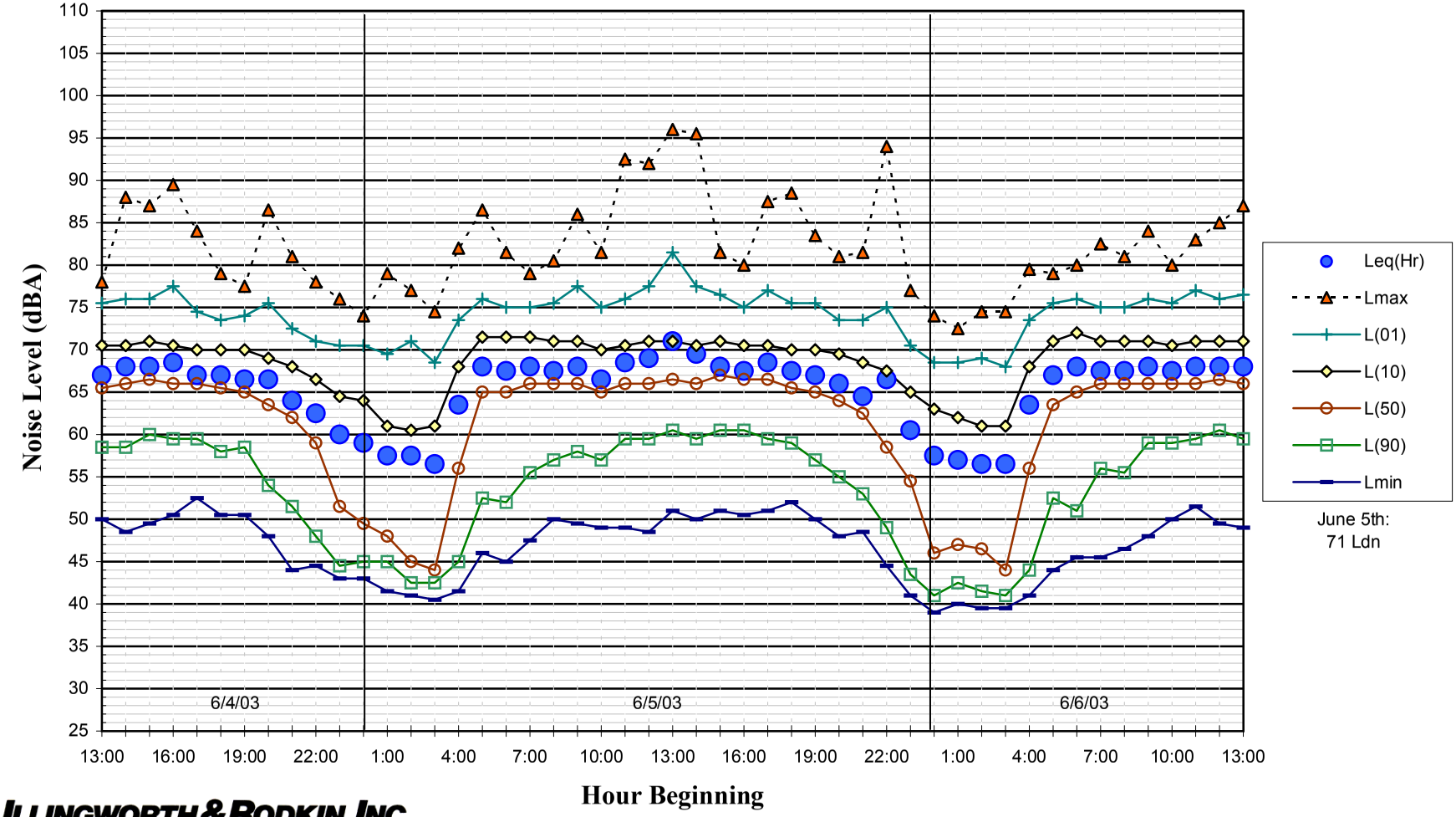


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**Figure 5**

# Noise Levels at LT-6
# 6th Street Railroad Junction
# June 4-6, 2003

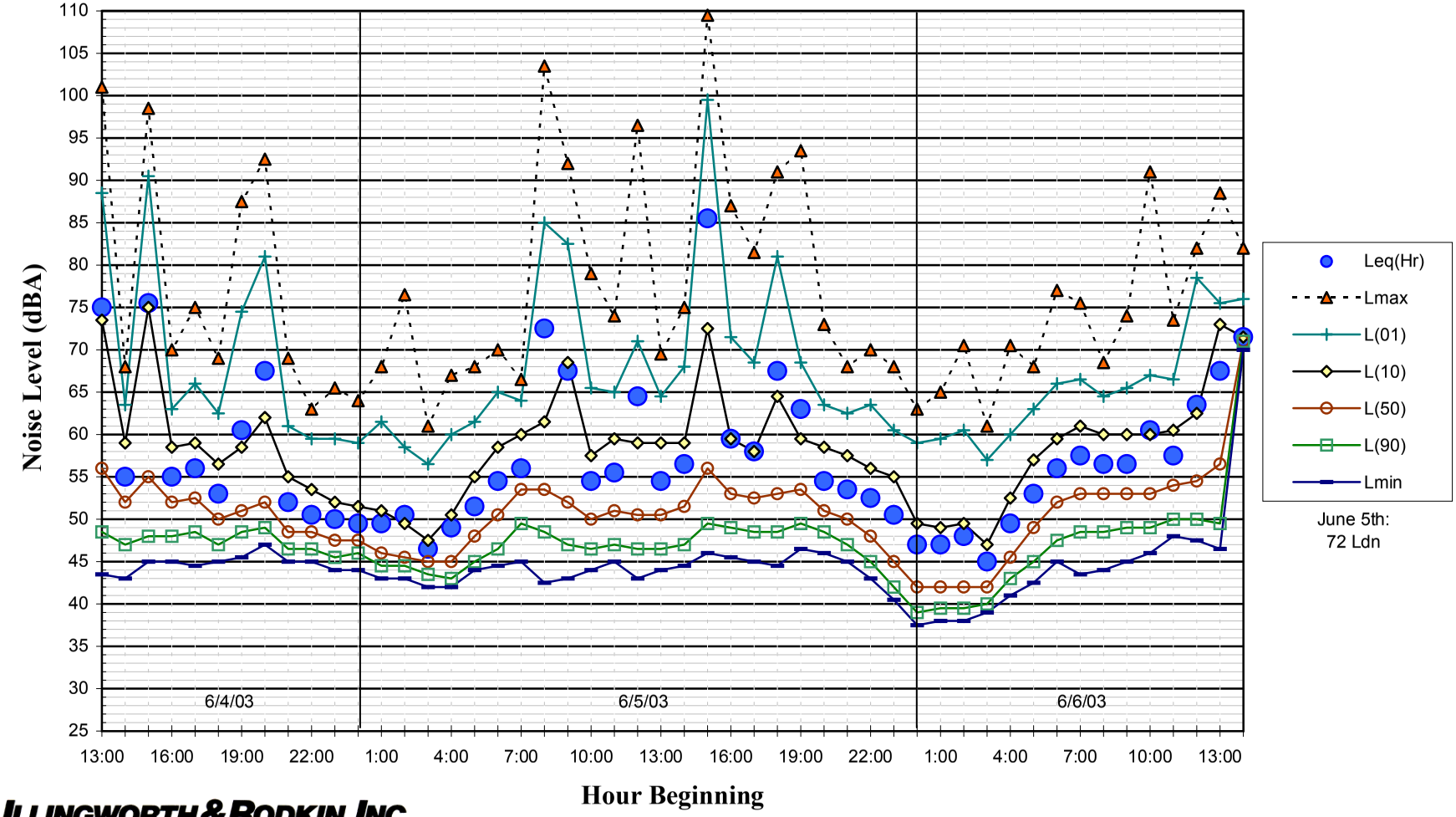


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Figure 6

## Noise Levels at LT-7

## June 4-6, 2003

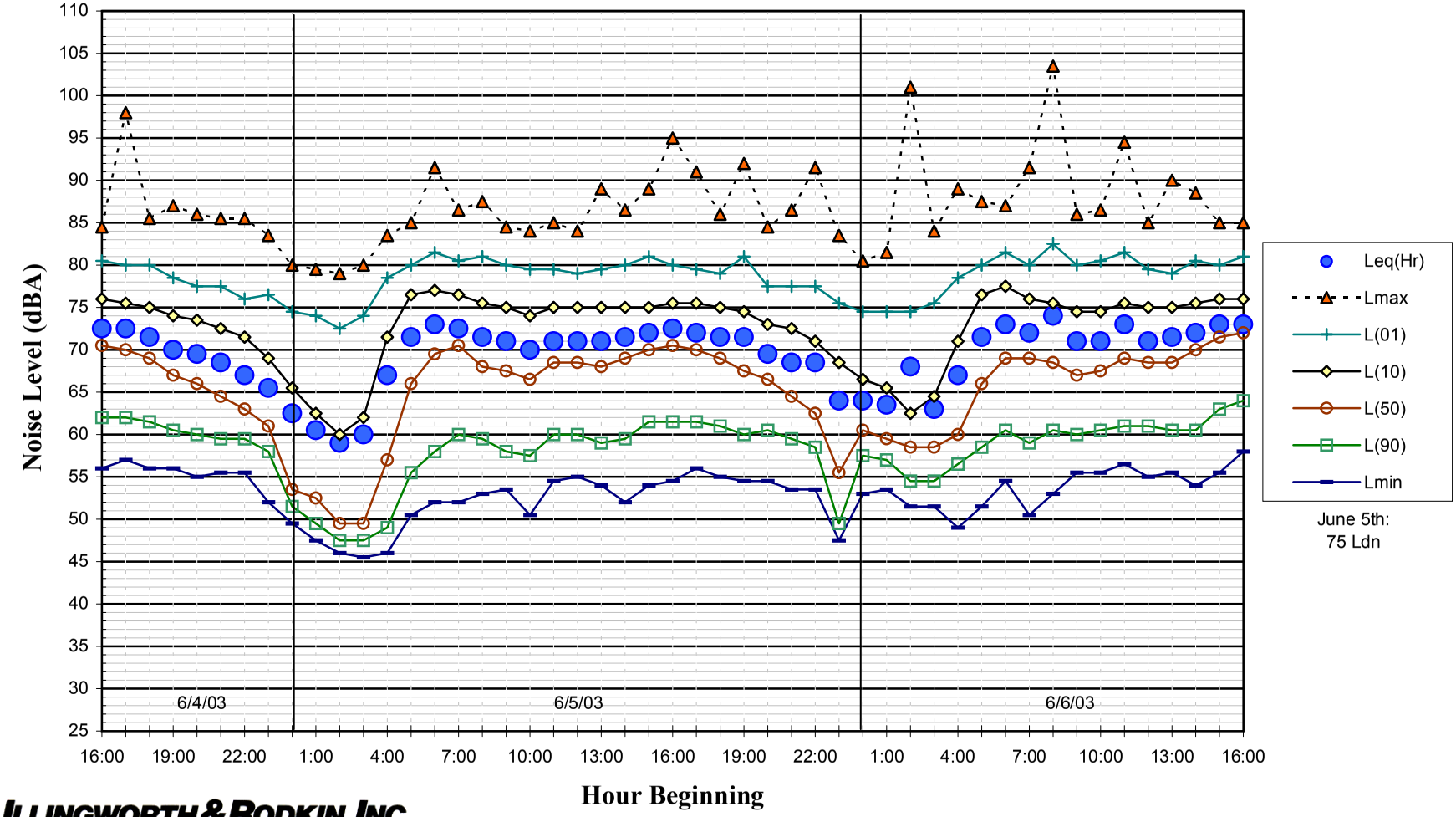


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Figure 7

**Noise Levels at LT-8**
**~ 80 feet from the Centerline of Tracy Boulevard at Dr. Powers Park**
**June 6-9, 2003**

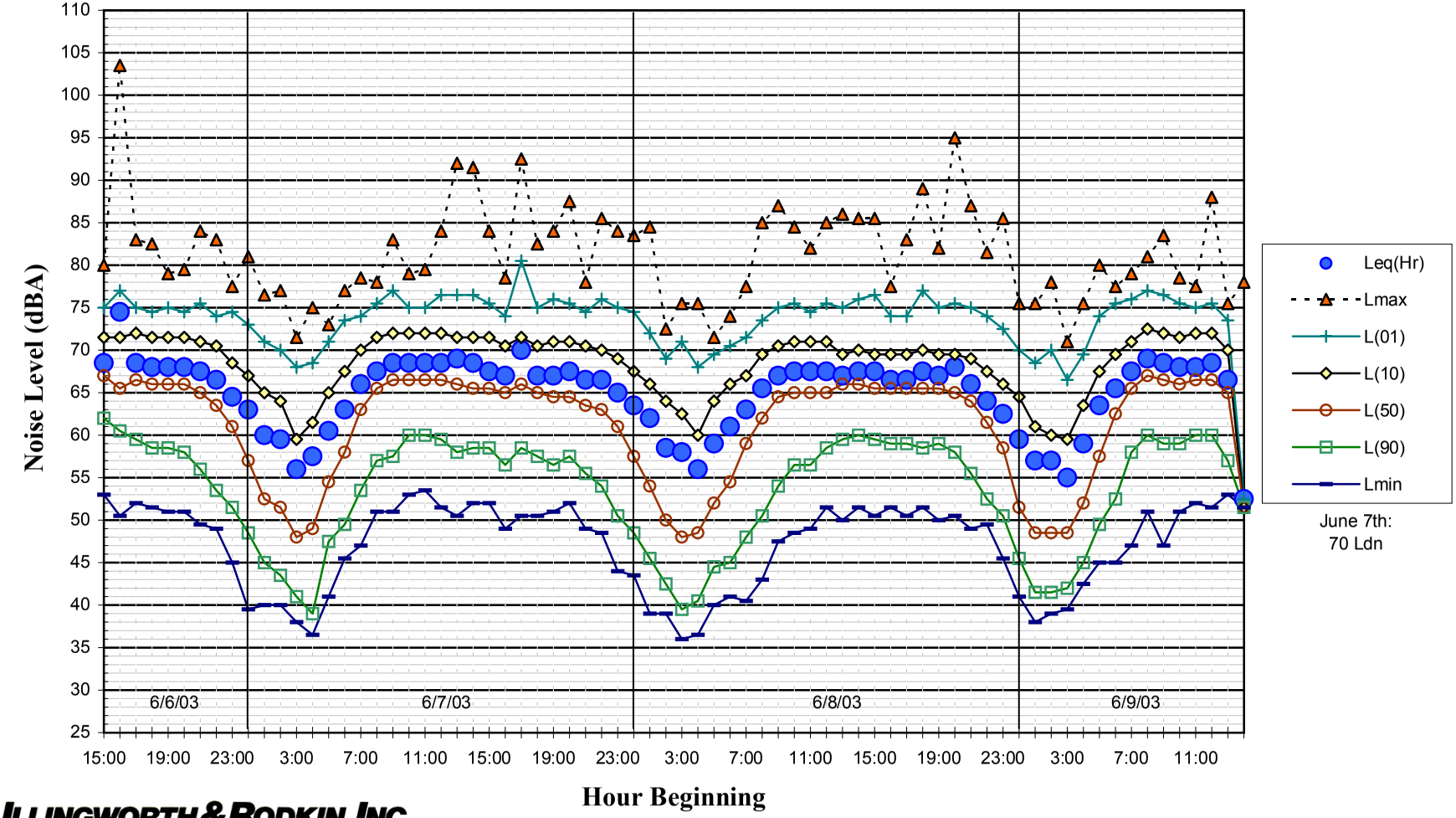


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**Figure 8**

## Noise Levels at LT-9

## June 6-9, 2003

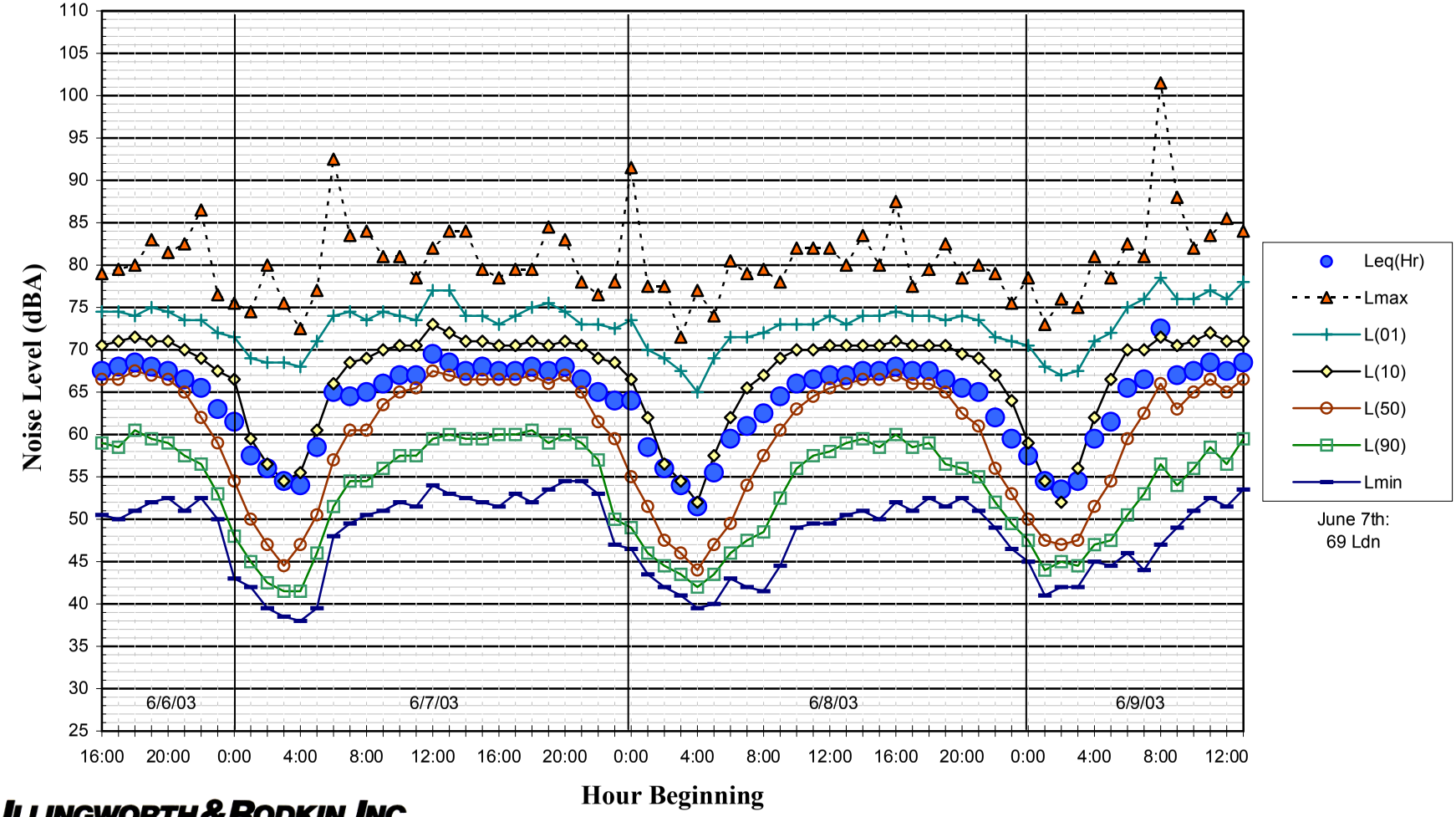


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Figure 9

# Noise Levels at LT-10
# West Larch Road east of Naglee Road
# June 6-9, 2003

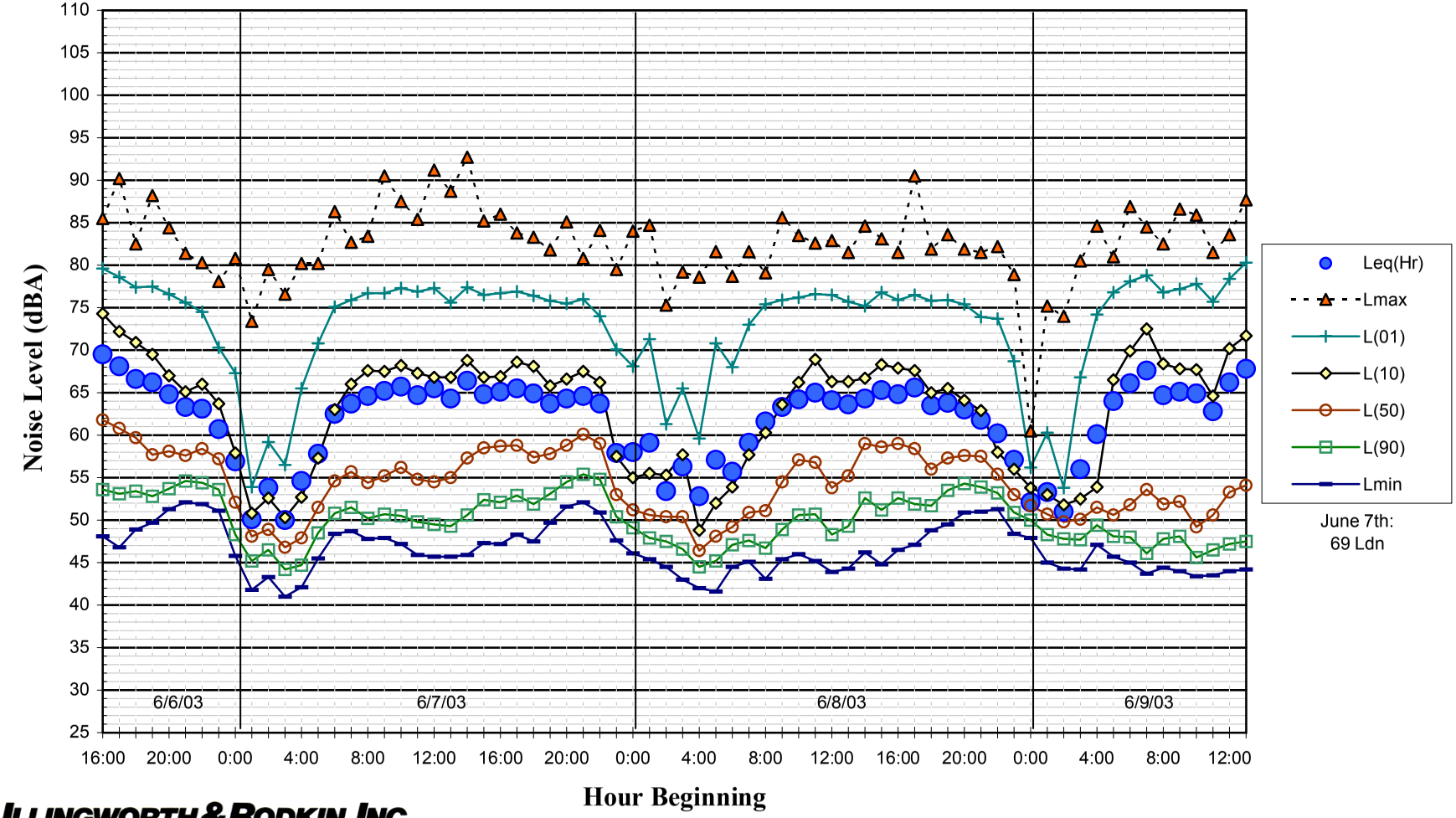


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**Figure 10**

**Noise Levels at LT-11**
**11240 Clover Road adjacent to I-205**
**October 31, 2000 - November 1, 2000**

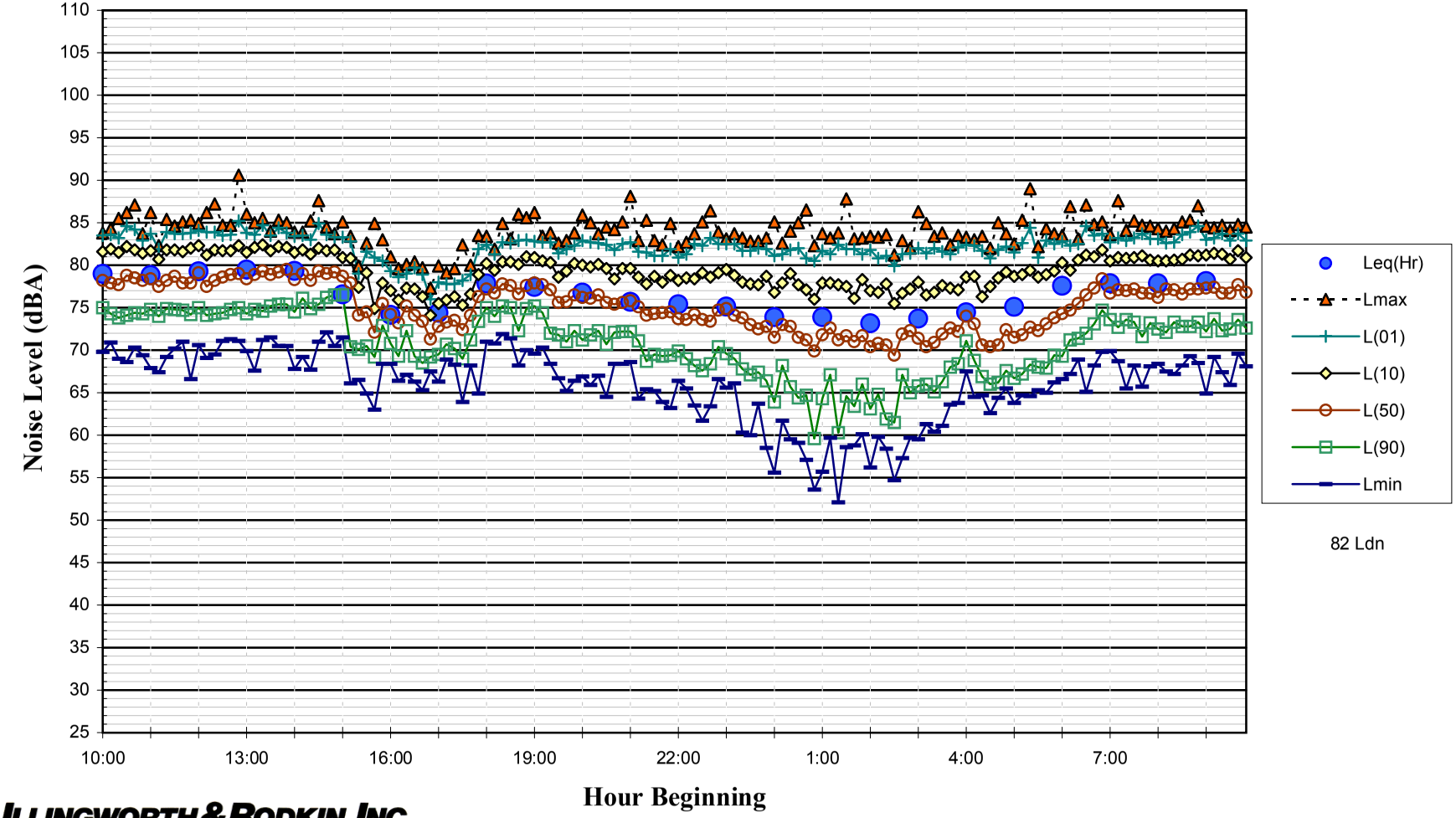


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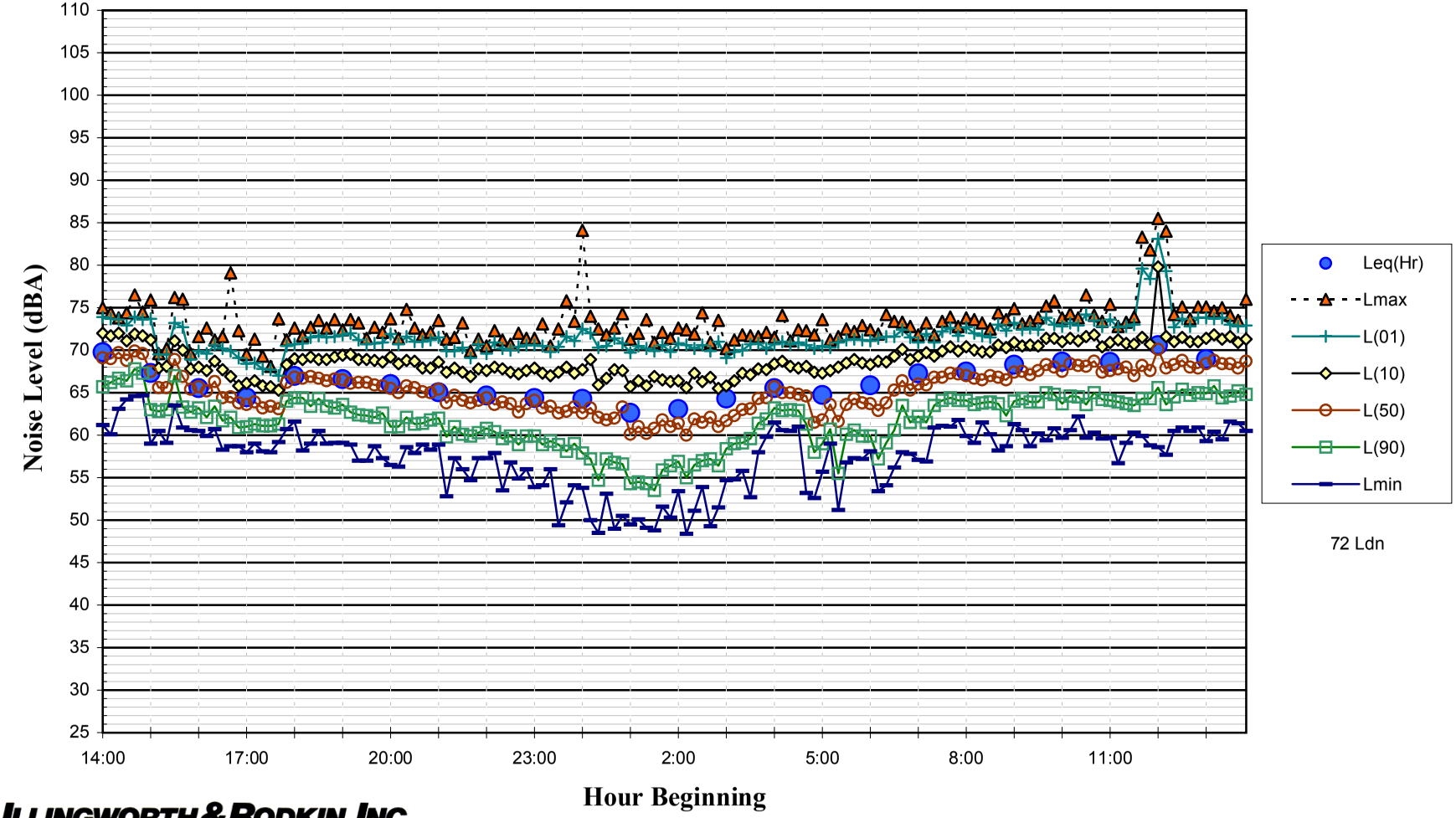
**Figure 11**

**Noise Levels at LT-12**
**Rear Yard of 245 Hawthorne Drive Adjacent to I-205 (Shielded by Sound Wall)**
**January 29, 2001 - January 30, 2001**




ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

**Figure 12**

LT-1 English Oak Ct.

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 3 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2-Jun | 16:16:00 | 50.5 | 36.5 | 75 | 62.5 | 51.5 | 46 | 42 | | |
| 2-Jun | 17:00:00 | 65 | 39 | 95 | 69.5 | 50.5 | 46 | 42.5 | 3162277.66 | 65.2558887 |
| 2-Jun | 18:00:00 | 48.5 | 39 | 71 | 57.5 | 50.5 | 46 | 42 | 70794.57844 | |
| 2-Jun | 19:00:00 | 66.5 | 39.5 | 99 | 56.5 | 50 | 45 | 41.5 | 4466835.922 | |
| 2-Jun | 20:00:00 | 49 | 39.5 | 64 | 57.5 | 52.5 | 46 | 42.5 | 79432.82347 | |
| 2-Jun | 21:00:00 | 48.5 | 39.5 | 63 | 57.5 | 52 | 45.5 | 41.5 | 70794.57844 | |
| 2-Jun | 22:00:00 | 50.5 | 40 | 66.5 | 61.5 | 53.5 | 46 | 42 | 1122018.454 | |
| 2-Jun | 23:00:00 | 51 | 38 | 69.5 | 63.5 | 54.5 | 42.5 | 39.5 | 1258925.412 | |
| 3-Jun | 0:00:00 | 55.5 | 38 | 83.5 | 65 | 52.5 | 43.5 | 41 | 3548133.892 | |
| 3-Jun | 1:00:00 | 48.5 | 41 | 66.5 | 60.5 | 50 | 45 | 43 | 707945.7844 | |
| 3-Jun | 2:00:00 | 46 | 37 | 62.5 | 58 | 48 | 42 | 39 | 398107.1706 | |
| 3-Jun | 3:00:00 | 63.5 | 38.5 | 90 | 74 | 55 | 47 | 41 | 22387211.39 | |
| 3-Jun | 4:00:00 | 58 | 41.5 | 80 | 72.5 | 57 | 51.5 | 46.5 | 6309573.445 | |
| 3-Jun | 5:00:00 | 56.5 | 44 | 68 | 63.5 | 59 | 55.5 | 50.5 | 4466835.922 | |
| 3-Jun | 6:00:00 | 60.5 | 48 | 82.5 | 69 | 62.5 | 58 | 53.5 | 11220184.54 | |
| 3-Jun | 7:00:00 | 59.5 | 42.5 | 83 | 73.5 | 59 | 52.5 | 46 | 891250.9381 | |
| 3-Jun | 8:00:00 | 67.5 | 38.5 | 99.5 | 68 | 56 | 48.5 | 42.5 | 5623413.252 | |
| 3-Jun | 9:00:00 | 51 | 36.5 | 66 | 61 | 54.5 | 47 | 40.5 | 125892.5412 | |
| 3-Jun | 10:00:00 | 51.5 | 36 | 65.5 | 61.5 | 55.5 | 48 | 40.5 | 141253.7545 | |
| 3-Jun | 11:00:00 | 51 | 36 | 73 | 62 | 54 | 47 | 42 | 125892.5412 | |
| 3-Jun | 12:00:00 | 51 | 37.5 | 62 | 59 | 55 | 48 | 42.5 | 125892.5412 | |
| 3-Jun | 13:00:00 | 54 | 41 | 67.5 | 63 | 57.5 | 52 | 46 | 251188.6432 | |
| 3-Jun | 14:00:00 | 52.5 | 41.5 | 65 | 59.5 | 56 | 51 | 46.5 | 177827.941 | |
| 3-Jun | 15:00:00 | 53 | 42 | 66 | 62 | 56 | 51.5 | 46 | 199526.2315 | |
| 3-Jun | 16:00:00 | 68.5 | 42 | 100.5 | 62 | 56.5 | 51.5 | 46.5 | 7079457.844 | |
| 3-Jun | 17:00:00 | 53.5 | 42 | 70 | 62.5 | 56.5 | 51.5 | 46 | 223872.1139 | |
| 3-Jun | 18:00:00 | 67.5 | 42 | 99 | 68.5 | 56.5 | 50 | 45.5 | 5623413.252 | |
| 3-Jun | 19:00:00 | 69.5 | 41.5 | 101.5 | 61 | 54 | 48.5 | 44 | 8912509.381 | |
| 3-Jun | 20:00:00 | 51.5 | 41.5 | 61.5 | 59.5 | 56.5 | 48 | 44 | 141253.7545 | |
| 3-Jun | 21:00:00 | 50.5 | 41.5 | 69 | 61.5 | 54.5 | 46 | 43 | 112201.8454 | |
| 3-Jun | 22:00:00 | 50 | 39.5 | 66 | 60.5 | 52.5 | 46 | 43 | 1000000 | |
| 3-Jun | 23:00:00 | 48.5 | 39 | 64 | 60.5 | 51 | 43 | 41 | 707945.7844 | |
| 4-Jun | 0:00:00 | 47.5 | 40 | 64.5 | 59 | 49.5 | 44.5 | 42 | 562341.3252 | |
| 4-Jun | 1:00:00 | 49 | 38.5 | 67.5 | 62 | 48 | 45 | 42 | 794328.2347 | |
| 4-Jun | 2:00:00 | 47 | 39 | 63 | 58 | 48.5 | 44 | 42 | 501187.2336 | |
| 4-Jun | 3:00:00 | 63.5 | 39.5 | 91 | 74 | 53 | 45.5 | 43 | 22387211.39 | |
| 4-Jun | 4:00:00 | 57.5 | 42.5 | 81 | 70 | 56 | 50.5 | 45.5 | 5623413.252 | |
| 4-Jun | 5:00:00 | 54.5 | 42.5 | 73 | 62.5 | 59 | 52 | 46.5 | 2818382.931 | |
| 4-Jun | 6:00:00 | 58.5 | 44 | 82.5 | 66 | 59.5 | 54 | 48.5 | 7079457.844 | |
| 4-Jun | 7:00:00 | 58 | 43 | 80.5 | 67.5 | 59.5 | 53 | 48 | 630957.3445 | |
| 4-Jun | 8:00:00 | 54.5 | 41.5 | 71 | 61.5 | 58.5 | 52 | 46.5 | 281838.2931 | |
| 4-Jun | 9:00:00 | 53.5 | 39 | 66.5 | 62.5 | 57.5 | 50 | 42 | 223872.1139 | |
| 4-Jun | 10:00:00 | 58.5 | 39 | 83 | 72 | 58 | 51 | 42 | 707945.7844 | |

LT-2 Altamont line

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 3 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2-Jun | 16:49:00 | 59.5 | 39 | 83.5 | 74 | 59.5 | 51.5 | 43.5 | | |
| 2-Jun | 17:00:00 | 65 | 37 | 91 | 71 | 58.5 | 50.5 | 41 | 3162277.66 | 72.78944166 |
| 2-Jun | 18:00:00 | 54 | 35.5 | 69.5 | 63.5 | 57.5 | 51 | 40 | 251188.6432 | |
| 2-Jun | 19:00:00 | 60.5 | 34 | 90 | 67.5 | 57 | 47.5 | 38.5 | 1122018.454 | |
| 2-Jun | 20:00:00 | 53 | 35 | 70.5 | 62.5 | 57.5 | 48.5 | 40 | 199526.2315 | |
| 2-Jun | 21:00:00 | 51.5 | 37.5 | 68 | 64 | 55.5 | 45 | 40 | 141253.7545 | |
| 2-Jun | 22:00:00 | 50.5 | 36.5 | 67 | 63 | 54.5 | 42 | 38.5 | 1122018.454 | |
| 2-Jun | 23:00:00 | 50.5 | 37 | 68.5 | 63.5 | 52.5 | 41 | 39.5 | 1122018.454 | |
| 3-Jun | 0:00:00 | 58 | 37 | 86 | 67 | 58.5 | 42.5 | 40 | 6309573.445 | |
| 3-Jun | 1:00:00 | 54 | 35.5 | 71 | 67.5 | 56.5 | 41 | 38 | 2511886.432 | |
| 3-Jun | 2:00:00 | 48 | 34 | 66.5 | 61.5 | 49 | 39 | 35.5 | 630957.3445 | |
| 3-Jun | 3:00:00 | 71.5 | 36 | 96 | 85 | 59 | 47.5 | 41.5 | 141253754.5 | |
| 3-Jun | 4:00:00 | 71.5 | 39.5 | 102.5 | 66.5 | 60 | 50 | 43 | 141253754.5 | |
| 3-Jun | 5:00:00 | 71 | 41 | 103.5 | 68.5 | 63.5 | 56.5 | 48 | 125892541.2 | |
| 3-Jun | 6:00:00 | 62 | 51 | 71.5 | 69 | 65.5 | 60 | 55.5 | 15848931.92 | |
| 3-Jun | 7:00:00 | 66 | 47 | 94 | 69 | 64 | 58 | 53.5 | 3981071.706 | |
| 3-Jun | 8:00:00 | 63 | 38 | 84 | 77.5 | 63.5 | 55.5 | 45 | 1995262.315 | |
| 3-Jun | 9:00:00 | 57.5 | 37 | 72.5 | 67.5 | 62.5 | 51 | 40.5 | 562341.3252 | |
| 3-Jun | 10:00:00 | 62.5 | 37 | 83 | 75.5 | 64 | 54.5 | 43 | 1778279.41 | |
| 3-Jun | 11:00:00 | 59.5 | 36.5 | 81 | 68.5 | 62.5 | 52 | 42 | 891250.9381 | |
| 3-Jun | 12:00:00 | 57.5 | 39.5 | 70 | 66.5 | 62 | 53 | 43.5 | 562341.3252 | |
| 3-Jun | 13:00:00 | 59 | 40.5 | 77 | 68.5 | 62.5 | 54.5 | 47.5 | 794328.2347 | |
| 3-Jun | 14:00:00 | 59 | 45.5 | 71.5 | 67.5 | 63 | 56.5 | 51 | 794328.2347 | |
| 3-Jun | 15:00:00 | 59 | 47 | 70 | 67.5 | 62.5 | 57.5 | 53 | 794328.2347 | |
| 3-Jun | 16:00:00 | 59 | 46.5 | 74 | 66.5 | 62 | 57.5 | 53.5 | 794328.2347 | |
| 3-Jun | 17:00:00 | 63.5 | 47.5 | 92 | 67.5 | 61.5 | 57 | 53.5 | 2238721.139 | |
| 3-Jun | 18:00:00 | 66 | 44 | 90 | 78.5 | 60 | 55 | 50.5 | 3981071.706 | |
| 3-Jun | 19:00:00 | 59 | 37.5 | 84 | 67 | 57.5 | 52 | 43.5 | 794328.2347 | |
| 3-Jun | 20:00:00 | 52.5 | 37 | 70 | 63 | 56 | 47.5 | 40.5 | 177827.941 | |
| 3-Jun | 21:00:00 | 50 | 37 | 69 | 61.5 | 53.5 | 43 | 39.5 | 100000 | |
| 3-Jun | 22:00:00 | 50 | 37 | 65 | 62 | 54 | 43 | 39.5 | 1000000 | |
| 3-Jun | 23:00:00 | 51 | 36 | 68.5 | 63.5 | 54.5 | 42.5 | 38 | 1258925.412 | |
| 4-Jun | 0:00:00 | 54 | 38 | 71.5 | 66.5 | 57.5 | 44.5 | 40 | 2511886.432 | |
| 4-Jun | 1:00:00 | 52.5 | 37.5 | 70.5 | 67.5 | 53.5 | 41 | 39 | 1778279.41 | |
| 4-Jun | 2:00:00 | 50 | 37 | 67.5 | 63.5 | 53 | 41.5 | 39 | 1000000 | |
| 4-Jun | 3:00:00 | 71.5 | 40 | 100 | 86 | 58.5 | 47 | 42.5 | 141253754.5 | |
| 4-Jun | 4:00:00 | 70.5 | 40.5 | 100.5 | 68.5 | 60.5 | 49.5 | 44 | 112201845.4 | |
| 4-Jun | 5:00:00 | 68 | 43 | 99 | 69 | 64 | 55 | 48 | 63095734.45 | |
| 4-Jun | 6:00:00 | 61 | 45 | 72 | 69 | 65.5 | 58 | 51 | 12589254.12 | |
| 4-Jun | 7:00:00 | 68 | 45 | 97.5 | 71 | 64.5 | 57.5 | 50.5 | 6309573.445 | |
| 4-Jun | 8:00:00 | 60 | 42 | 71.5 | 68.5 | 64 | 57.5 | 51 | 1000000 | |
| 4-Jun | 9:00:00 | 59.5 | 40.5 | 71.5 | 68 | 64.5 | 55.5 | 46.5 | 891250.9381 | |
| 4-Jun | 10:00:00 | 61.5 | 40 | 83.5 | 72.5 | 64 | 55 | 45.5 | 1412537.545 | |

LT-3 Corner Of Chrisman Rd. and Cabe Rd.

| Date | Time | Leq | Lmin | Lmax | L( 1) | L(10) | L(50) | L(90) | Energy + Penalty | Ldn of Jun 3 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2-Jun | 17:09:59 | 64.8 | 46.8 | 79.5 | 75 | 68 | 61.7 | 51.3 | | |
| 2-Jun | 18:00:00 | 63.5 | 43.8 | 81 | 72.8 | 67 | 59.5 | 49.7 | 2238721.139 | 69.87184304 |
| 2-Jun | 19:00:00 | 62 | 42.3 | 79.4 | 71.6 | 66 | 57 | 46.6 | 1584893.192 | |
| 2-Jun | 20:00:00 | 60.8 | 42.2 | 78.1 | 70 | 64.9 | 55.6 | 47.2 | 1202264.435 | |
| 2-Jun | 21:00:00 | 63.1 | 47.4 | 88.1 | 71.4 | 65.7 | 56.2 | 51.8 | 2041737.945 | |
| 2-Jun | 22:00:00 | 61.7 | 45.1 | 83 | 71.7 | 65.3 | 54.9 | 51.2 | 14791083.88 | |
| 2-Jun | 23:00:00 | 60.3 | 44.8 | 78.1 | 70.6 | 64.3 | 54.3 | 50.1 | 10715193.05 | |
| 3-Jun | 0:00:00 | 60.4 | 46.5 | 80.6 | 72.2 | 63.1 | 54.9 | 52.5 | 10964781.96 | |
| 3-Jun | 1:00:00 | 60.8 | 43.7 | 80.6 | 73.9 | 62.5 | 52.8 | 48.3 | 12022644.35 | |
| 3-Jun | 2:00:00 | 57.6 | 43.4 | 75.2 | 67.7 | 59.6 | 55 | 49.5 | 5754399.373 | |
| 3-Jun | 3:00:00 | 60.1 | 45.8 | 77 | 71.4 | 63.3 | 55.4 | 50.6 | 10232929.92 | |
| 3-Jun | 4:00:00 | 62.1 | 44.2 | 76.1 | 72 | 65.8 | 57.3 | 53.1 | 16218100.97 | |
| 3-Jun | 5:00:00 | 66.1 | 49.2 | 79.8 | 74.5 | 70 | 63 | 56.5 | 40738027.78 | |
| 3-Jun | 6:00:00 | 68.8 | 51.9 | 82 | 76 | 71.9 | 67.4 | 60.6 | 75857757.5 | |
| 3-Jun | 7:00:00 | 67.3 | 49.4 | 84.9 | 75.9 | 70.4 | 65.1 | 57 | 5370317.964 | |
| 3-Jun | 8:00:00 | 65.9 | 45.7 | 79.2 | 74.9 | 69.6 | 63 | 51.7 | 3890451.45 | |
| 3-Jun | 9:00:00 | 65.7 | 42.8 | 83.3 | 75.3 | 70 | 61.2 | 49 | 3715352.291 | |
| 3-Jun | 10:00:00 | 65.7 | 42.3 | 82.9 | 75.4 | 69.9 | 61.3 | 48.8 | 3715352.291 | |
| 3-Jun | 11:00:00 | 64.7 | 41.7 | 79.6 | 74.3 | 68.8 | 60.5 | 49.4 | 2951209.227 | |
| 3-Jun | 12:00:00 | 64.7 | 42.8 | 78.4 | 74.8 | 68.8 | 60.1 | 47.6 | 2951209.227 | |
| 3-Jun | 13:00:00 | 65.4 | 43.5 | 81.6 | 75.1 | 69.6 | 60.9 | 48.2 | 3467368.505 | |
| 3-Jun | 14:00:00 | 65.5 | 41.6 | 81.5 | 75.4 | 69.3 | 61.3 | 48.1 | 3548133.892 | |
| 3-Jun | 15:00:00 | 65.8 | 42.2 | 86.3 | 75.2 | 68.7 | 62.8 | 51.9 | 3801893.963 | |
| 3-Jun | 16:00:00 | 64 | 45.9 | 76.6 | 73 | 67.6 | 61.4 | 51.3 | 2511886.432 | |
| 3-Jun | 17:00:00 | 64.4 | 46 | 78.9 | 72.8 | 68 | 61.6 | 53 | 2754228.703 | |
| 3-Jun | 18:00:00 | 64 | 47 | 80.1 | 72.5 | 67.4 | 61.6 | 54.3 | 2511886.432 | |
| 3-Jun | 19:00:00 | 61.5 | 45.2 | 74.8 | 70.8 | 65.5 | 57.1 | 50.8 | 1412537.545 | |
| 3-Jun | 20:00:00 | 61.1 | 45.2 | 76.8 | 71 | 65.2 | 54.7 | 48.6 | 1288249.552 | |
| 3-Jun | 21:00:00 | 60.2 | 45.5 | 76.9 | 69 | 64.9 | 53.4 | 50.1 | 1047128.548 | |
| 3-Jun | 22:00:00 | 59.4 | 43.5 | 75 | 69.9 | 64.2 | 51.5 | 48.1 | 8709635.9 | |
| 3-Jun | 23:00:00 | 58.8 | 44.1 | 75.8 | 68.9 | 62.9 | 53.7 | 48.6 | 7585775.75 | |
| 4-Jun | 0:00:00 | 60.3 | 41.7 | 83.2 | 72.6 | 61.2 | 54 | 49.6 | 10715193.05 | |
| 4-Jun | 1:00:00 | 59.8 | 42.4 | 82.2 | 73.3 | 61.8 | 50 | 46.1 | 9549925.86 | |
| 4-Jun | 2:00:00 | 57.5 | 41.3 | 77.9 | 69.8 | 59.7 | 48.8 | 44 | 5623413.252 | |
| 4-Jun | 3:00:00 | 60.2 | 41.1 | 77.6 | 72.7 | 63.5 | 49.8 | 45 | 10471285.48 | |
| 4-Jun | 4:00:00 | 61.6 | 42.1 | 77.6 | 72.6 | 65.9 | 53.3 | 45.5 | 14454397.71 | |
| 4-Jun | 5:00:00 | 66.9 | 44.9 | 77.7 | 75.4 | 70.6 | 64 | 54.8 | 48977881.94 | |
| 4-Jun | 6:00:00 | 68.3 | 46.1 | 80.6 | 75.9 | 72 | 66.5 | 57.3 | 67608297.54 | |
| 4-Jun | 7:00:00 | 68.7 | 46.4 | 89.1 | 77.3 | 71.4 | 65.6 | 54.6 | 7413102.413 | |
| 4-Jun | 8:00:00 | 67.7 | 43.2 | 80.2 | 75.8 | 71.8 | 65 | 52.9 | 5888436.554 | |
| 4-Jun | 9:00:00 | 66.1 | 43.9 | 78.6 | 75.1 | 70.8 | 61.5 | 49.8 | 4073802.778 | |
| 4-Jun | 10:00:00 | 66.2 | 45.2 | 83.9 | 75.3 | 70.9 | 61.1 | 51 | 4168693.835 | |
| 4-Jun | 11:00:00 | 67.3 | 44.4 | 88.3 | 76.7 | 71.2 | 62.6 | 50.2 | 5370317.964 | |

LT-4 N. MacArthur

| Date | Time | Leq | Lmin | Lmax | L( 1) | L(10) | L(50) | L(90) | Energy + Penalty | Ldn of Jun 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4-Jun | 11:52:15 | 69.3 | 51.1 | 91.6 | 82.8 | 68.3 | 61 | 55.8 | | |
| 4-Jun | 12:00:00 | 64.3 | 49.5 | 79.5 | 74.5 | 67.8 | 60.4 | 53.1 | 2691534.804 | 66.01822084 |
| 4-Jun | 13:00:00 | 63.9 | 49.5 | 81.1 | 73.5 | 67.6 | 59.6 | 53.2 | 2454708.916 | |
| 4-Jun | 14:00:00 | 63.4 | 47.7 | 79.7 | 72.9 | 67.3 | 59.4 | 52.6 | 2187761.624 | |
| 4-Jun | 15:00:00 | 64.1 | 49.4 | 78.4 | 74 | 67.9 | 60.4 | 53.2 | 2570395.783 | |
| 4-Jun | 16:00:00 | 63.3 | 47.2 | 83.9 | 72.8 | 66.4 | 58.5 | 50.9 | 2137962.09 | |
| 4-Jun | 17:00:00 | 62.7 | 47.3 | 82 | 72.4 | 66.3 | 57.7 | 50.7 | 1862087.137 | |
| 4-Jun | 18:00:00 | 60.7 | 45.9 | 79.5 | 70.3 | 65.1 | 54.5 | 48.2 | 1174897.555 | |
| 4-Jun | 19:00:00 | 62.1 | 46.5 | 88.2 | 71 | 64.2 | 54 | 49.4 | 1621810.097 | |
| 4-Jun | 20:00:00 | 60.7 | 47.2 | 78.3 | 70.4 | 64.2 | 56.6 | 50.5 | 1174897.555 | |
| 4-Jun | 21:00:00 | 61 | 46.5 | 77.6 | 67.6 | 63.7 | 60.3 | 51.2 | 1258925.412 | |
| 4-Jun | 22:00:00 | 60.1 | 46.7 | 75.9 | 66.7 | 63.7 | 58.2 | 49.6 | 10232929.92 | |
| 4-Jun | 23:00:00 | 57.5 | 45 | 81 | 66.6 | 60.4 | 51.5 | 48.5 | 5623413.252 | |
| 5-Jun | 0:00:00 | 55.3 | 45.1 | 78 | 65.8 | 58.3 | 49.5 | 47.3 | 3388441.561 | |
| 5-Jun | 1:00:00 | 53 | 43.7 | 73.7 | 65.2 | 53.1 | 47.3 | 45.3 | 1995262.315 | |
| 5-Jun | 2:00:00 | 51.7 | 43.3 | 71.7 | 64.1 | 51.5 | 46.9 | 45 | 1479108.388 | |
| 5-Jun | 3:00:00 | 56.2 | 43.7 | 80.4 | 68.2 | 52.6 | 46.8 | 45.1 | 4168693.835 | |
| 5-Jun | 4:00:00 | 56.3 | 43.9 | 72.5 | 68.5 | 59.1 | 49.7 | 46.4 | 4265795.188 | |
| 5-Jun | 5:00:00 | 62.4 | 44.8 | 81.7 | 74.2 | 66 | 53.3 | 48.6 | 17378008.29 | |
| 5-Jun | 6:00:00 | 63 | 45.8 | 83.8 | 73.4 | 66.7 | 56 | 49 | 19952623.15 | |
| 5-Jun | 7:00:00 | 63.8 | 47.1 | 79.7 | 72.8 | 68.2 | 59 | 51.1 | 2398832.919 | |
| 5-Jun | 8:00:00 | 63.3 | 48 | 78.1 | 73.1 | 67.1 | 58.9 | 51.9 | 2137962.09 | |
| 5-Jun | 9:00:00 | 63.2 | 48.1 | 80.5 | 73.1 | 66.9 | 57.8 | 51.4 | 2089296.131 | |
| 5-Jun | 10:00:00 | 63.4 | 46.8 | 80.3 | 73.6 | 67.3 | 58.4 | 51.8 | 2187761.624 | |
| 5-Jun | 11:00:00 | 64.4 | 50.3 | 84 | 73.8 | 68 | 60.1 | 53.9 | 2754228.703 | |
| 5-Jun | 12:00:00 | 63.5 | 48.2 | 76 | 73.1 | 67.6 | 59 | 51.5 | 2238721.139 | |
| 5-Jun | 13:00:00 | 63.2 | 47.8 | 78 | 72.9 | 67.3 | 58.6 | 51.3 | 2089296.131 | |
| 5-Jun | 14:00:00 | 64 | 47.1 | 81.9 | 73.9 | 67.7 | 59.8 | 51.4 | 2511886.432 | |
| 5-Jun | 15:00:00 | 64.7 | 46.7 | 79.1 | 74.6 | 68.5 | 60.4 | 53.9 | 2951209.227 | |
| 5-Jun | 16:00:00 | 64.6 | 46.3 | 88.8 | 73.9 | 67.1 | 59.6 | 51.9 | 2884031.503 | |
| 5-Jun | 17:00:00 | 62.8 | 47.7 | 81 | 71.9 | 66.7 | 58 | 51.4 | 1905460.718 | |
| 5-Jun | 18:00:00 | 62.3 | 47.2 | 84.5 | 72.2 | 65.2 | 55.1 | 50.4 | 1698243.652 | |
| 5-Jun | 19:00:00 | 62 | 47.2 | 86.5 | 71.9 | 64.8 | 54.2 | 49.4 | 1584893.192 | |
| 5-Jun | 20:00:00 | 60.6 | 47.2 | 76.4 | 70.2 | 64 | 56 | 49.6 | 1148153.621 | |
| 5-Jun | 21:00:00 | 62.5 | 45.1 | 78 | 69.6 | 65.5 | 61.2 | 48.8 | 1778279.41 | |
| 5-Jun | 22:00:00 | 58.7 | 43.8 | 76.4 | 68.7 | 61.6 | 55.6 | 45.7 | 7413102.413 | |
| 5-Jun | 23:00:00 | 55.5 | 42.4 | 74.6 | 66.7 | 58.4 | 46.4 | 43.7 | 3548133.892 | |
| 6-Jun | 0:00:00 | 55.8 | 43.2 | 84 | 66 | 57.1 | 47.2 | 45.1 | 3801893.963 | |
| 6-Jun | 1:00:00 | 52.2 | 42.3 | 71 | 65.4 | 52.3 | 45.3 | 43.4 | 1659586.907 | |
| 6-Jun | 2:00:00 | 53.6 | 41.8 | 75.8 | 66.1 | 51.3 | 44.8 | 43.3 | 2290867.653 | |
| 6-Jun | 3:00:00 | 54.4 | 42.8 | 71.2 | 67.4 | 55.9 | 46 | 44 | 2754228.703 | |
| 6-Jun | 4:00:00 | 59.8 | 44.8 | 80.5 | 72.3 | 62 | 51 | 47.6 | 9549925.86 | |
| 6-Jun | 5:00:00 | 62 | 46.1 | 81.7 | 72.8 | 66 | 54.1 | 49.5 | 15848931.92 | |
| 6-Jun | 6:00:00 | 62 | 48.6 | 80.5 | 72.2 | 66 | 55.4 | 51.4 | 15848931.92 | |
| 6-Jun | 7:00:00 | 63.4 | 48.3 | 79.1 | 72.6 | 67.6 | 58.8 | 51 | 2187761.624 | |
| 6-Jun | 8:00:00 | 64.3 | 49.3 | 86.9 | 73.3 | 67.8 | 60 | 53.5 | 2691534.804 | |
| 6-Jun | 9:00:00 | 63.1 | 47 | 78.5 | 72.5 | 67.2 | 58.4 | 51.8 | 2041737.945 | |
| 6-Jun | 10:00:00 | 64.7 | 50.3 | 80.4 | 74.4 | 68.3 | 60.7 | 54.1 | 2951209.227 | |
| 6-Jun | 11:00:00 | 65 | 51.4 | 81.5 | 74.7 | 68.4 | 61.2 | 55.3 | 3162277.66 | |
| 6-Jun | 12:00:00 | 64.8 | 52.3 | 81.8 | 74.1 | 68.4 | 61 | 55.2 | 3019951.72 | |
| 6-Jun | 13:00:00 | 67.3 | 51.9 | 94.3 | 76.8 | 68.2 | 61.3 | 55.4 | 5370317.964 | |

LT-5 Corner of Wall Rd and 11th St.

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 5 | Ldn of Jun 4-5 | Ldn of Jun 5-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Jun | 12:13:00 | 68.5 | 49.5 | 86.5 | 78 | 71 | 66 | 59.5 | | | | |
| 4-Jun | 13:00:00 | 67 | 50 | 78 | 75.5 | 70.5 | 65.5 | 58.5 | 5011872.336 | 71.20770815 | 70.62376278 | 70.94983248 |
| 4-Jun | 14:00:00 | 68 | 48.5 | 88 | 76 | 70.5 | 66 | 58.5 | 6309573.445 | | | |
| 4-Jun | 15:00:00 | 68 | 49.5 | 87 | 76 | 71 | 66.5 | 60 | 6309573.445 | | | |
| 4-Jun | 16:00:00 | 68.5 | 50.5 | 89.5 | 77.5 | 70.5 | 66 | 59.5 | 7079457.844 | | | |
| 4-Jun | 17:00:00 | 67 | 52.5 | 84 | 74.5 | 70 | 66 | 59.5 | 5011872.336 | | | |
| 4-Jun | 18:00:00 | 67 | 50.5 | 79 | 73.5 | 70 | 65.5 | 58 | 5011872.336 | | | |
| 4-Jun | 19:00:00 | 66.5 | 50.5 | 77.5 | 74 | 70 | 65 | 58.5 | 4466835.922 | | | |
| 4-Jun | 20:00:00 | 66.5 | 48 | 86.5 | 75.5 | 69 | 63.5 | 54 | 4466835.922 | | | |
| 4-Jun | 21:00:00 | 64 | 44 | 81 | 72.5 | 68 | 62 | 51.5 | 2511886.432 | | | |
| 4-Jun | 22:00:00 | 62.5 | 44.5 | 78 | 71 | 66.5 | 59 | 48 | 17782794.1 | | | |
| 4-Jun | 23:00:00 | 60 | 43 | 76 | 70.5 | 64.5 | 51.5 | 44.5 | 10000000 | | | |
| 5-Jun | 0:00:00 | 59 | 43 | 74 | 70.5 | 64 | 49.5 | 45 | 7943282.347 | | | |
| 5-Jun | 1:00:00 | 57.5 | 41.5 | 79 | 69.5 | 61 | 48 | 45 | 5623413.252 | | | |
| 5-Jun | 2:00:00 | 57.5 | 41 | 77 | 71 | 60.5 | 45 | 42.5 | 5623413.252 | | | |
| 5-Jun | 3:00:00 | 56.5 | 40.5 | 74.5 | 68.5 | 61 | 44 | 42.5 | 4466835.922 | | | |
| 5-Jun | 4:00:00 | 63.5 | 41.5 | 82 | 73.5 | 68 | 56 | 45 | 22387211.39 | | | |
| 5-Jun | 5:00:00 | 68 | 46 | 86.5 | 76 | 71.5 | 65 | 52.5 | 63095734.45 | | | |
| 5-Jun | 6:00:00 | 67.5 | 45 | 81.5 | 75 | 71.5 | 65 | 52 | 56234132.52 | | | |
| 5-Jun | 7:00:00 | 68 | 47.5 | 79 | 75 | 71.5 | 66 | 55.5 | 6309573.445 | | | |
| 5-Jun | 8:00:00 | 67.5 | 50 | 80.5 | 75.5 | 71 | 66 | 57 | 5623413.252 | | | |
| 5-Jun | 9:00:00 | 68 | 49.5 | 86 | 77.5 | 71 | 66 | 58 | 6309573.445 | | | |
| 5-Jun | 10:00:00 | 66.5 | 49 | 81.5 | 75 | 70 | 65 | 57 | 4466835.922 | | | |
| 5-Jun | 11:00:00 | 68.5 | 49 | 92.5 | 76 | 70.5 | 66 | 59.5 | 7079457.844 | | | |
| 5-Jun | 12:00:00 | 69 | 48.5 | 92 | 77.5 | 71 | 66 | 59.5 | 7943282.347 | | | |
| 5-Jun | 13:00:00 | 71 | 51 | 96 | 81.5 | 71 | 66.5 | 60.5 | 12589254.12 | | | |
| 5-Jun | 14:00:00 | 69.5 | 50 | 95.5 | 77.5 | 70.5 | 66 | 59.5 | 8912509.381 | | | |
| 5-Jun | 15:00:00 | 68 | 51 | 81.5 | 76.5 | 71 | 67 | 60.5 | 6309573.445 | | | |
| 5-Jun | 16:00:00 | 67.5 | 50.5 | 80 | 75 | 70.5 | 66.5 | 60.5 | 5623413.252 | | | |
| 5-Jun | 17:00:00 | 68.5 | 51 | 87.5 | 77 | 70.5 | 66.5 | 59.5 | 7079457.844 | | | |
| 5-Jun | 18:00:00 | 67.5 | 52 | 88.5 | 75.5 | 70 | 65.5 | 59 | 5623413.252 | | | |
| 5-Jun | 19:00:00 | 67 | 50 | 83.5 | 75.5 | 70 | 65 | 57 | 5011872.336 | | | |
| 5-Jun | 20:00:00 | 66 | 48 | 81 | 73.5 | 69.5 | 64 | 55 | 3981071.706 | | | |
| 5-Jun | 21:00:00 | 64.5 | 48.5 | 81.5 | 73.5 | 68.5 | 62.5 | 53 | 2818382.931 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5-Jun | 22:00:00 | 66.5 | 44.5 | 94 | 75 | 67.5 | 58.5 | 49 | 44668359.22 |
| 5-Jun | 23:00:00 | 60.5 | 41 | 77 | 70.5 | 65 | 54.5 | 43.5 | 11220184.54 |
| 6-Jun | 0:00:00 | 57.5 | 39 | 74 | 68.5 | 63 | 46 | 41 | 5623413.252 |
| 6-Jun | 1:00:00 | 57 | 40 | 72.5 | 68.5 | 62 | 47 | 42.5 | 5011872.336 |
| 6-Jun | 2:00:00 | 56.5 | 39.5 | 74.5 | 69 | 61 | 46.5 | 41.5 | 4466835.922 |
| 6-Jun | 3:00:00 | 56.5 | 39.5 | 74.5 | 68 | 61 | 44 | 41 | 4466835.922 |
| 6-Jun | 4:00:00 | 63.5 | 41 | 79.5 | 73.5 | 68 | 56 | 44 | 22387211.39 |
| 6-Jun | 5:00:00 | 67 | 44 | 79 | 75.5 | 71 | 63.5 | 52.5 | 50118723.36 |
| 6-Jun | 6:00:00 | 68 | 45.5 | 80 | 76 | 72 | 65 | 51 | 63095734.45 |
| 6-Jun | 7:00:00 | 67.5 | 45.5 | 82.5 | 75 | 71 | 66 | 56 | 5623413.252 |
| 6-Jun | 8:00:00 | 67.5 | 46.5 | 81 | 75 | 71 | 66 | 55.5 | 5623413.252 |
| 6-Jun | 9:00:00 | 68 | 48 | 84 | 76 | 71 | 66 | 59 | 6309573.445 |
| 6-Jun | 10:00:00 | 67.5 | 50 | 80 | 75.5 | 70.5 | 66 | 59 | 5623413.252 |
| 6-Jun | 11:00:00 | 68 | 51.5 | 83 | 77 | 71 | 66 | 59.5 | 6309573.445 |
| 6-Jun | 12:00:00 | 68 | 49.5 | 85 | 76 | 71 | 66.5 | 60.5 | 6309573.445 |
| 6-Jun | 13:00:00 | 68 | 49 | 87 | 76.5 | 71 | 66 | 59.5 | 6309573.445 |

LT-6 On 6th Street at Railroad Junction

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 5 | Ldn of Jun 4-5 | Ldn of Jun 5-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Jun | 12:33:00 | 57 | 33 | 82 | 66.5 | 59 | 51.5 | 47 | | | | |
| 4-Jun | 13:00:00 | 75 | 43.5 | 101 | 88.5 | 73.5 | 56 | 48.5 | 31622776.6 | 72.25873977 | 66.7285162 | 72.02175717 |
| 4-Jun | 14:00:00 | 55 | 43 | 68 | 63.5 | 59 | 52 | 47 | 316227.766 | | | |
| 4-Jun | 15:00:00 | 75.5 | 45 | 98.5 | 90.5 | 75 | 55 | 48 | 35481338.92 | | | |
| 4-Jun | 16:00:00 | 55 | 45 | 70 | 63 | 58.5 | 52 | 48 | 316227.766 | | | |
| 4-Jun | 17:00:00 | 56 | 44.5 | 75 | 66 | 59 | 52.5 | 48.5 | 398107.1706 | | | |
| 4-Jun | 18:00:00 | 53 | 45 | 69 | 62.5 | 56.5 | 50 | 47 | 199526.2315 | | | |
| 4-Jun | 19:00:00 | 60.5 | 45.5 | 87.5 | 74.5 | 58.5 | 51 | 48.5 | 1122018.454 | | | |
| 4-Jun | 20:00:00 | 67.5 | 47 | 92.5 | 81 | 62 | 52 | 49 | 5623413.252 | | | |
| 4-Jun | 21:00:00 | 52 | 45 | 69 | 61 | 55 | 48.5 | 46.5 | 158489.3192 | | | |
| 4-Jun | 22:00:00 | 50.5 | 45 | 63 | 59.5 | 53.5 | 48.5 | 46.5 | 1122018.454 | | | |
| 4-Jun | 23:00:00 | 50 | 44 | 65.5 | 59.5 | 52 | 47.5 | 45.5 | 1000000 | | | |
| 5-Jun | 0:00:00 | 49.5 | 44 | 64 | 59 | 51.5 | 47.5 | 46 | 891250.9381 | | | |
| 5-Jun | 1:00:00 | 49.5 | 43 | 68 | 61.5 | 51 | 46 | 44.5 | 891250.9381 | | | |
| 5-Jun | 2:00:00 | 50.5 | 43 | 76.5 | 58.5 | 49.5 | 45.5 | 44.5 | 1122018.454 | | | |
| 5-Jun | 3:00:00 | 46.5 | 42 | 61 | 56.5 | 47.5 | 45 | 43.5 | 446683.5922 | | | |
| 5-Jun | 4:00:00 | 49 | 42 | 67 | 60 | 50.5 | 45 | 43 | 794328.2347 | | | |
| 5-Jun | 5:00:00 | 51.5 | 44 | 68 | 61.5 | 55 | 48 | 45 | 1412537.545 | | | |
| 5-Jun | 6:00:00 | 54.5 | 44.5 | 70 | 65 | 58.5 | 50.5 | 46.5 | 2818382.931 | | | |
| 5-Jun | 7:00:00 | 56 | 45 | 66.5 | 64 | 60 | 53.5 | 49.5 | 398107.1706 | | | |
| 5-Jun | 8:00:00 | 72.5 | 42.5 | 103.5 | 85 | 61.5 | 53.5 | 48.5 | 17782794.1 | | | |
| 5-Jun | 9:00:00 | 67.5 | 43 | 92 | 82.5 | 68.5 | 52 | 47 | 5623413.252 | | | |
| 5-Jun | 10:00:00 | 54.5 | 44 | 79 | 65.5 | 57.5 | 50 | 46.5 | 281838.2931 | | | |
| 5-Jun | 11:00:00 | 55.5 | 45 | 74 | 65 | 59.5 | 51 | 47 | 354813.3892 | | | |
| 5-Jun | 12:00:00 | 64.5 | 43 | 96.5 | 71 | 59 | 50.5 | 46.5 | 2818382.931 | | | |
| 5-Jun | 13:00:00 | 54.5 | 44 | 69.5 | 64.5 | 59 | 50.5 | 46.5 | 281838.2931 | | | |
| 5-Jun | 14:00:00 | 56.5 | 44.5 | 75 | 68 | 59 | 51.5 | 47 | 446683.5922 | | | |
| 5-Jun | 15:00:00 | 85.5 | 46 | 109.5 | 99.5 | 72.5 | 56 | 49.5 | 354813389.2 | | | |
| 5-Jun | 16:00:00 | 59.5 | 45.5 | 87 | 71.5 | 59.5 | 53 | 49 | 891250.9381 | | | |
| 5-Jun | 17:00:00 | 58 | 45 | 81.5 | 68.5 | 58 | 52.5 | 48.5 | 630957.3445 | | | |
| 5-Jun | 18:00:00 | 67.5 | 44.5 | 91 | 81 | 64.5 | 53 | 48.5 | 5623413.252 | | | |
| 5-Jun | 19:00:00 | 63 | 46.5 | 93.5 | 68.5 | 59.5 | 53.5 | 49.5 | 1995262.315 | | | |
| 5-Jun | 20:00:00 | 54.5 | 46 | 73 | 63.5 | 58.5 | 51 | 48.5 | 281838.2931 | | | |
| 5-Jun | 21:00:00 | 53.5 | 45 | 68 | 62.5 | 57.5 | 50 | 47 | 223872.1139 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5-Jun | 22:00:00 | 52.5 | 43 | 70 | 63.5 | 56 | 48 | 45 | 1778279.41 |
| 5-Jun | 23:00:00 | 50.5 | 40.5 | 68 | 60.5 | 55 | 45 | 42 | 1122018.454 |
| 6-Jun | 0:00:00 | 47 | 37.5 | 63 | 59 | 49.5 | 42 | 39 | 501187.2336 |
| 6-Jun | 1:00:00 | 47 | 38 | 65 | 59.5 | 49 | 42 | 39.5 | 501187.2336 |
| 6-Jun | 2:00:00 | 48 | 38 | 70.5 | 60.5 | 49.5 | 42 | 39.5 | 630957.3445 |
| 6-Jun | 3:00:00 | 45 | 39 | 61 | 57 | 47 | 42 | 40 | 316227.766 |
| 6-Jun | 4:00:00 | 49.5 | 41 | 70.5 | 60 | 52.5 | 45.5 | 43 | 891250.9381 |
| 6-Jun | 5:00:00 | 53 | 42.5 | 68 | 63 | 57 | 49 | 45 | 1995262.315 |
| 6-Jun | 6:00:00 | 56 | 45 | 77 | 66 | 59.5 | 52 | 47.5 | 3981071.706 |
| 6-Jun | 7:00:00 | 57.5 | 43.5 | 75.5 | 66.5 | 61 | 53 | 48.5 | 562341.3252 |
| 6-Jun | 8:00:00 | 56.5 | 44 | 68.5 | 64.5 | 60 | 53 | 48.5 | 446683.5922 |
| 6-Jun | 9:00:00 | 56.5 | 45 | 74 | 65.5 | 60 | 53 | 49 | 446683.5922 |
| 6-Jun | 10:00:00 | 60.5 | 46 | 91 | 67 | 60 | 53 | 49 | 1122018.454 |
| 6-Jun | 11:00:00 | 57.5 | 48 | 73.5 | 66.5 | 60.5 | 54 | 50 | 562341.3252 |
| 6-Jun | 12:00:00 | 63.5 | 47.5 | 82 | 78.5 | 62.5 | 54.5 | 50 | 2238721.139 |
| 6-Jun | 13:00:00 | 67.5 | 46.5 | 88.5 | 75.5 | 73 | 56.5 | 49.5 | 5623413.252 |
| 6-Jun | 14:00:00 | 71.5 | 70 | 82 | 76 | 71.5 | 71 | 71 | 14125375.45 |

LT-7 Grant Line Rd

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 5 | Ldn of Jun 4-5 | Ldn of Jun 5-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Jun | 15:50:00 | 71 | 57.5 | 79.5 | 77 | 74.5 | 69.5 | 61.5 | | | | |
| 4-Jun | 16:00:00 | 72.5 | 56 | 84.5 | 80.5 | 76 | 70.5 | 62 | 17782794.1 | 74.85409284 | 74.77945304 | 75.46057174 |
| 4-Jun | 17:00:00 | 72.5 | 57 | 98 | 80 | 75.5 | 70 | 62 | 17782794.1 | | | |
| 4-Jun | 18:00:00 | 71.5 | 56 | 85.5 | 80 | 75 | 69 | 61.5 | 14125375.45 | | | |
| 4-Jun | 19:00:00 | 70 | 56 | 87 | 78.5 | 74 | 67 | 60.5 | 10000000 | | | |
| 4-Jun | 20:00:00 | 69.5 | 55 | 86 | 77.5 | 73.5 | 66 | 60 | 8912509.381 | | | |
| 4-Jun | 21:00:00 | 68.5 | 55.5 | 85.5 | 77.5 | 72.5 | 64.5 | 59.5 | 7079457.844 | | | |
| 4-Jun | 22:00:00 | 67 | 55.5 | 85.5 | 76 | 71.5 | 63 | 59.5 | 50118723.36 | | | |
| 4-Jun | 23:00:00 | 65.5 | 52 | 83.5 | 76.5 | 69 | 61 | 58 | 35481338.92 | | | |
| 5-Jun | 0:00:00 | 62.5 | 49.5 | 80 | 74.5 | 65.5 | 53.5 | 51.5 | 17782794.1 | | | |
| 5-Jun | 1:00:00 | 60.5 | 47.5 | 79.5 | 74 | 62.5 | 52.5 | 49.5 | 11220184.54 | | | |
| 5-Jun | 2:00:00 | 59 | 46 | 79 | 72.5 | 60 | 49.5 | 47.5 | 7943282.347 | | | |
| 5-Jun | 3:00:00 | 60 | 45.5 | 80 | 74 | 62 | 49.5 | 47.5 | 10000000 | | | |
| 5-Jun | 4:00:00 | 67 | 46 | 83.5 | 78.5 | 71.5 | 57 | 49 | 50118723.36 | | | |
| 5-Jun | 5:00:00 | 71.5 | 50.5 | 85 | 80 | 76.5 | 66 | 55.5 | 141253754.5 | | | |
| 5-Jun | 6:00:00 | 73 | 52 | 91.5 | 81.5 | 77 | 69.5 | 58 | 199526231.5 | | | |
| 5-Jun | 7:00:00 | 72.5 | 52 | 86.5 | 80.5 | 76.5 | 70.5 | 60 | 17782794.1 | | | |
| 5-Jun | 8:00:00 | 71.5 | 53 | 87.5 | 81 | 75.5 | 68 | 59.5 | 14125375.45 | | | |
| 5-Jun | 9:00:00 | 71 | 53.5 | 84.5 | 80 | 75 | 67.5 | 58 | 12589254.12 | | | |
| 5-Jun | 10:00:00 | 70 | 50.5 | 84 | 79.5 | 74 | 66.5 | 57.5 | 10000000 | | | |
| 5-Jun | 11:00:00 | 71 | 54.5 | 85 | 79.5 | 75 | 68.5 | 60 | 12589254.12 | | | |
| 5-Jun | 12:00:00 | 71 | 55 | 84 | 79 | 75 | 68.5 | 60 | 12589254.12 | | | |
| 5-Jun | 13:00:00 | 71 | 54 | 89 | 79.5 | 75 | 68 | 59 | 12589254.12 | | | |
| 5-Jun | 14:00:00 | 71.5 | 52 | 86.5 | 80 | 75 | 69 | 59.5 | 14125375.45 | | | |
| 5-Jun | 15:00:00 | 72 | 54 | 89 | 81 | 75 | 70 | 61.5 | 15848931.92 | | | |
| 5-Jun | 16:00:00 | 72.5 | 54.5 | 95 | 80 | 75.5 | 70.5 | 61.5 | 17782794.1 | | | |
| 5-Jun | 17:00:00 | 72 | 56 | 91 | 79.5 | 75.5 | 70 | 61.5 | 15848931.92 | | | |
| 5-Jun | 18:00:00 | 71.5 | 55 | 86 | 79 | 75 | 69 | 61 | 14125375.45 | | | |
| 5-Jun | 19:00:00 | 71.5 | 54.5 | 92 | 81 | 74.5 | 67.5 | 60 | 14125375.45 | | | |
| 5-Jun | 20:00:00 | 69.5 | 54.5 | 84.5 | 77.5 | 73 | 66.5 | 60.5 | 8912509.381 | | | |
| 5-Jun | 21:00:00 | 68.5 | 53.5 | 86.5 | 77.5 | 72.5 | 64.5 | 59.5 | 7079457.844 | | | |
| 5-Jun | 22:00:00 | 68.5 | 53.5 | 91.5 | 77.5 | 71 | 62.5 | 58.5 | 70794578.44 | | | |
| 5-Jun | 23:00:00 | 64 | 47.5 | 83.5 | 75.5 | 68.5 | 55.5 | 49.5 | 25118864.32 | | | |
| 6-Jun | 0:00:00 | 64 | 53 | 80.5 | 74.5 | 66.5 | 60.5 | 57.5 | 25118864.32 | | | |
| 6-Jun | 1:00:00 | 63.5 | 53.5 | 81.5 | 74.5 | 65.5 | 59.5 | 57 | 22387211.39 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6-Jun | 2:00:00 | 68 | 51.5 | 101 | 74.5 | 62.5 | 58.5 | 54.5 | 63095734.45 |
| 6-Jun | 3:00:00 | 63 | 51.5 | 84 | 75.5 | 64.5 | 58.5 | 54.5 | 19952623.15 |
| 6-Jun | 4:00:00 | 67 | 49 | 89 | 78.5 | 71 | 60 | 56.5 | 50118723.36 |
| 6-Jun | 5:00:00 | 71.5 | 51.5 | 87.5 | 80 | 76.5 | 66 | 58.5 | 141253754.5 |
| 6-Jun | 6:00:00 | 73 | 54.5 | 87 | 81.5 | 77.5 | 69 | 60.5 | 199526231.5 |
| 6-Jun | 7:00:00 | 72 | 50.5 | 91.5 | 80 | 76 | 69 | 59 | 15848931.92 |
| 6-Jun | 8:00:00 | 74 | 53 | 103.5 | 82.5 | 75.5 | 68.5 | 60.5 | 25118864.32 |
| 6-Jun | 9:00:00 | 71 | 55.5 | 86 | 80 | 74.5 | 67 | 60 | 12589254.12 |
| 6-Jun | 10:00:00 | 71 | 55.5 | 86.5 | 80.5 | 74.5 | 67.5 | 60.5 | 12589254.12 |
| 6-Jun | 11:00:00 | 73 | 56.5 | 94.5 | 81.5 | 75.5 | 69 | 61 | 19952623.15 |
| 6-Jun | 12:00:00 | 71 | 55 | 85 | 79.5 | 75 | 68.5 | 61 | 12589254.12 |
| 6-Jun | 13:00:00 | 71.5 | 55.5 | 90 | 79 | 75 | 68.5 | 60.5 | 14125375.45 |
| 6-Jun | 14:00:00 | 72 | 54 | 88.5 | 80.5 | 75.5 | 70 | 60.5 | 15848931.92 |
| 6-Jun | 15:00:00 | 73 | 55.5 | 85 | 80 | 76 | 71.5 | 63 | 19952623.15 |
| 6-Jun | 16:00:00 | 73 | 58 | 85 | 81 | 76 | 72 | 64 | 19952623.15 |

LT-8 Dr. Powers Park on Tracy Blvd.

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 7 | Ldn of Jun 6-7 | Ldn of Jun 7-8 | Ldn of Jun 8-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6-Jun | 15:00:00 | 68.5 | 53 | 80 | 75 | 71.5 | 67 | 62 | 7079457.844 | 70.17081876 | 70.54891498 | 69.83851704 | 69.44656315 |
| 6-Jun | 16:00:00 | 74.5 | 50.5 | 103.5 | 77 | 71.5 | 65.5 | 60.5 | 28183829.31 | | | | |
| 6-Jun | 17:00:00 | 68.5 | 52 | 83 | 75 | 72 | 66.5 | 59.5 | 7079457.844 | | | | |
| 6-Jun | 18:00:00 | 68 | 51.5 | 82.5 | 74.5 | 71.5 | 66 | 58.5 | 6309573.445 | | | | |
| 6-Jun | 19:00:00 | 68 | 51 | 79 | 75 | 71.5 | 66 | 58.5 | 6309573.445 | | | | |
| 6-Jun | 20:00:00 | 68 | 51 | 79.5 | 74.5 | 71.5 | 66 | 58 | 6309573.445 | | | | |
| 6-Jun | 21:00:00 | 67.5 | 49.5 | 84 | 75.5 | 71 | 65 | 56 | 5623413.252 | | | | |
| 6-Jun | 22:00:00 | 66.5 | 49 | 83 | 74 | 70.5 | 63.5 | 53.5 | 44668359.22 | | | | |
| 6-Jun | 23:00:00 | 64.5 | 45 | 77.5 | 74.5 | 68.5 | 61 | 51.5 | 28183829.31 | | | | |
| 7-Jun | 0:00:00 | 63 | 39.5 | 81 | 73 | 67 | 57 | 48.5 | 19952623.15 | | | | |
| 7-Jun | 1:00:00 | 60 | 40 | 76.5 | 71 | 65 | 52.5 | 45 | 10000000 | | | | |
| 7-Jun | 2:00:00 | 59.5 | 40 | 77 | 70 | 64 | 51.5 | 43.5 | 8912509.381 | | | | |
| 7-Jun | 3:00:00 | 56 | 38 | 71.5 | 68 | 59.5 | 48 | 41 | 3981071.706 | | | | |
| 7-Jun | 4:00:00 | 57.5 | 36.5 | 75 | 68.5 | 61.5 | 49 | 39 | 5623413.252 | | | | |
| 7-Jun | 5:00:00 | 60.5 | 41 | 73 | 71 | 65 | 54.5 | 47.5 | 11220184.54 | | | | |
| 7-Jun | 6:00:00 | 63 | 45.5 | 77 | 73.5 | 67.5 | 58 | 49.5 | 19952623.15 | | | | |
| 7-Jun | 7:00:00 | 66 | 47 | 78.5 | 74 | 70 | 63 | 53.5 | 3981071.706 | | | | |
| 7-Jun | 8:00:00 | 67.5 | 51 | 78 | 75.5 | 71.5 | 65.5 | 57 | 5623413.252 | | | | |
| 7-Jun | 9:00:00 | 68.5 | 51 | 83 | 77 | 72 | 66.5 | 57.5 | 7079457.844 | | | | |
| 7-Jun | 10:00:00 | 68.5 | 53 | 79 | 75 | 72 | 66.5 | 60 | 7079457.844 | | | | |
| 7-Jun | 11:00:00 | 68.5 | 53.5 | 79.5 | 75 | 72 | 66.5 | 60 | 7079457.844 | | | | |
| 7-Jun | 12:00:00 | 68.5 | 51.5 | 84 | 76.5 | 72 | 66.5 | 59.5 | 7079457.844 | | | | |
| 7-Jun | 13:00:00 | 69 | 50.5 | 92 | 76.5 | 71.5 | 66 | 58 | 7943282.347 | | | | |
| 7-Jun | 14:00:00 | 68.5 | 52 | 91.5 | 76.5 | 71.5 | 65.5 | 58.5 | 7079457.844 | | | | |
| 7-Jun | 15:00:00 | 67.5 | 52 | 84 | 75.5 | 71.5 | 65.5 | 58.5 | 5623413.252 | | | | |
| 7-Jun | 16:00:00 | 67 | 49 | 78.5 | 74 | 70.5 | 65 | 56.5 | 5011872.336 | | | | |
| 7-Jun | 17:00:00 | 70 | 50.5 | 92.5 | 80.5 | 71.5 | 66 | 58.5 | 10000000 | | | | |
| 7-Jun | 18:00:00 | 67 | 50.5 | 82.5 | 75 | 70.5 | 65 | 57.5 | 5011872.336 | | | | |
| 7-Jun | 19:00:00 | 67 | 51 | 84 | 76 | 71 | 64.5 | 56.5 | 5011872.336 | | | | |
| 7-Jun | 20:00:00 | 67.5 | 52 | 87.5 | 75.5 | 71 | 64.5 | 57.5 | 5623413.252 | | | | |
| 7-Jun | 21:00:00 | 66.5 | 49 | 78 | 74.5 | 70.5 | 63.5 | 55.5 | 4466835.922 | | | | |
| 7-Jun | 22:00:00 | 66.5 | 48.5 | 85.5 | 76 | 70 | 63 | 54 | 44668359.22 | | | | |
| 7-Jun | 23:00:00 | 65 | 44 | 84 | 75 | 69 | 61 | 50.5 | 31622776.6 | | | | |
| 8-Jun | 0:00:00 | 63.5 | 43.5 | 83.5 | 74.5 | 67.5 | 57.5 | 48.5 | 22387211.39 | | | | |
| 8-Jun | 1:00:00 | 62 | 39 | 84.5 | 72 | 66 | 54 | 45.5 | 15848931.92 | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8-Jun | 2:00:00 | 58.5 | 39 | 72.5 | 69 | 64 | 50 | 42.5 | 7079457.844 |
| 8-Jun | 3:00:00 | 58 | 36 | 75.5 | 71 | 62.5 | 48 | 39.5 | 6309573.445 |
| 8-Jun | 4:00:00 | 56 | 36.5 | 75.5 | 68 | 60 | 48.5 | 40.5 | 3981071.706 |
| 8-Jun | 5:00:00 | 59 | 40 | 71.5 | 69.5 | 64 | 52 | 44.5 | 7943282.347 |
| 8-Jun | 6:00:00 | 61 | 41 | 74 | 70.5 | 66 | 54.5 | 45 | 12589254.12 |
| 8-Jun | 7:00:00 | 63 | 40.5 | 77.5 | 71.5 | 67 | 59 | 48 | 1995262.315 |
| 8-Jun | 8:00:00 | 65.5 | 43 | 85 | 73.5 | 69.5 | 62 | 50.5 | 3548133.892 |
| 8-Jun | 9:00:00 | 67 | 47.5 | 87 | 75 | 70.5 | 64.5 | 54 | 5011872.336 |
| 8-Jun | 10:00:00 | 67.5 | 48.5 | 84.5 | 75.5 | 71 | 65 | 56.5 | 5623413.252 |
| 8-Jun | 11:00:00 | 67.5 | 49 | 82 | 74.5 | 71 | 65 | 56.5 | 5623413.252 |
| 8-Jun | 12:00:00 | 67.5 | 51.5 | 85 | 75.5 | 71 | 65 | 58.5 | 5623413.252 |
| 8-Jun | 13:00:00 | 67 | 50 | 86 | 75 | 69.5 | 66 | 59.5 | 5011872.336 |
| 8-Jun | 14:00:00 | 67.5 | 51.5 | 85.5 | 76 | 70 | 66 | 60 | 5623413.252 |
| 8-Jun | 15:00:00 | 67.5 | 50.5 | 85.5 | 76.5 | 69.5 | 65.5 | 59.5 | 5623413.252 |
| 8-Jun | 16:00:00 | 66.5 | 51.5 | 77.5 | 74 | 69.5 | 65.5 | 59 | 4466835.922 |
| 8-Jun | 17:00:00 | 66.5 | 50.5 | 83 | 74 | 69.5 | 65.5 | 59 | 4466835.922 |
| 8-Jun | 18:00:00 | 67.5 | 51.5 | 89 | 77 | 70 | 65.5 | 58.5 | 5623413.252 |
| 8-Jun | 19:00:00 | 67 | 50 | 82 | 75 | 69.5 | 65.5 | 59 | 5011872.336 |
| 8-Jun | 20:00:00 | 68 | 50.5 | 95 | 75.5 | 69.5 | 65 | 58 | 6309573.445 |
| 8-Jun | 21:00:00 | 66 | 49 | 87 | 75 | 69 | 64 | 55.5 | 3981071.706 |
| 8-Jun | 22:00:00 | 64 | 49.5 | 81.5 | 74 | 67.5 | 61.5 | 52.5 | 25118864.32 |
| 8-Jun | 23:00:00 | 62.5 | 45.5 | 85.5 | 72.5 | 66 | 58.5 | 50.5 | 17782794.1 |
| 9-Jun | 0:00:00 | 59.5 | 41 | 75.5 | 70 | 64.5 | 51.5 | 45.5 | 8912509.381 |
| 9-Jun | 1:00:00 | 57 | 38 | 75.5 | 68.5 | 61 | 48.5 | 41.5 | 5011872.336 |
| 9-Jun | 2:00:00 | 57 | 39 | 78 | 70 | 60 | 48.5 | 41.5 | 5011872.336 |
| 9-Jun | 3:00:00 | 55 | 39.5 | 71 | 66.5 | 59.5 | 48.5 | 42 | 3162277.66 |
| 9-Jun | 4:00:00 | 59 | 42.5 | 75.5 | 69.5 | 63.5 | 52 | 45 | 7943282.347 |
| 9-Jun | 5:00:00 | 63.5 | 45 | 80 | 74 | 67.5 | 57.5 | 49.5 | 22387211.39 |
| 9-Jun | 6:00:00 | 65.5 | 45 | 77.5 | 75.5 | 69.5 | 62.5 | 52.5 | 35481338.92 |
| 9-Jun | 7:00:00 | 67.5 | 47 | 79 | 76 | 71 | 65.5 | 58 | 5623413.252 |
| 9-Jun | 8:00:00 | 69 | 51 | 81 | 77 | 72.5 | 67 | 60 | 7943282.347 |
| 9-Jun | 9:00:00 | 68.5 | 47 | 83.5 | 76.5 | 72 | 66.5 | 59 | 7079457.844 |
| 9-Jun | 10:00:00 | 68 | 51 | 78.5 | 75.5 | 71.5 | 66 | 59 | 6309573.445 |
| 9-Jun | 11:00:00 | 68 | 52 | 77.5 | 75 | 72 | 66.5 | 60 | 6309573.445 |
| 9-Jun | 12:00:00 | 68.5 | 51.5 | 88 | 75.5 | 72 | 66.5 | 60 | 7079457.844 |
| 9-Jun | 13:00:00 | 66.5 | 53 | 75.5 | 73.5 | 70 | 65 | 57 | 4466835.922 |
| 9-Jun | 14:00:00 | 52.5 | 51.5 | 78 | 52.5 | 51.5 | 51.5 | 51.5 | 177827.941 |

LT-9 Corral Hoillow Rd.

| Date | Time | Leq | Lmin | Lmax | L01 | L10 | L50 | L90 | Energy + Penalty | Ldn of Jun 7 | Ldn of Jun 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6-Jun | 15:32:00 | 68 | 50 | 89 | 75.5 | 71 | 66 | 59.5 | | | |
| 6-Jun | 16:00:00 | 67.5 | 50.5 | 79 | 74.5 | 70.5 | 66.5 | 59 | 5623413.252 | 69.34436708 | 67.70955103 |
| 6-Jun | 17:00:00 | 68 | 50 | 79.5 | 74.5 | 71 | 66.5 | 58.5 | 6309573.445 | | |
| 6-Jun | 18:00:00 | 68.5 | 51 | 80 | 74 | 71.5 | 67.5 | 60.5 | 7079457.844 | | |
| 6-Jun | 19:00:00 | 68 | 52 | 83 | 75 | 71 | 67 | 59.5 | 6309573.445 | | |
| 6-Jun | 20:00:00 | 67.5 | 52.5 | 81.5 | 74.5 | 71 | 66.5 | 59 | 5623413.252 | | |
| 6-Jun | 21:00:00 | 66.5 | 51 | 82.5 | 73.5 | 70 | 65 | 57.5 | 4466835.922 | | |
| 6-Jun | 22:00:00 | 65.5 | 52.5 | 86.5 | 73.5 | 69 | 62 | 56.5 | 35481338.92 | | |
| 6-Jun | 23:00:00 | 63 | 50 | 76.5 | 72 | 67.5 | 59 | 53 | 19952623.15 | | |
| 7-Jun | 0:00:00 | 61.5 | 43 | 75.5 | 71.5 | 66.5 | 54.5 | 48 | 14125375.45 | | |
| 7-Jun | 1:00:00 | 57.5 | 42 | 74.5 | 69 | 59.5 | 50 | 45 | 5623413.252 | | |
| 7-Jun | 2:00:00 | 56 | 39.5 | 80 | 68.5 | 56.5 | 47 | 42.5 | 3981071.706 | | |
| 7-Jun | 3:00:00 | 54.5 | 38.5 | 75.5 | 68.5 | 54.5 | 44.5 | 41.5 | 2818382.931 | | |
| 7-Jun | 4:00:00 | 54 | 38 | 72.5 | 68 | 55.5 | 47 | 41.5 | 2511886.432 | | |
| 7-Jun | 5:00:00 | 58.5 | 39.5 | 77 | 71 | 60.5 | 50.5 | 46 | 7079457.844 | | |
| 7-Jun | 6:00:00 | 65 | 48 | 92.5 | 74 | 66 | 57 | 51.5 | 31622776.6 | | |
| 7-Jun | 7:00:00 | 64.5 | 49.5 | 83.5 | 74.5 | 68.5 | 60.5 | 54.5 | 2818382.931 | | |
| 7-Jun | 8:00:00 | 65 | 50.5 | 84 | 73.5 | 69 | 60.5 | 54.5 | 3162277.66 | | |
| 7-Jun | 9:00:00 | 66 | 51 | 81 | 74.5 | 70 | 63.5 | 56 | 3981071.706 | | |
| 7-Jun | 10:00:00 | 67 | 52 | 81 | 74 | 70.5 | 65 | 57.5 | 5011872.336 | | |
| 7-Jun | 11:00:00 | 67 | 51.5 | 78.5 | 73.5 | 70.5 | 65.5 | 57.5 | 5011872.336 | | |
| 7-Jun | 12:00:00 | 69.5 | 54 | 82 | 77 | 73 | 67.5 | 59.5 | 8912509.381 | | |
| 7-Jun | 13:00:00 | 68.5 | 53 | 84 | 77 | 72 | 67 | 60 | 7079457.844 | | |
| 7-Jun | 14:00:00 | 67.5 | 52.5 | 84 | 74 | 71 | 66.5 | 59.5 | 5623413.252 | | |
| 7-Jun | 15:00:00 | 68 | 52 | 79.5 | 74 | 71 | 66.5 | 59.5 | 6309573.445 | | |
| 7-Jun | 16:00:00 | 67.5 | 51.5 | 78.5 | 73 | 70.5 | 66.5 | 60 | 5623413.252 | | |
| 7-Jun | 17:00:00 | 67.5 | 53 | 79.5 | 74 | 70.5 | 66.5 | 60 | 5623413.252 | | |
| 7-Jun | 18:00:00 | 68 | 52 | 79.5 | 75 | 71 | 67 | 60.5 | 6309573.445 | | |
| 7-Jun | 19:00:00 | 67.5 | 53.5 | 84.5 | 75.5 | 70.5 | 66 | 59 | 5623413.252 | | |
| 7-Jun | 20:00:00 | 68 | 54.5 | 83 | 74.5 | 71 | 67 | 60 | 6309573.445 | | |
| 7-Jun | 21:00:00 | 66.5 | 54.5 | 78 | 73 | 70.5 | 65 | 59 | 4466835.922 | | |
| 7-Jun | 22:00:00 | 65 | 53 | 76.5 | 73 | 69 | 61.5 | 57 | 31622776.6 | | |
| 7-Jun | 23:00:00 | 64 | 47 | 78 | 72.5 | 68.5 | 59.5 | 50 | 25118864.32 | | |
| 8-Jun | 0:00:00 | 64 | 46.5 | 91.5 | 73.5 | 66.5 | 55 | 49 | 25118864.32 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8-Jun | 1:00:00 | 58.5 | 43.5 | 77.5 | 70 | 62 | 51.5 | 46 | 7079457.844 |
| 8-Jun | 2:00:00 | 56 | 42 | 77.5 | 69 | 56.5 | 47.5 | 44.5 | 3981071.706 |
| 8-Jun | 3:00:00 | 54 | 41 | 71.5 | 67.5 | 54.5 | 46 | 43.5 | 2511886.432 |
| 8-Jun | 4:00:00 | 51.5 | 39.5 | 77 | 65 | 52 | 44 | 42 | 1412537.545 |
| 8-Jun | 5:00:00 | 55.5 | 40 | 74 | 69 | 57.5 | 47 | 43.5 | 3548133.892 |
| 8-Jun | 6:00:00 | 59.5 | 43 | 80.5 | 71.5 | 62 | 49.5 | 46 | 8912509.381 |
| 8-Jun | 7:00:00 | 61 | 42 | 79 | 71.5 | 65.5 | 54 | 47.5 | 1258925.412 |
| 8-Jun | 8:00:00 | 62.5 | 41.5 | 79.5 | 72 | 67 | 57.5 | 48.5 | 1778279.41 |
| 8-Jun | 9:00:00 | 64.5 | 44.5 | 78 | 73 | 69 | 60.5 | 52.5 | 2818382.931 |
| 8-Jun | 10:00:00 | 66 | 49 | 82 | 73 | 70 | 63 | 56 | 3981071.706 |
| 8-Jun | 11:00:00 | 66.5 | 49.5 | 82 | 73 | 70 | 64.5 | 57.5 | 4466835.922 |
| 8-Jun | 12:00:00 | 67 | 49.5 | 82 | 74 | 70.5 | 65.5 | 58 | 5011872.336 |
| 8-Jun | 13:00:00 | 67 | 50.5 | 80 | 73 | 70.5 | 66 | 59 | 5011872.336 |
| 8-Jun | 14:00:00 | 67.5 | 51 | 83.5 | 74 | 70.5 | 66.5 | 59.5 | 5623413.252 |
| 8-Jun | 15:00:00 | 67.5 | 50 | 80 | 74 | 70.5 | 66.5 | 58.5 | 5623413.252 |
| 8-Jun | 16:00:00 | 68 | 52 | 87.5 | 74.5 | 71 | 67 | 60 | 6309573.445 |
| 8-Jun | 17:00:00 | 67.5 | 51 | 77.5 | 74 | 70.5 | 66 | 58.5 | 5623413.252 |
| 8-Jun | 18:00:00 | 67.5 | 52.5 | 79.5 | 74 | 70.5 | 66 | 59 | 5623413.252 |
| 8-Jun | 19:00:00 | 66.5 | 51.5 | 82.5 | 73.5 | 70.5 | 65 | 56.5 | 4466835.922 |
| 8-Jun | 20:00:00 | 65.5 | 52.5 | 78.5 | 74 | 69.5 | 62.5 | 56 | 3548133.892 |
| 8-Jun | 21:00:00 | 65 | 51 | 80 | 73.5 | 69 | 61 | 55 | 3162277.66 |
| 8-Jun | 22:00:00 | 62 | 49 | 79 | 71.5 | 67 | 56 | 52 | 15848931.92 |
| 8-Jun | 23:00:00 | 59.5 | 46.5 | 75.5 | 71 | 64 | 53 | 49.5 | 8912509.381 |
| 9-Jun | 0:00:00 | 57.5 | 45 | 78.5 | 70.5 | 59 | 50 | 47.5 | 5623413.252 |
| 9-Jun | 1:00:00 | 54.5 | 41 | 73 | 68 | 54.5 | 47.5 | 44 | 2818382.931 |
| 9-Jun | 2:00:00 | 53.5 | 42 | 76 | 67 | 52 | 47 | 45 | 2238721.139 |
| 9-Jun | 3:00:00 | 54.5 | 42 | 75 | 67.5 | 56 | 47.5 | 44.5 | 2818382.931 |
| 9-Jun | 4:00:00 | 59.5 | 45 | 81 | 71 | 62 | 51.5 | 47 | 8912509.381 |
| 9-Jun | 5:00:00 | 61.5 | 44.5 | 78.5 | 72 | 66.5 | 54.5 | 47.5 | 14125375.45 |
| 9-Jun | 6:00:00 | 65.5 | 46 | 82.5 | 75 | 70 | 59.5 | 50.5 | 35481338.92 |
| 9-Jun | 7:00:00 | 66.5 | 44 | 81 | 76 | 70 | 62.5 | 53 | 4466835.922 |
| 9-Jun | 8:00:00 | 72.5 | 47 | 101.5 | 78.5 | 71.5 | 66 | 56.5 | 17782794.1 |
| 9-Jun | 9:00:00 | 67 | 49 | 88 | 76 | 70.5 | 63 | 54 | 5011872.336 |
| 9-Jun | 10:00:00 | 67.5 | 51 | 82 | 76 | 71 | 65 | 56 | 5623413.252 |
| 9-Jun | 11:00:00 | 68.5 | 52.5 | 83.5 | 77 | 72 | 66.5 | 58.5 | 7079457.844 |
| 9-Jun | 12:00:00 | 67.5 | 51.5 | 85.5 | 76 | 71 | 65 | 56.5 | 5623413.252 |
| 9-Jun | 13:00:00 | 68.5 | 53.5 | 84 | 78 | 71 | 66.5 | 59.5 | 7079457.844 |

LT-10 W. Larch Rd.

| Date | Time | Leq | Lmin | Lmax | L( 1) | L(10) | L(50) | L(90) | Energy + Penalty | Ldn of Jun 7 | Ldn of Jun 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6-Jun | 15:50:01 | 71 | 47.4 | 90.7 | 81.6 | 75.1 | 61.6 | 52.7 | | 66.69958264 | 65.39744438 |
| 6-Jun | 16:00:00 | 69.5 | 48.1 | 85.5 | 79.6 | 74.3 | 61.8 | 53.6 | 8912509.381 | | |
| 6-Jun | 17:00:00 | 68.1 | 46.8 | 90.2 | 78.6 | 72.2 | 60.8 | 53.1 | 6456542.29 | | |
| 6-Jun | 18:00:00 | 66.6 | 48.9 | 82.5 | 77.4 | 70.9 | 59.7 | 53.4 | 4570881.896 | | |
| 6-Jun | 19:00:00 | 66.2 | 49.7 | 88.2 | 77.5 | 69.5 | 57.7 | 52.8 | 4168693.835 | | |
| 6-Jun | 20:00:00 | 64.8 | 51.3 | 84.4 | 76.6 | 67 | 58.1 | 53.7 | 3019951.72 | | |
| 6-Jun | 21:00:00 | 63.3 | 52.1 | 81.4 | 75.6 | 65.1 | 57.6 | 54.6 | 2137962.09 | | |
| 6-Jun | 22:00:00 | 63.1 | 51.9 | 80.3 | 74.5 | 66 | 58.4 | 54.4 | 20417379.45 | | |
| 6-Jun | 23:00:00 | 60.7 | 51.1 | 78.1 | 70.3 | 63.7 | 57.2 | 53.6 | 11748975.55 | | |
| 7-Jun | 0:00:00 | 56.9 | 45.8 | 80.8 | 67.3 | 57.9 | 52.1 | 48.3 | 4897788.194 | | |
| 7-Jun | 1:00:00 | 50.1 | 41.8 | 73.4 | 53.9 | 50.8 | 48.1 | 45.2 | 1023292.992 | | |
| 7-Jun | 2:00:00 | 53.8 | 43.3 | 79.5 | 59.2 | 52.6 | 48.9 | 46.5 | 2398832.919 | | |
| 7-Jun | 3:00:00 | 50 | 41 | 76.6 | 56.5 | 50.3 | 46.8 | 44.2 | 1000000 | | |
| 7-Jun | 4:00:00 | 54.6 | 42.1 | 80.2 | 65.5 | 52.7 | 47.9 | 44.7 | 2884031.503 | | |
| 7-Jun | 5:00:00 | 57.8 | 45.5 | 80.2 | 70.8 | 57.3 | 51.5 | 48.5 | 6025595.861 | | |
| 7-Jun | 6:00:00 | 62.5 | 48.4 | 86.3 | 75.1 | 63 | 54.6 | 50.8 | 17782794.1 | | |
| 7-Jun | 7:00:00 | 63.7 | 48.7 | 82.7 | 75.9 | 66 | 55.7 | 51.5 | 2344228.815 | | |
| 7-Jun | 8:00:00 | 64.6 | 47.8 | 83.4 | 76.7 | 67.6 | 54.4 | 50.2 | 2884031.503 | | |
| 7-Jun | 9:00:00 | 65.2 | 47.9 | 90.5 | 76.7 | 67.5 | 55.2 | 50.7 | 3311311.215 | | |
| 7-Jun | 10:00:00 | 65.7 | 47.2 | 87.5 | 77.3 | 68.2 | 56.2 | 50.5 | 3715352.291 | | |
| 7-Jun | 11:00:00 | 64.7 | 45.9 | 85.4 | 76.9 | 67.3 | 54.8 | 49.8 | 2951209.227 | | |
| 7-Jun | 12:00:00 | 65.5 | 45.7 | 91.2 | 77.3 | 66.8 | 54.5 | 49.5 | 3548133.892 | | |
| 7-Jun | 13:00:00 | 64.3 | 45.7 | 88.7 | 75.6 | 66.8 | 55 | 49.3 | 2691534.804 | | |
| 7-Jun | 14:00:00 | 66.4 | 45.9 | 92.7 | 77.4 | 68.8 | 57.3 | 50.6 | 4365158.322 | | |
| 7-Jun | 15:00:00 | 64.8 | 47.3 | 85.2 | 76.5 | 66.8 | 58.5 | 52.4 | 3019951.72 | | |
| 7-Jun | 16:00:00 | 65.1 | 47.2 | 86 | 76.7 | 66.9 | 58.7 | 52.1 | 3235936.569 | | |
| 7-Jun | 17:00:00 | 65.5 | 48.3 | 83.8 | 76.9 | 68.6 | 58.8 | 52.9 | 3548133.892 | | |
| 7-Jun | 18:00:00 | 64.9 | 47.5 | 83.3 | 76.4 | 68.1 | 57.4 | 51.9 | 3090295.433 | | |
| 7-Jun | 19:00:00 | 63.7 | 49.7 | 81.8 | 75.8 | 65.8 | 57.8 | 53.1 | 2344228.815 | | |
| 7-Jun | 20:00:00 | 64.3 | 51.6 | 85.1 | 75.5 | 66.6 | 58.8 | 54.5 | 2691534.804 | | |
| 7-Jun | 21:00:00 | 64.6 | 52.1 | 80.8 | 76 | 67.5 | 60.1 | 55.4 | 2884031.503 | | |
| 7-Jun | 22:00:00 | 63.7 | 50.9 | 84.1 | 74 | 66.2 | 59 | 54.8 | 23442288.15 | | |
| 7-Jun | 23:00:00 | 57.9 | 47.6 | 79.5 | 70.1 | 57.5 | 53 | 50.4 | 6165950.019 | | |
| 8-Jun | 0:00:00 | 58 | 46.1 | 84 | 68.1 | 55 | 51.2 | 49.1 | 6309573.445 | | |

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|---|---|---|---|---|---|---|---|---|---|
| 8-Jun | 1:00:00 | 59.1 | 45.4 | 84.7 | 71.3 | 55.5 | 50.6 | 47.9 | 8128305.162 |
| 8-Jun | 2:00:00 | 53.4 | 44.5 | 75.3 | 61.3 | 55.3 | 50.4 | 47.5 | 2187761.624 |
| 8-Jun | 3:00:00 | 56.3 | 43 | 79.2 | 65.5 | 57.7 | 50.4 | 46.6 | 4265795.188 |
| 8-Jun | 4:00:00 | 52.8 | 42 | 78.6 | 59.6 | 48.8 | 46.4 | 44.5 | 1905460.718 |
| 8-Jun | 5:00:00 | 57.1 | 41.6 | 81.6 | 70.8 | 52 | 48.1 | 45.2 | 5128613.84 |
| 8-Jun | 6:00:00 | 55.7 | 44.5 | 78.7 | 68 | 53.9 | 49.2 | 47.1 | 3715352.291 |
| 8-Jun | 7:00:00 | 59.1 | 45.1 | 81.6 | 73 | 57.7 | 50.9 | 47.6 | 812830.5162 |
| 8-Jun | 8:00:00 | 61.6 | 43.1 | 79.1 | 75.4 | 60.3 | 51.1 | 46.7 | 1445439.771 |
| 8-Jun | 9:00:00 | 63.3 | 45.4 | 85.6 | 75.9 | 63.6 | 54.5 | 48.9 | 2137962.09 |
| 8-Jun | 10:00:00 | 64.2 | 46 | 83.5 | 76.2 | 66.2 | 57.1 | 50.6 | 2630267.992 |
| 8-Jun | 11:00:00 | 65 | 45.2 | 82.6 | 76.6 | 68.9 | 56.8 | 50.7 | 3162277.66 |
| 8-Jun | 12:00:00 | 64.1 | 43.9 | 82.9 | 76.5 | 66.3 | 53.8 | 48.3 | 2570395.783 |
| 8-Jun | 13:00:00 | 63.6 | 44.3 | 81.5 | 75.7 | 66.3 | 55.2 | 49.3 | 2290867.653 |
| 8-Jun | 14:00:00 | 64.3 | 46.2 | 84.6 | 75.2 | 66.7 | 59 | 52.6 | 2691534.804 |
| 8-Jun | 15:00:00 | 65.3 | 44.8 | 83.1 | 76.8 | 68.3 | 58.6 | 51.2 | 3388441.561 |
| 8-Jun | 16:00:00 | 64.8 | 46.5 | 81.5 | 75.9 | 67.9 | 59 | 52.6 | 3019951.72 |
| 8-Jun | 17:00:00 | 65.6 | 47.1 | 90.5 | 76.5 | 67.6 | 58.4 | 51.9 | 3630780.548 |
| 8-Jun | 18:00:00 | 63.5 | 48.8 | 81.9 | 75.8 | 65 | 56 | 51.7 | 2238721.139 |
| 8-Jun | 19:00:00 | 63.8 | 49.5 | 83.6 | 75.9 | 65.5 | 57.3 | 53.5 | 2398832.919 |
| 8-Jun | 20:00:00 | 63 | 50.9 | 81.9 | 75.4 | 64.1 | 57.6 | 54.3 | 1995262.315 |
| 8-Jun | 21:00:00 | 61.8 | 51 | 81.5 | 73.9 | 62.9 | 57.5 | 53.9 | 1513561.248 |
| 8-Jun | 22:00:00 | 60.2 | 51.3 | 82.2 | 73.7 | 58 | 55.4 | 53.2 | 10471285.48 |
| 8-Jun | 23:00:00 | 57.1 | 48.4 | 78.9 | 68.7 | 56 | 53 | 50.9 | 5128613.84 |
| 9-Jun | 0:00:00 | 52.1 | 47.9 | 60.5 | 56.2 | 53.8 | 51.7 | 50 | 1621810.097 |
| 9-Jun | 1:00:00 | 53.3 | 45 | 75.2 | 60.3 | 53 | 50.7 | 48.3 | 2137962.09 |
| 9-Jun | 2:00:00 | 51 | 44.3 | 74 | 53.8 | 51.8 | 49.8 | 47.8 | 1258925.412 |
| 9-Jun | 3:00:00 | 56 | 44.2 | 80.5 | 66.8 | 52.5 | 50.1 | 47.7 | 3981071.706 |
| 9-Jun | 4:00:00 | 60.1 | 47.1 | 84.6 | 74.2 | 53.9 | 51.5 | 49.4 | 10232929.92 |
| 9-Jun | 5:00:00 | 64 | 45.7 | 81 | 76.8 | 66.5 | 50.6 | 48.1 | 25118864.32 |
| 9-Jun | 6:00:00 | 66.1 | 45 | 86.9 | 78.1 | 69.9 | 51.8 | 48 | 40738027.78 |
| 9-Jun | 7:00:00 | 67.6 | 43.7 | 84.5 | 78.8 | 72.5 | 53.6 | 46.1 | 5754399.373 |
| 9-Jun | 8:00:00 | 64.7 | 44.4 | 82.5 | 76.8 | 68.4 | 51.9 | 47.8 | 2951209.227 |
| 9-Jun | 9:00:00 | 65.1 | 44 | 86.6 | 77.2 | 67.8 | 52.2 | 48.1 | 3235936.569 |
| 9-Jun | 10:00:00 | 64.9 | 43.4 | 85.9 | 77.8 | 67.7 | 49.2 | 45.6 | 3090295.433 |
| 9-Jun | 11:00:00 | 62.8 | 43.5 | 81.5 | 75.7 | 64.6 | 50.6 | 46.5 | 1905460.718 |
| 9-Jun | 12:00:00 | 66.2 | 44 | 83.6 | 78.4 | 70.2 | 53.3 | 47.2 | 4168693.835 |
| 9-Jun | 13:00:00 | 67.8 | 44.2 | 87.7 | 80.3 | 71.7 | 54.1 | 47.5 | 6025595.861 |

Peak Hou **79**

Location 2-13

| Date | Time | Leq | | | Lmax | Lmin | L( 1) | L(10) | L(50) | L(90) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31-Oct-00 | 9:00 | 78 | 63095734 | 78 | | | | | | | 63095734 | 81.85125 |
| 31-Oct-00 | 9:10 | 78 | 63095734 | | | | | | | | | |
| 31-Oct-00 | 9:20 | 78 | 63095734 | | | | | | | | | |
| 31-Oct-00 | 9:30 | 78 | 63095734 | | | | | | | | | |
| 31-Oct-00 | 9:40 | 78 | 63095734 | | | | | | | | | |
| 31-Oct-00 | 9:50 | 78 | 63095734 | | | | | | | | | |
| 31-Oct-00 | 10:00 | 79 | 79432823 | 79 | 83.8 | 69.8 | 83.5 | 81.6 | 78.2 | 75 | 79027779 | |
| 31-Oct-00 | 10:10 | 78.8 | 75857758 | | 84.3 | 70.9 | 83.6 | 81.9 | 77.9 | 74.3 | | |
| 31-Oct-00 | 10:20 | 78.6 | 72443596 | | 85.5 | 69 | 83.2 | 81.5 | 77.7 | 73.8 | | |
| 31-Oct-00 | 10:30 | 79.5 | 89125094 | | 86.2 | 68.6 | 84.6 | 82.2 | 78.8 | 74.1 | | |
| 31-Oct-00 | 10:40 | 79.2 | 83176377 | | 87.1 | 70.3 | 84.2 | 81.8 | 78.5 | 74.4 | | |
| 31-Oct-00 | 10:50 | 78.7 | 74131024 | | 83.7 | 69.4 | 82.9 | 81.4 | 78.2 | 74.3 | | |
| 31-Oct-00 | 11:00 | 79 | 79432823 | 79 | 86.2 | 67.9 | 83.7 | 81.7 | 78.4 | 74.8 | 76436705 | |
| 31-Oct-00 | 11:10 | 78 | 63095734 | | 82.3 | 67.4 | 81.9 | 80.7 | 77.5 | 74 | | |
| 31-Oct-00 | 11:20 | 79 | 79432823 | | 85.4 | 69.2 | 83.9 | 81.8 | 78.2 | 74.9 | | |
| 31-Oct-00 | 11:30 | 79.2 | 83176377 | | 84.6 | 70.2 | 83.7 | 81.8 | 78.7 | 74.8 | | |
| 31-Oct-00 | 11:40 | 78.8 | 75857758 | | 85.1 | 71 | 83.7 | 81.6 | 77.9 | 74.7 | | |
| 31-Oct-00 | 11:50 | 78.9 | 77624712 | | 85.3 | 66.6 | 83.8 | 82 | 77.9 | 74.2 | | |
| 31-Oct-00 | 12:00 | 79.7 | 93325430 | 79 | 84.9 | 70.6 | 84.1 | 82.3 | 79.1 | 75 | 84549862 | |
| 31-Oct-00 | 12:10 | 78.5 | 70794578 | | 86.2 | 69.1 | 83.9 | 81.2 | 77.5 | 74.1 | | |
| 31-Oct-00 | 12:20 | 79.1 | 81283052 | | 87.2 | 69.5 | 83.9 | 81.8 | 78.2 | 74.3 | | |
| 31-Oct-00 | 12:30 | 79.1 | 81283052 | | 84.7 | 71.1 | 83.5 | 81.7 | 78.6 | 74.4 | | |
| 31-Oct-00 | 12:40 | 79.3 | 85113804 | | 84.7 | 71.3 | 83.6 | 81.7 | 78.9 | 74.8 | | |
| 31-Oct-00 | 12:50 | 79.8 | 95499259 | | 90.6 | 71.1 | 85.2 | 82.3 | 79 | 75 | | |
| 31-Oct-00 | 13:00 | 79 | 79432823 | 79 | 86 | 69.9 | 83.8 | 81.5 | 78.4 | 74.3 | 88642613 | |
| 31-Oct-00 | 13:10 | 79.4 | 87096359 | | 85 | 67.6 | 83.6 | 82.1 | 78.9 | 74.8 | | |
| 31-Oct-00 | 13:20 | 79.7 | 93325430 | | 85.5 | 71.2 | 84.7 | 82.4 | 79.3 | 74.6 | | |
| 31-Oct-00 | 13:30 | 79.2 | 83176377 | | 84 | 71.5 | 83.5 | 81.7 | 78.9 | 75.2 | | |
| 31-Oct-00 | 13:40 | 79.7 | 93325430 | | 85.3 | 70.5 | 84.4 | 82.2 | 79.2 | 75.4 | | |
| 31-Oct-00 | 13:50 | 79.8 | 95499259 | | 85 | 70.5 | 83.8 | 82.1 | 79.5 | 75.4 | | |
| 31-Oct-00 | 14:00 | 78.8 | 75857758 | 79 | 83.9 | 67.8 | 83.4 | 81.5 | 78.3 | 74.5 | 85485096 | |
| 31-Oct-00 | 14:10 | 79.4 | 87096359 | | 83.9 | 69.2 | 83.5 | 81.8 | 79 | 76.1 | | |
| 31-Oct-00 | 14:20 | 78.7 | 74131024 | | 85.2 | 67.7 | 83 | 81.3 | 78.2 | 74.9 | | |
| 31-Oct-00 | 14:30 | 79.8 | 95499259 | | 87.6 | 71 | 84.9 | 82 | 79.3 | 75.4 | | |
| 31-Oct-00 | 14:40 | 79.5 | 89125094 | | 84.5 | 72.1 | 83.6 | 81.7 | 79 | 76.2 | | |
| 31-Oct-00 | 14:50 | 79.6 | 91201084 | | 83.7 | 70.5 | 83.3 | 81.8 | 79.2 | 76.5 | | |
| 31-Oct-00 | 15:00 | 79.1 | 81283052 | 77 | 85.1 | 71.5 | 83.3 | 80.9 | 78.7 | 76.5 | 45278860 | |
| 31-Oct-00 | 15:10 | 78 | 63095734 | | 83.4 | 66.1 | 82.8 | 80.8 | 77.9 | 70.4 | | |
| 31-Oct-00 | 15:20 | 74.7 | 29512092 | | 79.9 | 66.5 | 79 | 77.4 | 74.1 | 70.1 | | |
| 31-Oct-00 | 15:30 | 75.8 | 38018940 | | 82.6 | 64.9 | 81.6 | 79.1 | 74.5 | 70.5 | | |
| 31-Oct-00 | 15:40 | 73 | 19952623 | | 84.9 | 63 | 80.9 | 74.9 | 72.1 | 69.2 | | |
| 31-Oct-00 | 15:50 | 76 | 39810717 | | 83 | 68.4 | 80.5 | 77.9 | 75.5 | 72.9 | | |
| 31-Oct-00 | 16:00 | 74.7 | 29512092 | 74 | 81 | 68.4 | 79.3 | 77 | 74.2 | 70.8 | 25990813 | |
| 31-Oct-00 | 16:10 | 73.7 | 23442288 | | 79.6 | 66.4 | 78.6 | 75.9 | 73.2 | 69.3 | | |
| 31-Oct-00 | 16:20 | 75.4 | 34673685 | | 80.1 | 67.1 | 79 | 77.3 | 75.2 | 72.3 | | |
| 31-Oct-00 | 16:30 | 74.6 | 28840315 | | 80.4 | 66.3 | 79.7 | 77.2 | 74.1 | 69.3 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31-Oct-00 | 16:40 | 73.8 | 23988329 | | 79.7 | 65.3 | 78.9 | 76.3 | 73.4 | 68.5 | |
| 31-Oct-00 | 16:50 | 71.9 | 15488166 | | 77.3 | 67.5 | 76 | 74.1 | 71.3 | 69.2 | |
| 31-Oct-00 | 17:00 | 73.2 | 20892961 | 74 | 79.9 | 66.3 | 78 | 75.5 | 72.8 | 69.5 | 27471473 |
| 31-Oct-00 | 17:10 | 73.7 | 23442288 | | 79.1 | 68.9 | 77.8 | 75.9 | 73.3 | 70.7 | |
| 31-Oct-00 | 17:20 | 74 | 25118864 | | 79.6 | 68.3 | 77.8 | 76.3 | 73.5 | 70.2 | |
| 31-Oct-00 | 17:30 | 73.1 | 20417379 | | 82.4 | 63.9 | 78.2 | 75.3 | 72.4 | 69 | |
| 31-Oct-00 | 17:40 | 74.5 | 28183829 | | 80 | 68.2 | 78.9 | 76.6 | 74.1 | 71.2 | |
| 31-Oct-00 | 17:50 | 76.7 | 46773514 | | 83.5 | 64.9 | 81.9 | 78.9 | 76.3 | 73.4 | |
| 31-Oct-00 | 18:00 | 77.7 | 58884366 | 78 | 83.4 | 71 | 82.4 | 80.2 | 77.2 | 75 | 60823743 |
| 31-Oct-00 | 18:10 | 77.1 | 51286138 | | 81.9 | 70.8 | 81.3 | 79.4 | 76.7 | 74 | |
| 31-Oct-00 | 18:20 | 78.2 | 66069345 | | 84.9 | 71.9 | 82.7 | 80.4 | 77.8 | 75.2 | |
| 31-Oct-00 | 18:30 | 78.1 | 64565423 | | 83.1 | 71.4 | 82.6 | 80.4 | 77.6 | 75 | |
| 31-Oct-00 | 18:40 | 77.4 | 54954087 | | 86 | 68.2 | 82.9 | 80.1 | 76.6 | 72.3 | |
| 31-Oct-00 | 18:50 | 78.4 | 69183097 | | 85.6 | 70 | 83 | 81 | 77.6 | 74.9 | |
| 31-Oct-00 | 19:00 | 78.6 | 72443596 | 77 | 86.2 | 69.6 | 82.8 | 80.9 | 77.9 | 75.2 | 55395380 |
| 31-Oct-00 | 19:10 | 78.1 | 64565423 | | 83.4 | 70.3 | 82.7 | 80.5 | 77.7 | 74.4 | |
| 31-Oct-00 | 19:20 | 77.6 | 57543994 | | 83.8 | 68.4 | 82.7 | 80.3 | 77.1 | 72 | |
| 31-Oct-00 | 19:30 | 76.2 | 41686938 | | 82.6 | 66.7 | 81.4 | 78.6 | 75.6 | 71.8 | |
| 31-Oct-00 | 19:40 | 76.4 | 43651583 | | 82.9 | 65.2 | 81.9 | 79.3 | 75.7 | 71 | |
| 31-Oct-00 | 19:50 | 77.2 | 52480746 | | 83.8 | 66.4 | 82.3 | 80.2 | 76.5 | 72.3 | |
| 31-Oct-00 | 20:00 | 77.1 | 51286138 | 77 | 85.9 | 66.9 | 82.9 | 80 | 76.2 | 71.2 | 47500136 |
| 31-Oct-00 | 20:10 | 77 | 50118723 | | 85 | 65.9 | 82.7 | 79.8 | 76.1 | 71.8 | |
| 31-Oct-00 | 20:20 | 77.2 | 52480746 | | 83.7 | 67 | 82.6 | 80.1 | 76.5 | 72.3 | |
| 31-Oct-00 | 20:30 | 76.5 | 44668359 | | 84.5 | 64.5 | 82.4 | 79.6 | 75.6 | 70.7 | |
| 31-Oct-00 | 20:40 | 76.1 | 40738028 | | 84.2 | 68.4 | 81.8 | 78.4 | 75.4 | 72.1 | |
| 31-Oct-00 | 20:50 | 76.6 | 45708819 | | 85.1 | 68.4 | 82.5 | 79.6 | 75.6 | 72.2 | |
| 31-Oct-00 | 21:00 | 76.9 | 48977882 | 76 | 88.1 | 68.6 | 82.7 | 79.6 | 75.8 | 72.2 | 36993409 |
| 31-Oct-00 | 21:10 | 75.8 | 38018940 | | 82.9 | 64.3 | 81.6 | 78.6 | 75.1 | 71.1 | |
| 31-Oct-00 | 21:20 | 75 | 31622777 | | 85.3 | 65.4 | 81.5 | 77.8 | 74.1 | 68.7 | |
| 31-Oct-00 | 21:30 | 75.4 | 34673685 | | 82.9 | 65.2 | 81.1 | 78.7 | 74.3 | 69.5 | |
| 31-Oct-00 | 21:40 | 75.1 | 32359366 | | 82.4 | 63.9 | 81.1 | 78 | 74.4 | 69.3 | |
| 31-Oct-00 | 21:50 | 75.6 | 36307805 | | 84.9 | 63.2 | 81.9 | 78.8 | 74.5 | 69.4 | |
| 31-Oct-00 | 22:00 | 75 | 31622777 | 75 | 82.2 | 66.4 | 80.9 | 78.2 | 73.7 | 69.9 | 346356524 |
| 31-Oct-00 | 22:10 | 75.1 | 32359366 | | 82.7 | 65.5 | 81.3 | 78.5 | 73.6 | 69 | |
| 31-Oct-00 | 22:20 | 75.4 | 34673685 | | 83.7 | 63.5 | 82.5 | 78.4 | 74.2 | 68.2 | |
| 31-Oct-00 | 22:30 | 75.4 | 34673685 | | 85.1 | 61.7 | 82.3 | 79.1 | 73.6 | 67.6 | |
| 31-Oct-00 | 22:40 | 75.4 | 34673685 | | 86.4 | 63.4 | 83.2 | 78.6 | 73.4 | 68.4 | |
| 31-Oct-00 | 22:50 | 76 | 39810717 | | 83.9 | 66.6 | 82.5 | 79.1 | 74.7 | 70.4 | |
| 31-Oct-00 | 23:00 | 76.2 | 41686938 | 75 | 83.1 | 65.6 | 82.5 | 79.5 | 74.9 | 69.6 | 325905257 |
| 31-Oct-00 | 23:10 | 75.6 | 36307805 | | 83.7 | 66.1 | 82.5 | 78.8 | 74.1 | 69 | |
| 31-Oct-00 | 23:20 | 75 | 31622777 | | 83.2 | 60.3 | 81.7 | 78 | 73.8 | 67.8 | |
| 31-Oct-00 | 23:30 | 74.5 | 28183829 | | 82.8 | 60 | 81.7 | 77.8 | 73 | 67.1 | |
| 31-Oct-00 | 23:40 | 74.4 | 27542287 | | 82.8 | 63.7 | 82 | 77.7 | 72.5 | 67.4 | |
| 31-Oct-00 | 23:50 | 74.8 | 30199517 | | 83.2 | 58.5 | 81.9 | 78.7 | 72.8 | 66.4 | |
| 1-Nov-00 | 0:00 | 73.4 | 21877616 | 74 | 85.1 | 55.6 | 81.1 | 76.8 | 71.5 | 63.9 | 244384772 |
| 1-Nov-00 | 0:10 | 74.6 | 28840315 | | 82.6 | 61.7 | 81.3 | 77.9 | 73 | 68.2 | |
| 1-Nov-00 | 0:20 | 74.9 | 30902954 | | 84 | 59.5 | 81.8 | 79 | 72.8 | 65.7 | |
| 1-Nov-00 | 0:30 | 74 | 25118864 | | 85 | 59.1 | 82 | 77.7 | 71.5 | 64.4 | |
| 1-Nov-00 | 0:40 | 73.6 | 22908677 | | 86.5 | 57.1 | 80.8 | 77.1 | 71.2 | 64.7 | |
| 1-Nov-00 | 0:50 | 72.3 | 16982437 | | 82.3 | 53.6 | 80.5 | 76 | 69.9 | 59.6 | |
| 1-Nov-00 | 1:00 | 74.1 | 25703958 | 74 | 83.7 | 55.7 | 81.7 | 77.9 | 71.8 | 64.3 | 244728399 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Nov-00 | 1:10 | 74.3 | 26915348 | | 83.2 | 59.7 | 81.3 | 77.9 | 72.6 | 67.1 | |
| 1-Nov-00 | 1:20 | 73.7 | 23442288 | | 83.8 | 52.1 | 82.4 | 77.7 | 71.2 | 60.3 | |
| 1-Nov-00 | 1:30 | 74 | 25118864 | | 87.8 | 58.6 | 81.9 | 77.5 | 71.7 | 64.6 | |
| 1-Nov-00 | 1:40 | 73 | 19952623 | | 83.1 | 58.8 | 81.9 | 76.1 | 71 | 63.4 | |
| 1-Nov-00 | 1:50 | 74.1 | 25703958 | | 83.2 | 60.1 | 81.3 | 78.3 | 71.7 | 66 | |
| 1-Nov-00 | 2:00 | 73.2 | 20892961 | 73 | 83.4 | 56.2 | 81.8 | 77 | 70.4 | 63.1 | 207257636 |
| 1-Nov-00 | 2:10 | 73.1 | 20417379 | | 83.3 | 59.8 | 80.8 | 76.8 | 70.8 | 64.8 | |
| 1-Nov-00 | 2:20 | 73.4 | 21877616 | | 83.6 | 58.4 | 81.1 | 77.8 | 70.6 | 61.9 | |
| 1-Nov-00 | 2:30 | 71.7 | 14791084 | | 81.2 | 54.7 | 79.9 | 75.5 | 69.4 | 61.5 | |
| 1-Nov-00 | 2:40 | 73.5 | 22387211 | | 82.9 | 57.3 | 81.3 | 76.7 | 71.9 | 67.1 | |
| 1-Nov-00 | 2:50 | 73.8 | 23988329 | | 82 | 59.7 | 81.4 | 77.2 | 72.3 | 65 | |
| 1-Nov-00 | 3:00 | 74 | 25118864 | 74 | 86.3 | 59.5 | 82 | 78 | 71.4 | 65.8 | 234778108 |
| 1-Nov-00 | 3:10 | 72.9 | 19498446 | | 84.9 | 61.3 | 81.4 | 76.5 | 70.4 | 66 | |
| 1-Nov-00 | 3:20 | 73.2 | 20892961 | | 83.4 | 60.4 | 82 | 76.8 | 70.9 | 65.1 | |
| 1-Nov-00 | 3:30 | 74 | 25118864 | | 83.8 | 61.1 | 81.6 | 77.6 | 71.9 | 66.3 | |
| 1-Nov-00 | 3:40 | 74 | 25118864 | | 82.4 | 63.6 | 81.3 | 77.3 | 72.6 | 68 | |
| 1-Nov-00 | 3:50 | 74 | 25118864 | | 83.5 | 63.8 | 82.1 | 77.1 | 72.2 | 68.4 | |
| 1-Nov-00 | 4:00 | 75.5 | 35481339 | 74 | 83.3 | 67.5 | 82.4 | 78.6 | 74 | 71.1 | 278555154 |
| 1-Nov-00 | 4:10 | 75 | 31622777 | | 83 | 64.5 | 82.3 | 78.7 | 73.1 | 68.8 | |
| 1-Nov-00 | 4:20 | 73.1 | 20417379 | | 83.4 | 64.7 | 81.7 | 76.3 | 70.6 | 66.9 | |
| 1-Nov-00 | 4:30 | 73.3 | 21379621 | | 82 | 62.6 | 80.8 | 77.5 | 70.4 | 66 | |
| 1-Nov-00 | 4:40 | 74 | 25118864 | | 85 | 64.4 | 81.8 | 78.5 | 70.6 | 66.2 | |
| 1-Nov-00 | 4:50 | 75.2 | 33113112 | | 83.7 | 65.5 | 82.2 | 79.2 | 72.4 | 67.6 | |
| 1-Nov-00 | 5:00 | 74.5 | 28183829 | 75 | 82.5 | 63.8 | 81.5 | 78.7 | 71.5 | 66.7 | 323075089 |
| 1-Nov-00 | 5:10 | 74.9 | 30902954 | | 85.3 | 64.7 | 82.6 | 78.9 | 71.8 | 67.2 | |
| 1-Nov-00 | 5:20 | 75.7 | 37153523 | | 89 | 64.6 | 84.4 | 79.4 | 72.7 | 68.3 | |
| 1-Nov-00 | 5:30 | 74.5 | 28183829 | | 82.2 | 65.3 | 80.9 | 78.6 | 72.3 | 68 | |
| 1-Nov-00 | 5:40 | 75.2 | 33113112 | | 84.3 | 65 | 82.9 | 78.9 | 73.1 | 67.9 | |
| 1-Nov-00 | 5:50 | 75.6 | 36307805 | | 83.7 | 66.2 | 82.5 | 79.3 | 73.8 | 69.4 | |
| 1-Nov-00 | 6:00 | 76.3 | 42657952 | 78 | 83.5 | 66.6 | 82.8 | 80.3 | 74.3 | 69.3 | 571571003 |
| 1-Nov-00 | 6:10 | 76.3 | 42657952 | | 86.9 | 67.2 | 82.3 | 79.4 | 74.7 | 71.2 | |
| 1-Nov-00 | 6:20 | 77 | 50118723 | | 83.1 | 68.9 | 82.5 | 80.6 | 75.5 | 71.4 | |
| 1-Nov-00 | 6:30 | 77.9 | 61659500 | | 87.1 | 65.1 | 84.6 | 81.2 | 76.5 | 72 | |
| 1-Nov-00 | 6:40 | 78.1 | 64565423 | | 84.8 | 68.2 | 83.5 | 81 | 77.3 | 73.1 | |
| 1-Nov-00 | 6:50 | 79.1 | 81283052 | | 85.1 | 69.8 | 83.7 | 81.8 | 78.4 | 74.7 | |
| 1-Nov-00 | 7:00 | 77.6 | 57543994 | 78 | 83.6 | 69.9 | 82.7 | 80.5 | 76.7 | 73.6 | 61234753 |
| 1-Nov-00 | 7:10 | 78 | 63095734 | | 87.6 | 68.7 | 83.2 | 80.9 | 77.1 | 72.7 | |
| 1-Nov-00 | 7:20 | 77.9 | 61659500 | | 84.1 | 65.5 | 82.9 | 80.8 | 77 | 73.6 | |
| 1-Nov-00 | 7:30 | 78.1 | 64565423 | | 85.2 | 68.2 | 83.2 | 80.9 | 77.2 | 73.3 | |
| 1-Nov-00 | 7:40 | 77.9 | 61659500 | | 84.7 | 65.7 | 83.7 | 81.1 | 76.7 | 71.6 | |
| 1-Nov-00 | 7:50 | 77.7 | 58884366 | | 84.6 | 68.1 | 83.1 | 80.6 | 76.7 | 73.2 | |
| 1-Nov-00 | 8:00 | 77.3 | 53703180 | 78 | 84.3 | 68.4 | 83.1 | 80.5 | 76.2 | 72.5 | 61129517 |
| 1-Nov-00 | 8:10 | 77.7 | 58884366 | | 84 | 67.5 | 82.6 | 80.5 | 77.2 | 72.1 | |
| 1-Nov-00 | 8:20 | 77.8 | 60255959 | | 84.3 | 67.2 | 82.7 | 80.6 | 77.1 | 73.3 | |
| 1-Nov-00 | 8:30 | 77.8 | 60255959 | | 85.1 | 68.2 | 83.6 | 80.7 | 76.6 | 72.8 | |
| 1-Nov-00 | 8:40 | 78.2 | 66069345 | | 85.3 | 69.3 | 83.9 | 81.2 | 77.2 | 72.8 | |
| 1-Nov-00 | 8:50 | 78.3 | 67608298 | | 87 | 68.5 | 84.6 | 81.1 | 77.2 | 73.3 | |
| 1-Nov-00 | 9:00 | 78.1 | 64565423 | 78 | 84.6 | 64.9 | 83 | 81.2 | 77.3 | 72.2 | |
| 1-Nov-00 | 9:10 | 78.3 | 67608298 | | 84.4 | 69.2 | 83.2 | 81.4 | 77.4 | 73.7 | |
| 1-Nov-00 | 9:20 | 78 | 63095734 | | 84.7 | 67.4 | 83.7 | 81.3 | 76.7 | 72.3 | |
| 1-Nov-00 | 9:30 | 77.7 | 58884366 | | 84.1 | 65.9 | 82.9 | 80.7 | 76.7 | 72.5 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1-Nov-00 | 9:40 | 78.7 | 74131024 | | 84.8 | 69.6 | 83.7 | 81.7 | 77.7 | 73.6 |
| 1-Nov-00 | 9:50 | 77.9 | 61659500 | | 84.5 | 68.1 | 82.9 | 80.9 | 76.8 | 72.6 |
| 1-Nov-00 | 10:00 | 77.6 | 57543994 | 78 | 85.4 | 64.7 | 82.9 | 81 | 76.3 | 72 |
| 1-Nov-00 | 10:10 | 78.2 | 66069345 | | 84.9 | 64.5 | 83.8 | 81.4 | 77.2 | 72.6 |
| 1-Nov-00 | 10:20 | 78.1 | 64565423 | | 84.7 | 66.2 | 83.2 | 81.2 | 77 | 72.2 |
| 1-Nov-00 | 10:30 | 77.9 | 61659500 | | 85 | 63.5 | 83.8 | 80.9 | 76.7 | 71.9 |
| 1-Nov-00 | 10:40 | 78.1 | 64565423 | | 84.7 | 63.8 | 83.6 | 81 | 77.3 | 72.3 |
| 1-Nov-00 | 10:50 | 78.4 | 69183097 | | 87.2 | 66.7 | 84 | 81.3 | 77.3 | 73 |
| 1-Nov-00 | 11:00 | 78.1 | 64565423 | 78 | 84.1 | 62.3 | 83 | 81.1 | 77.2 | 72.6 |
| 1-Nov-00 | 11:10 | 78.6 | 72443596 | | 85.6 | 66.3 | 82.9 | 81.2 | 77.9 | 74.1 |
| 1-Nov-00 | 11:20 | 78.3 | 67608298 | | 85.7 | 65.7 | 83.2 | 81.2 | 77.4 | 72.1 |
| 1-Nov-00 | 11:30 | 78.3 | 67608298 | | 84.6 | 67.7 | 83 | 81 | 77.6 | 73.7 |
| 1-Nov-00 | 11:40 | 78.3 | 67608298 | | 86 | 68.1 | 83.3 | 81.2 | 77.4 | 73.2 |
| 1-Nov-00 | 11:50 | 78.5 | 70794578 | | 84.9 | 66.1 | 83.1 | 81.4 | 77.8 | 73.4 |
| 1-Nov-00 | 12:00 | 79.4 | 87096359 | | 85 | 70.5 | 83.9 | 81.8 | 79 | 75.3 |

Peak Hour Leq = **70**

| Date | Time | Leq | Lmax | Lmin | L( 1) | L(10) | L(50) | L(90) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 29-Jan-01 | 13:16:49 | 69.7 | 74.2 | 62.8 | 74 | 72.1 | 69.2 | 66.5 | 9332543 | | | |
| 29-Jan-01 | 13:20:00 | 69.9 | 83.2 | 60.7 | 75.4 | 71.7 | 69.4 | 65.4 | 9772372 | | | |
| 29-Jan-01 | 13:30:00 | 69.8 | 82.5 | 60.8 | 79.2 | 71.6 | 68.6 | 65.4 | 9549926 | | | |
| 29-Jan-01 | 13:40:00 | 69.4 | 74 | 62 | 73.4 | 71.6 | 69.2 | 66 | 8709636 | | | |
| 29-Jan-01 | 13:50:00 | 69.9 | 74.6 | 61.4 | 73.9 | 72.3 | 69.3 | 65.9 | 9772372 | | | Ldn |
| 29-Jan-01 | 14:00:00 | 69.6 | 75 | 61.2 | 73.9 | 72 | 69.1 | 65.7 | 9120108 | 70 | 9435032 | 71.54147 |
| 29-Jan-01 | 14:10:00 | 69.5 | 74.4 | 60.1 | 73.7 | 71.7 | 69 | 66.2 | 8912509 | | | |
| 29-Jan-01 | 14:20:00 | 69.9 | 73.8 | 63.1 | 73.6 | 72 | 69.7 | 66.7 | 9772372 | | | |
| 29-Jan-01 | 14:30:00 | 69.2 | 74.4 | 64.2 | 72.9 | 71.1 | 68.8 | 66.4 | 8317638 | | | |
| 29-Jan-01 | 14:40:00 | 70.3 | 76.5 | 64.6 | 73.9 | 71.9 | 69.9 | 67.8 | 10715193 | | | |
| 29-Jan-01 | 14:50:00 | 69.9 | 74.5 | 64.7 | 73.6 | 71.7 | 69.6 | 67.3 | 9772372 | | | |
| 29-Jan-01 | 15:00:00 | 68.3 | 75.9 | 59 | 73.7 | 71.2 | 67.5 | 63 | 6760830 | 67 | 5377656 | |
| 29-Jan-01 | 15:10:00 | 65.8 | 69.6 | 60.5 | 69.5 | 67.9 | 65.6 | 62.8 | 3801894 | | | |
| 29-Jan-01 | 15:20:00 | 66 | 70.2 | 59.1 | 69.5 | 68.1 | 65.6 | 63 | 3981072 | | | |
| 29-Jan-01 | 15:30:00 | 69.3 | 76.2 | 63.5 | 73.2 | 71.1 | 68.9 | 67 | 8511380 | | | |
| 29-Jan-01 | 15:40:00 | 67.4 | 76 | 60.9 | 72.7 | 70 | 66.9 | 63.3 | 5495409 | | | |
| 29-Jan-01 | 15:50:00 | 65.7 | 69.6 | 60.6 | 68.9 | 67.8 | 65.4 | 62.7 | 3715352 | | | |
| 29-Jan-01 | 16:00:00 | 66 | 71.6 | 60.5 | 69.9 | 68 | 65.7 | 63.2 | 3981072 | 66 | 3576073 | |
| 29-Jan-01 | 16:10:00 | 65.6 | 72.6 | 59.9 | 69.6 | 67.6 | 65.2 | 62.1 | 3630781 | | | |
| 29-Jan-01 | 16:20:00 | 66.6 | 71.2 | 60.7 | 70.6 | 68.7 | 66.3 | 63.4 | 4570882 | | | |
| 29-Jan-01 | 16:30:00 | 65.1 | 71.6 | 58.3 | 70.2 | 67.7 | 64.4 | 61.7 | 3235937 | | | |
| 29-Jan-01 | 16:40:00 | 65.4 | 79.1 | 58.7 | 69.9 | 66.9 | 64.5 | 62.1 | 3467369 | | | |
| 29-Jan-01 | 16:50:00 | 64.1 | 72.3 | 58.7 | 69.1 | 65.8 | 63.8 | 60.9 | 2570396 | | | |
| 29-Jan-01 | 17:00:00 | 64 | 69.5 | 58 | 68.4 | 66.1 | 63.6 | 61 | 2511886 | 64 | 2784031 | |
| 29-Jan-01 | 17:10:00 | 64.3 | 71.3 | 59 | 68.5 | 66.4 | 63.9 | 61.3 | 2691535 | | | |
| 29-Jan-01 | 17:20:00 | 63.7 | 69.3 | 58.1 | 67.8 | 65.8 | 63.2 | 61.1 | 2344229 | | | |
| 29-Jan-01 | 17:30:00 | 63.8 | 68.1 | 58 | 67.7 | 65.7 | 63.4 | 61.1 | 2398833 | | | |
| 29-Jan-01 | 17:40:00 | 63.6 | 73.7 | 59.2 | 67 | 65.3 | 63.1 | 61.3 | 2290868 | | | |
| 29-Jan-01 | 17:50:00 | 66.5 | 71.2 | 60.7 | 70.5 | 68.3 | 66.2 | 64 | 4466836 | | | |
| 29-Jan-01 | 18:00:00 | 67.1 | 72.6 | 61.6 | 70.7 | 69 | 66.8 | 64.4 | 5128614 | 67 | 4976462 | |
| 29-Jan-01 | 18:10:00 | 66.9 | 71.7 | 58.2 | 70.8 | 68.9 | 66.7 | 64.4 | 4897788 | | | |
| 29-Jan-01 | 18:20:00 | 67.1 | 72.7 | 59 | 71.5 | 69.2 | 66.9 | 63.4 | 5128614 | | | |
| 29-Jan-01 | 18:30:00 | 67.1 | 73.5 | 60.5 | 71.7 | 68.9 | 66.7 | 64.3 | 5128614 | | | |
| 29-Jan-01 | 18:40:00 | 66.7 | 72.6 | 59 | 71.5 | 68.9 | 66.4 | 63.4 | 4677351 | | | |
| 29-Jan-01 | 18:50:00 | 66.9 | 73.6 | 59.1 | 71.6 | 69.2 | 66.6 | 63.2 | 4897788 | | | |
| 29-Jan-01 | 19:00:00 | 66.9 | 72.4 | 59.1 | 71.8 | 69.4 | 66.5 | 63.6 | 4897788 | 67 | 4559574 | |
| 29-Jan-01 | 19:10:00 | 66.8 | 73.6 | 58.9 | 72 | 69.5 | 66.1 | 62.7 | 4786301 | | | |
| 29-Jan-01 | 19:20:00 | 66.6 | 73.2 | 57 | 71.2 | 68.9 | 66.2 | 62.4 | 4570882 | | | |
| 29-Jan-01 | 19:30:00 | 66.6 | 71.4 | 57 | 70.7 | 68.9 | 66.2 | 62.3 | 4570882 | | | |
| 29-Jan-01 | 19:40:00 | 66.3 | 72.7 | 58.7 | 70.8 | 68.8 | 65.9 | 62.1 | 4265795 | | | |
| 29-Jan-01 | 19:50:00 | 66.3 | 72.1 | 57.3 | 70.9 | 68.6 | 65.8 | 62.6 | 4265795 | | | |
| 29-Jan-01 | 20:00:00 | 66.4 | 73.7 | 56.5 | 71.9 | 69.2 | 65.5 | 61 | 4365158 | 66 | 3977929 | |
| 29-Jan-01 | 20:10:00 | 65.8 | 71.4 | 56.3 | 70.7 | 68.4 | 65 | 61 | 3801894 | | | |
| 29-Jan-01 | 20:20:00 | 66.4 | 74.8 | 58.6 | 71.6 | 68.8 | 65.8 | 62.1 | 4365158 | | | |
| 29-Jan-01 | 20:30:00 | 66.1 | 72.6 | 57.9 | 71 | 68.7 | 65.6 | 61.3 | 4073803 | | | |
| 29-Jan-01 | 20:40:00 | 65.6 | 71.8 | 58.9 | 71 | 67.9 | 65.1 | 61.4 | 3630781 | | | |
| 29-Jan-01 | 20:50:00 | 65.6 | 72.1 | 58.3 | 71.2 | 67.9 | 65 | 61.8 | 3630781 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 29-Jan-01 | 21:00:00 | 66 | 73.5 | 58.9 | 71.5 | 68.6 | 65.4 | 62 | 3981072 | 65 | 3187885 |
| 29-Jan-01 | 21:10:00 | 64.6 | 71.3 | 52.8 | 69.9 | 67.4 | 63.8 | 59.8 | 2884032 | | |
| 29-Jan-01 | 21:20:00 | 65.3 | 71.5 | 57.3 | 69.9 | 67.9 | 64.7 | 61 | 3388442 | | |
| 29-Jan-01 | 21:30:00 | 64.8 | 73.2 | 56 | 70.3 | 67.4 | 64.1 | 60.1 | 3019952 | | |
| 29-Jan-01 | 21:40:00 | 64.3 | 69.9 | 54.7 | 69.1 | 66.9 | 63.8 | 59.9 | 2691535 | | |
| 29-Jan-01 | 21:50:00 | 65 | 71.3 | 57.3 | 70.7 | 67.8 | 64.1 | 60.3 | 3162278 | | |
| 29-Jan-01 | 22:00:00 | 64.9 | 70.5 | 57.3 | 69.6 | 67.6 | 64.4 | 60.8 | 3090295 | 65 | 29246116 |
| 29-Jan-01 | 22:10:00 | 64.9 | 72.3 | 57.9 | 70.9 | 68 | 63.6 | 60.4 | 3090295 | | |
| 29-Jan-01 | 22:20:00 | 64.8 | 71.2 | 53.5 | 70.2 | 67.8 | 63.9 | 59.6 | 3019952 | | |
| 29-Jan-01 | 22:30:00 | 64.6 | 70.7 | 56.8 | 70 | 67.4 | 63.7 | 59.9 | 2884032 | | |
| 29-Jan-01 | 22:40:00 | 64 | 72 | 54.9 | 70.4 | 67.2 | 62.7 | 58.9 | 2511886 | | |
| 29-Jan-01 | 22:50:00 | 64.7 | 71.4 | 56 | 70.6 | 67.6 | 63.7 | 59.9 | 2951209 | | |
| 29-Jan-01 | 23:00:00 | 64.9 | 71.4 | 53.9 | 70.6 | 67.9 | 64.1 | 59.9 | 3090295 | 64 | 27287726 |
| 29-Jan-01 | 23:10:00 | 64.2 | 73.1 | 54.1 | 70.5 | 67.3 | 63.2 | 58.9 | 2630268 | | |
| 29-Jan-01 | 23:20:00 | 64.2 | 70.5 | 56 | 69.8 | 67 | 63.4 | 59.3 | 2630268 | | |
| 29-Jan-01 | 23:30:00 | 64 | 72.5 | 49.4 | 70.4 | 67.4 | 62.6 | 58.9 | 2511886 | | |
| 29-Jan-01 | 23:40:00 | 64.5 | 75.8 | 52.1 | 71.6 | 68 | 62.8 | 58.1 | 2818383 | | |
| 29-Jan-01 | 23:50:00 | 64.3 | 73.4 | 54.1 | 71.1 | 67.3 | 63.3 | 59 | 2691535 | | |
| 30-Jan-01 | 0:00:00 | 65.3 | 84.1 | 53.8 | 72.5 | 67.7 | 62.6 | 57.9 | 3388442 | 64 | 26693899 |
| 30-Jan-01 | 0:10:00 | 65.1 | 74 | 50 | 72 | 68.9 | 63.2 | 57.2 | 3235937 | | |
| 30-Jan-01 | 0:20:00 | 63 | 72.5 | 48.5 | 70.3 | 65.9 | 62.1 | 54.7 | 1995262 | | |
| 30-Jan-01 | 0:30:00 | 63.4 | 71.8 | 53.1 | 70.5 | 66.7 | 61.8 | 57.2 | 2187762 | | |
| 30-Jan-01 | 0:40:00 | 63.9 | 72.6 | 49 | 71.4 | 67.7 | 62 | 56.8 | 2454709 | | |
| 30-Jan-01 | 0:50:00 | 64.4 | 74.3 | 50.5 | 70.8 | 67.6 | 63.3 | 56.6 | 2754229 | | |
| 30-Jan-01 | 1:00:00 | 62 | 71.3 | 49.5 | 69.7 | 65.7 | 60.1 | 54.3 | 1584893 | 63 | 18347971 |
| 30-Jan-01 | 1:10:00 | 62.9 | 72 | 50.1 | 70.5 | 66.4 | 61 | 54.5 | 1949845 | | |
| 30-Jan-01 | 1:20:00 | 62.2 | 73.6 | 49.1 | 70.2 | 65.8 | 60.2 | 54.3 | 1659587 | | |
| 30-Jan-01 | 1:30:00 | 62.8 | 70.9 | 48.8 | 69.9 | 66.9 | 60.8 | 53.5 | 1905461 | | |
| 30-Jan-01 | 1:40:00 | 63.2 | 72.1 | 51.6 | 70.6 | 66.5 | 61.8 | 55.9 | 2089296 | | |
| 30-Jan-01 | 1:50:00 | 62.6 | 71.4 | 50.3 | 69.8 | 66.3 | 61 | 56.4 | 1819701 | | |
| 30-Jan-01 | 2:00:00 | 63.1 | 72.6 | 53.4 | 70.8 | 66.4 | 61.4 | 56.9 | 2041738 | 63 | 20303828 |
| 30-Jan-01 | 2:10:00 | 62.2 | 72.4 | 48.4 | 70.6 | 65.6 | 60 | 55 | 1659587 | | |
| 30-Jan-01 | 2:20:00 | 63.5 | 71.9 | 51.1 | 70.2 | 67.3 | 61.9 | 56.5 | 2238721 | | |
| 30-Jan-01 | 2:30:00 | 63.2 | 74.4 | 53.9 | 70.6 | 66.3 | 61.5 | 57 | 2089296 | | |
| 30-Jan-01 | 2:40:00 | 63.6 | 70.9 | 49.3 | 69.9 | 66.8 | 62.1 | 57.2 | 2290868 | | |
| 30-Jan-01 | 2:50:00 | 62.7 | 73.5 | 51.5 | 71 | 65.5 | 61 | 56.4 | 1862087 | | |
| 30-Jan-01 | 3:00:00 | 62.9 | 70.2 | 54.7 | 69.1 | 65.8 | 61.7 | 58.4 | 1949845 | 64 | 26888318 |
| 30-Jan-01 | 3:10:00 | 63.5 | 71.2 | 54.8 | 69.8 | 66.4 | 62.3 | 59 | 2238721 | | |
| 30-Jan-01 | 3:20:00 | 64.2 | 71.8 | 55.8 | 70 | 67.3 | 63 | 59.1 | 2630268 | | |
| 30-Jan-01 | 3:30:00 | 64.3 | 71.7 | 52.7 | 70.7 | 67.1 | 63.1 | 59.6 | 2691535 | | |
| 30-Jan-01 | 3:40:00 | 65.2 | 71.6 | 58 | 70.8 | 67.8 | 64.3 | 61.4 | 3311311 | | |
| 30-Jan-01 | 3:50:00 | 65.2 | 72.1 | 59.8 | 70.2 | 67.7 | 64.4 | 61.9 | 3311311 | | |
| 30-Jan-01 | 4:00:00 | 66.2 | 71.5 | 61.5 | 70.7 | 68.4 | 65.7 | 63.2 | 4168694 | 66 | 35708747 |
| 30-Jan-01 | 4:10:00 | 66 | 74.1 | 60.6 | 71 | 68.7 | 65 | 62.9 | 3981072 | | |
| 30-Jan-01 | 4:20:00 | 65.8 | 71.1 | 60.5 | 70.7 | 68.1 | 65 | 63 | 3801894 | | |
| 30-Jan-01 | 4:30:00 | 65.7 | 72.4 | 61 | 70.9 | 67.9 | 64.8 | 62.9 | 3715352 | | |
| 30-Jan-01 | 4:40:00 | 65.4 | 72.3 | 53.2 | 70.6 | 68.1 | 64.6 | 61.3 | 3467369 | | |
| 30-Jan-01 | 4:50:00 | 63.6 | 71.8 | 52.6 | 70.2 | 67.4 | 61.5 | 58 | 2290868 | | |
| 30-Jan-01 | 5:00:00 | 63.8 | 73.6 | 55.7 | 70.5 | 67.3 | 61.8 | 59 | 2398833 | 65 | 29706243 |
| 30-Jan-01 | 5:10:00 | 64.6 | 71.2 | 59 | 70.3 | 67.6 | 63.6 | 60.7 | 2884032 | | |
| 30-Jan-01 | 5:20:00 | 64 | 71.6 | 51.2 | 70.9 | 68 | 61.6 | 55.5 | 2511886 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30-Jan-01 | 5:30:00 | 65 | 72.5 | 56.8 | 71.2 | 68.5 | 63.6 | 60.1 | 3162278 | | |
| 30-Jan-01 | 5:40:00 | 65.6 | 72.2 | 57.3 | 71.3 | 68.9 | 64.3 | 60.6 | 3630781 | | |
| 30-Jan-01 | 5:50:00 | 65.1 | 72.9 | 57.2 | 71.2 | 68.5 | 63.8 | 59.9 | 3235937 | | |
| 30-Jan-01 | 6:00:00 | 65.1 | 72.4 | 58.1 | 71.1 | 68.3 | 63.7 | 59.9 | 3235937 | 66 | 38592445 |
| 30-Jan-01 | 6:10:00 | 64.9 | 71.9 | 53.4 | 71.4 | 68.7 | 62.9 | 57.2 | 3090295 | | |
| 30-Jan-01 | 6:20:00 | 65.2 | 74.2 | 54.1 | 71.6 | 68.6 | 63.8 | 59.1 | 3311311 | | |
| 30-Jan-01 | 6:30:00 | 66.1 | 73.4 | 56.2 | 71.6 | 69.3 | 65.3 | 60.6 | 4073803 | | |
| 30-Jan-01 | 6:40:00 | 67.3 | 73.3 | 58 | 72.4 | 70.1 | 66.4 | 63.5 | 5370318 | | |
| 30-Jan-01 | 6:50:00 | 66.1 | 72.8 | 57.8 | 71.5 | 68.9 | 65.3 | 61.5 | 4073803 | | |
| 30-Jan-01 | 7:00:00 | 66.6 | 71.8 | 57.1 | 70.9 | 69.3 | 66 | 62.2 | 4570882 | 67 | 5320102 |
| 30-Jan-01 | 7:10:00 | 66.7 | 73.2 | 56.9 | 71.9 | 69.7 | 65.9 | 61.5 | 4677351 | | |
| 30-Jan-01 | 7:20:00 | 67.1 | 71.8 | 60.9 | 70.9 | 69.3 | 66.8 | 63.5 | 5128614 | | |
| 30-Jan-01 | 7:30:00 | 67.5 | 73.4 | 61.1 | 72.2 | 69.9 | 66.8 | 64.1 | 5623413 | | |
| 30-Jan-01 | 7:40:00 | 67.9 | 73.9 | 61 | 72.6 | 70.4 | 67.3 | 64.4 | 6165950 | | |
| 30-Jan-01 | 7:50:00 | 67.6 | 72.8 | 61.8 | 71.7 | 69.9 | 67.2 | 64.1 | 5754399 | | |
| 30-Jan-01 | 8:00:00 | 67.7 | 73.8 | 59.9 | 72.7 | 70.4 | 67 | 64.1 | 5888437 | 67 | 5608056 |
| 30-Jan-01 | 8:10:00 | 67.4 | 73.6 | 59.1 | 72 | 70 | 66.7 | 63.6 | 5495409 | | |
| 30-Jan-01 | 8:20:00 | 67.2 | 73.2 | 61.5 | 71.7 | 69.8 | 66.5 | 63.8 | 5248075 | | |
| 30-Jan-01 | 8:30:00 | 67.4 | 72.5 | 60.1 | 71.5 | 69.8 | 67 | 63.9 | 5495409 | | |
| 30-Jan-01 | 8:40:00 | 67.8 | 74.4 | 58.2 | 73 | 70.6 | 66.8 | 63.7 | 6025596 | | |
| 30-Jan-01 | 8:50:00 | 67.4 | 73.6 | 58.7 | 72.3 | 70.3 | 66.5 | 62.3 | 5495409 | | |
| 30-Jan-01 | 9:00:00 | 68.2 | 74.9 | 61.3 | 73.2 | 70.9 | 67.4 | 64 | 6606934 | 68 | 6737875 |
| 30-Jan-01 | 9:10:00 | 68 | 73.1 | 60.6 | 72.4 | 70.5 | 67.5 | 64.3 | 6309573 | | |
| 30-Jan-01 | 9:20:00 | 67.8 | 73.4 | 58.7 | 72.6 | 70.6 | 67.1 | 63.9 | 6025596 | | |
| 30-Jan-01 | 9:30:00 | 68 | 73.8 | 60.2 | 72.4 | 70.5 | 67.6 | 63.9 | 6309573 | | |
| 30-Jan-01 | 9:40:00 | 68.9 | 75.2 | 59.4 | 73.8 | 71.4 | 68.3 | 65 | 7762471 | | |
| 30-Jan-01 | 9:50:00 | 68.7 | 75.8 | 60.8 | 73 | 71.4 | 68 | 64.8 | 7413102 | | |
| 30-Jan-01 | 10:00:00 | 68.2 | 73.8 | 59.7 | 72.8 | 71 | 67.5 | 63.7 | 6606934 | 69 | 7338094 |
| 30-Jan-01 | 10:10:00 | 68.9 | 74.3 | 60.6 | 73.2 | 71.4 | 68.4 | 64.6 | 7762471 | | |
| 30-Jan-01 | 10:20:00 | 68.7 | 73.8 | 62.2 | 72.9 | 71.1 | 68.2 | 64.5 | 7413102 | | |
| 30-Jan-01 | 10:30:00 | 68.9 | 76.5 | 59.7 | 74.2 | 71.6 | 68.1 | 63.6 | 7762471 | | |
| 30-Jan-01 | 10:40:00 | 69.2 | 74.1 | 60.3 | 73.5 | 71.8 | 68.7 | 65 | 8317638 | | |
| 30-Jan-01 | 10:50:00 | 67.9 | 73.4 | 59.6 | 72.8 | 70.4 | 67.4 | 64.2 | 6165950 | | |
| 30-Jan-01 | 11:00:00 | 68.3 | 75.4 | 59.7 | 73.6 | 70.9 | 67.6 | 64.1 | 6760830 | 69 | 7278218 |
| 30-Jan-01 | 11:10:00 | 68.4 | 72.8 | 56.7 | 72.7 | 71.2 | 67.8 | 63.9 | 6918310 | | |
| 30-Jan-01 | 11:20:00 | 68.3 | 73.3 | 59.1 | 72.8 | 70.8 | 68 | 63.7 | 6760830 | | |
| 30-Jan-01 | 11:30:00 | 67.9 | 73.9 | 60.3 | 73 | 70.7 | 67 | 63.5 | 6165950 | | |
| 30-Jan-01 | 11:40:00 | 69.6 | 83.3 | 59.9 | 79.6 | 71.5 | 68.2 | 64.3 | 9120108 | | |
| 30-Jan-01 | 11:50:00 | 69 | 81.8 | 58.8 | 78.4 | 70.7 | 67.6 | 64.3 | 7943282 | | |
| 30-Jan-01 | 12:00:00 | 74.8 | 85.5 | 58.6 | 83.1 | 79.8 | 70.1 | 65.6 | 30199517 | **71 Local** | 11462396 |
| 30-Jan-01 | 12:10:00 | 69.4 | 84 | 57.7 | 79.3 | 71.6 | 67.9 | 63.6 | 8709636 | | |
| 30-Jan-01 | 12:20:00 | 68.7 | 74.2 | 60.5 | 72.7 | 71 | 68.3 | 64.5 | 7413102 | | |
| 30-Jan-01 | 12:30:00 | 69.1 | 75.1 | 60.9 | 73.7 | 71.5 | 68.8 | 65.4 | 8128305 | | |
| 30-Jan-01 | 12:40:00 | 68.5 | 73.7 | 60.5 | 72.8 | 71 | 68 | 64.7 | 7079458 | | |
| 30-Jan-01 | 12:50:00 | 68.6 | 75.1 | 60.9 | 73.8 | 71 | 67.9 | 65 | 7244360 | | |
| 30-Jan-01 | 13:00:00 | 68.9 | 75.1 | 59.3 | 73.8 | 71.4 | 68.4 | 64.9 | 7762471 | 69 | 7866767 |
| 30-Jan-01 | 13:10:00 | 69.4 | 74.6 | 60.4 | 73.7 | 71.8 | 68.8 | 65.8 | 8709636 | | |
| 30-Jan-01 | 13:20:00 | 68.9 | 75 | 59.5 | 73.8 | 71.3 | 68.4 | 64.4 | 7762471 | | |
| 30-Jan-01 | 13:30:00 | 69 | 74.1 | 61.6 | 73 | 71.6 | 68.4 | 64.6 | 7943282 | | |
| 30-Jan-01 | 13:40:00 | 68.5 | 73.5 | 61.4 | 72.8 | 70.9 | 67.9 | 65.2 | 7079458 | | |
| 30-Jan-01 | 13:50:00 | 69 | 76 | 60.5 | 72.9 | 71.3 | 68.7 | 64.8 | 7943282 | | |

**APPENDIX C**

# BASELINE GREENHOUSE GAS INVENTORY AND BUSINESS AS USUAL FORECAST

# City of Tracy

# Baseline Greenhouse Gas Emissions Inventory Report

*December 2009*

Conducted by Town-Green in Partnership with the City of Tracy

# City of Tracy Baseline Greenhouse Gas Emissions Inventory

## Table of Contents

## Acknowledgements

This Greenhouse Gas Emissions Inventory Report was a collaborative effort between the staff members from the City of Tracy, local business representatives, and regional transportation organizations. We would like to thank staff members from ICLEI and ICF/Jones & Stokes and Fehr & Peers for their assistance, and the City of Tracy staff for their help in researching and compiling data for the analysis. City staff provided invaluable input and assistance in locating key data resources in the City. We would also like to thank Pacific Gas & Electric Company (PG&E) for its cooperation in providing data.

# I. Introduction

It is widely known in the scientific community that as the world's population increases, we are globally releasing more greenhouse gases than can be absorbed back into nature. While there are some greenhouse gases that are produced naturally, the principal greenhouse gas emissions, which are a result of human activities, are: carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), and Fluorinated Gases. Known as the greenhouse effect or global climate change, models show that this phenomenon will lead to a $2^oF$ to $10^oF$ temperature increase over the next 100 years. Already the Intergovernmental Panel on Climate Change warns that most of the warming observed over the last 50 years is attributable to human activities.

Changes in the earth's temperature will have impacts for residents of Tracy, California. These impacts could include:

- Increase in severe weather events
- Increase in annual rainfall of 20 to 30 percent leading to more serious storm events
- Rising sea levels that will threaten ecosystems and water supplies
- Decrease in the Sierra snow pack which will effect fresh water availability
- Increase in insect-borne diseases

It is essential that each city understand its own contribution to the cumulative effects of climate change. By understanding the major sources of the greenhouse gas emissions, cities may make informed changes to land use and transportation planning, waste management, and energy usage that impact emissions.

## *A. Baseline Emissions Inventory Report: Purpose*

This report, conducted by Town-Green, presents the levels of greenhouse gas (GHG) emissions that the City of Tracy emitted in its base year, 2006, on a municipal level and a community-wide level. The emission forecast represents a business-as-usual (BAU) prediction of how GHG emissions may change the City of Tracy over time if no emissions reduction programs are implemented. This information will inform the city about the sources and severity of emissions as potential targets for reductions. The inventory will help the City tailor its emissions reduction strategies towards significant sources and meet specific State and community environmental and energy goals.

## *B. California Emerald Cities Program*

The City of Tracy is the second participant in the Emerald Cities Pilot Program. Emerald Cities (EC) consists of a program to help transform California cities and counties, especially those underserved or at risk, into more environmentally, economically, and socially sustainable places. Under the general direction of the State Department of Conservation, with assistance from the non-profit National Charrette Institute (NCI) and the California Sustainability Alliance, Town-Green leads the Tracy pilot in collaboration with State and private technical consultants in the appropriate fields of sustainability.

EC is intended to significantly:

- Assist jurisdictions in meeting or exceeding local and state statutory requirements such as California's Assembly Bill 32 (AB32) and Senate Bill 375 (SB375);
- Help communities reduce their carbon footprint, preserve renewable resources, and decrease reliance on fossil fuels;
- Improve the community's ability to prepare for and adapt to economic (e.g., jobs, food, and utility costs), environmental (e.g., climate, air quality), and energy (e.g., power, fuels, reduce auto dependency) changes; and
- Help forge a community-supported policy, regulatory, programmatic, and implementation framework to achieve these desired outcomes

## II. Emissions Inventory

*A. Reasoning, Methodology & Model*

The GHG inventory provides local governments with a baseline or benchmark for quantifying changes in their greenhouse gas emissions. By identifying stationary and mobile sources of $CO_2$ emissions, local governments may methodically focus on targeting the most significant emissions from energy use, transportation, and waste related activities at the community-wide scale and those resulting directly from municipal operations.

Once completed, these inventories offer a baseline to forecast BAU emissions. These forecasts inform the local government by estimating future emissions resulting from continued limited or inaction, and provide an incentive for setting reduction targets; the targets help policy-makers design and implement the corresponding greenhouse gas emission reduction measures.

### 1. Emissions Analysis Software

Town-Green employed International Council for Local Environmental Initiatives' (ICLEI) Clean Air and Climate Protection (CACP) software to calculate the emissions derived from energy consumption, transportation, and waste generation within Tracy. The methodology assumes that electricity and natural gas use, transportation, and solid waste generation will increase over time in proportion to population, number and type of jobs, and housing availability. It also assumes that fuel economy and the percentage of electricity generated from renewable sources remains constant throughout the forecast period.

The CACP software determines emissions using coefficients according to the type of fuel consumed. Emissions from different types of fuel consumption are converted into equivalent measures of carbon dioxide units, or $CO_2e$, in order to be able to compare different greenhouse gases more easily.

The methodologies that the CACP software uses to calculate current and predict future greenhouse emissions follow the same national and international standards established by national and international inventory standards established by the Intergovernmental Panel on Climate Change (1996 Revised IPCC Guidelines for the Preparation of National GHG Emissions Inventories), the U.S. Voluntary Greenhouse Gas Reporting Guidelines (EIA for 1605), and, for emissions generated from solid waste, the U.S. EPA's Waste Reduction Model (WARM).

While the CACP software has been successfully used across the U.S. to calculate greenhouse gas emissions, it is important to note that the ICLEI software model and available community-wide field data on fuel consumption is limited. Therefore, some of the data requires assumptions to be made about the conditions of community-wide fuel consumption. While the numbers generated by this software are very close approximations, the computations may not reflect exact values. Forecasted information about both community emissions and municipal emissions are projected using a different methodology, as the CACP software was insufficient for accurate analysis. The community-wide forecast was calculated using a separate ICLEI spreadsheet that bases its forecast on population and employment growth. The municipal forecast calculated by Town-Green was based on municipal parks, infrastructure, and water and wastewater facility growth estimates provided by City of Tracy staff.

### 2. Inventory Sources and Data Collection Process

To conduct the greenhouse gas emissions inventory, Town-Green used 2006 as the designated year to collect information from several sources and energy sectors. PG&E provided data on electricity and natural gas consumption for the community and local government. Fehr & Peers provided fuel

consumption data for community travel, and Altamont Commuter Express (ACE) and the City's transit provider, Tracer, provided data on emissions from the regional passenger train and public transportation. Solid waste data was gathered from the Tracy Delta Solid Waste Management. City staff coordinated the City's overall municipal data collection process.

Town-Green aggregated this 2006 data to create a community emissions inventory and a municipal operations emissions inventory. The community inventory represents all the energy and transportation-related fuels used, and waste produced by non-government owned and operated establishments within the City of Tracy and its contribution to greenhouse gas emissions. The municipal inventory includes emissions derived from internal government operations and local government employee commute.

It is important to calculate community and municipal GHG emission inventories separately. This allows the local government to analyze its own impacts on climate change, and helps them to lead by example, demonstrating how it will exert control over its own reduction efforts. The City of Tracy will play a critical role in inspiring community members to change their energy consumption patterns and set an example for other local governments to address their greenhouse gas emissions and reduce their environmental impacts.

Tracy's community emissions inventory includes all electricity and natural gas consumption energy within the city limits, excluding energy consumption from County-owned facilities. This means that, even though the electricity used by Tracy's residents is produced elsewhere, the energy and emissions associated with it appears in Tracy's inventory. By calculating emissions to include the impacts of the source of their energy consumption, a community will look at their energy consumption more holistically and not limited by the city's political boundaries.

## *B. Inventory Results*

The results below represent the City of Tracy's completion of the greenhouse gas inventory. The community-wide analysis will be discussed first and the municipal analysis will follow.

### 1. Community Emissions Inventory

In the base year 2006, the City of Tracy emitted approximately 1,338,872 tons of $CO_2e$ from residential, commercial, industrial, transportation and waste sectors, as well as fugitive and refrigerant emissions. Fugitive emissions result as a byproduct of industrial processes. These are emissions of gases from pressurized equipment, generally from leaks and irregular releases of gases.

Burning fossil fuels in motor vehicles and for energy use in buildings and facilities represent the major contributor to Tracy's greenhouse gas emissions. This single largest source of emissions consists of fuel consumption in the transportation sector, contributing 63% of total emissions. Table (1) and Figure (a) below show Tracy's total greenhouse gas emissions from all major sources for the year 2006. The residential, commercial, and industrial sectors represent emissions that result from electricity and natural gas used in both private and public sector buildings and facilities. The transportation sector includes emissions from private and commercial vehicles driven within the City's geographical boundaries, commuter traffic, off-road emissions, as well as the emissions from trips taken by Tracy residents on ACE, the regional passenger train.

The Tracy "Citywide Travel Demand Model" covers all of the vehicle miles traveled (VMT) associated with trips completed within Tracy and half of the VMT generated by jobs and residences located within Tracy but that resulting in travel to/from external destinations. The model does not account for vehicles that pass through Tracy without either a point of origin or a destination within the city. Tracy assumes

emissions accountability for the VMT that occurs outside of the city borders only if is directly related to Tracy residents.

The emissions from transit vehicles and the city-owned fleet, Tracer, are included in the municipal emission summary.

**Table (1): Tracy Community Emissions Summary**

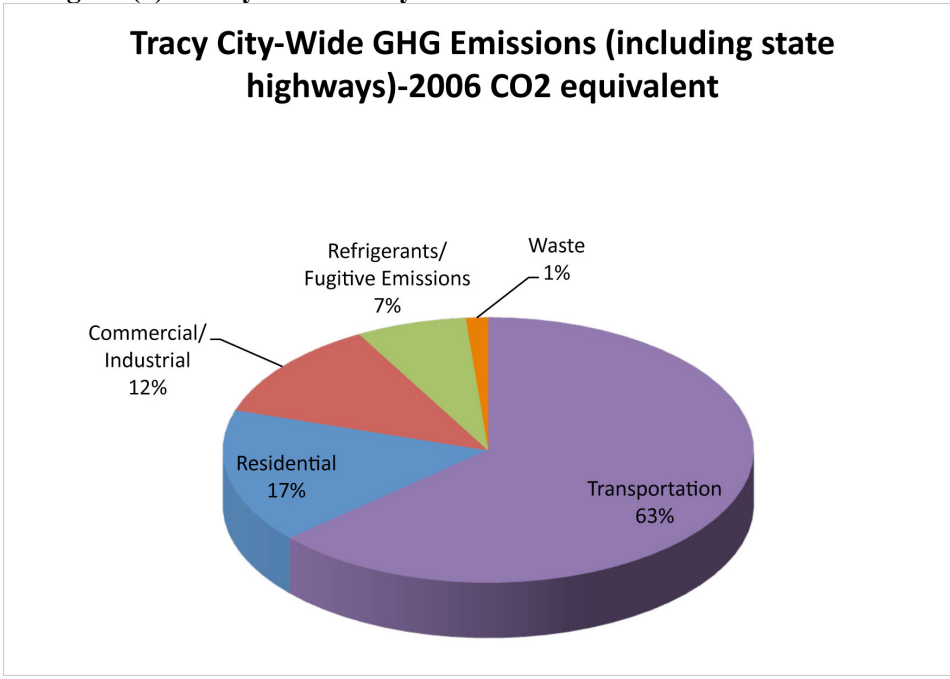
| Potential Sources | Equiv $CO_2e$ (metric tons)* | Energy (MMBtu)** |
|---|---|---|
| Residential | 220,036 | 1,856,775 |
| Commercial/Industrial | 160,740 | 1,355,305 |
| Transportation | 849,673 | 10,816,752 |
| Waste | 18,190 | 0 |
| Fugitive Emissions/Refrigerant | 90,233 | 0 |
| **TOTAL** | **1,338,872** | **14,028,832** |

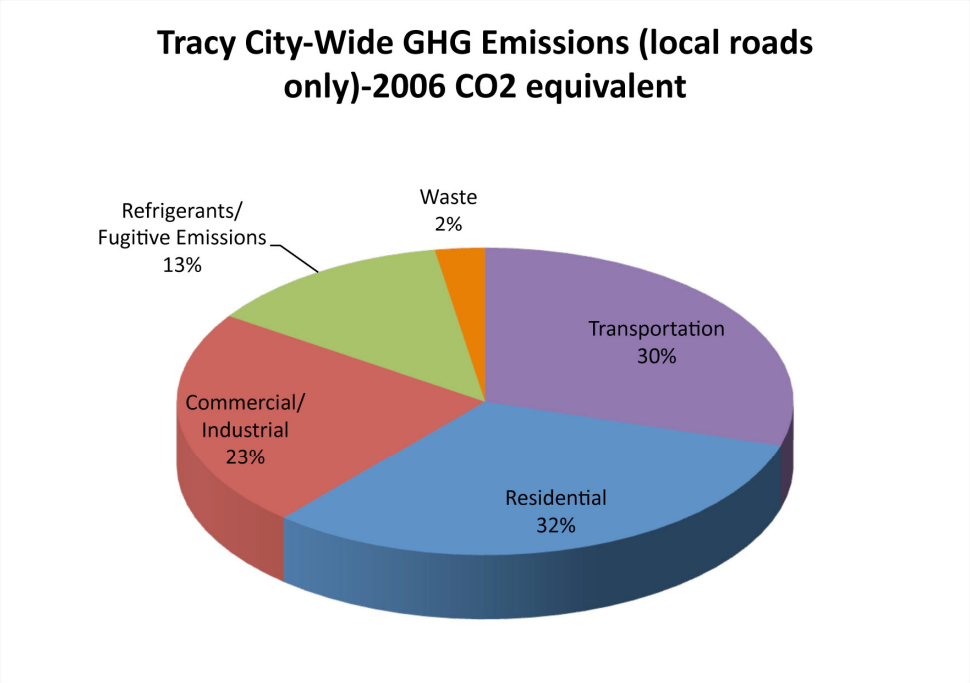
Source: CACP Model output

*Equiv $CO_2e$ refers to equivalent carbon dioxide. It is standard international practice to convert other greenhouse gasses into $CO_2e$ so that their impacts can be directly compared.

**Energy is measured in British Thermal Units. MMBtu represents one million BTUs.

**Figure (a): Tracy Community Greenhouse Gas Emissions - Year 2006**




Source: CACP Model output

## Energy / Stationary Source Emissions

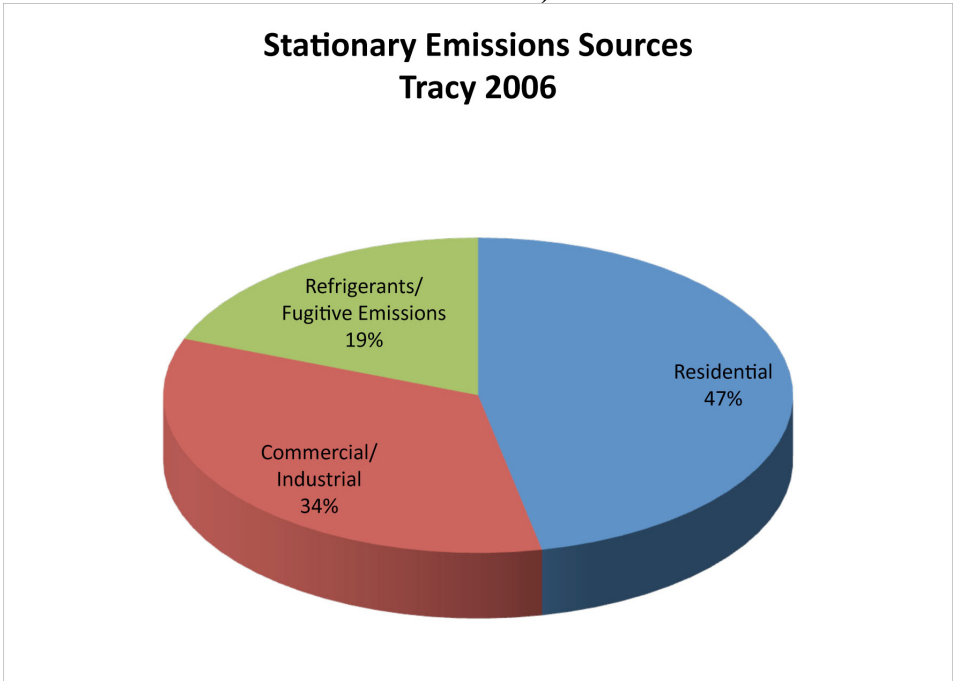
In 2006, Tracy's total stationary energy consumption was about 395,669,635 kWh of electricity and 18,616,718 therms of natural gas. Stationary energy use by all sectors (residential, commercial, industrial activities, and refrigerants/fugitive emissions) accounts for 35.21% of total greenhouse gas emissions in Tracy. These emissions are a result of the combustion of fossil fuel, but do not include fugitive emissions

or refrigerants. Tracy's stationary energy use resulted in a total of approximately 470,670 tons of $CO_2e$ emissions in 2006.

The City of Tracy receives its electricity from Pacific Gas & Electric Company (PG&E). The 2006 emissions coefficients for electricity provided by PG&E are included in the notes in Appendix A (Data Summary Reports and Inventory Detailed Reports). The types of power sources that make up a utility's electricity generation mix have a significant impact on a city's greenhouse gas emissions. A coal fired power plant, for example, releases 1.3 tons of $CO_2e$ per megawatt-hour of electricity generated versus 0.7 tons for gas turbines and 0 tons for renewable sources such as solar, wind, or hydroelectric power.

Figure (b) shows the breakdown of greenhouse gas emissions by sector for both electricity and natural gas combined. Of the total 470,670 tons of $CO_2e$ emitted due to stationary energy use, 46.75% was from residential building, 34.08% was from commercial/industrial buildings, and 19.17% was from refrigerants and fugitive emissions.

**Figure (b): Tracy Community Greenhouse Gas Emissions Breakdown (Residential and Commercial/Industrial) - Year 2006**




Source: CACP Model output

**Residential**

In 2006, Tracy's 80,308 residents consumed 227,359,090 kWh of electricity, or about 9,103 kWh per household, and 10,808,054 therms of natural gas, or about 433 therms per household. This consumption resulted in a release of 220,036 tons of $CO_2e$. Major residential energy uses include refrigeration, lighting, and water heating.

**Commercial/Industrial**

In 2006, Tracy's commercial/industrial sector buildings consumed 168,310,545 kWh of electricity and 7,808,664 therms of natural gas. This consumption resulted in a release of 160,740 tons of $CO_2e$ into the atmosphere.

While industrial establishments are located in Tracy, separating the emissions attributed to industrial facilities from those from commercial facilities is not possible. Calculating separate Commercial and Industrial energy consumption is constrained because PG&E is not permitted by the California Public Utilities Commission to release that aggregate data, under the '15-15 rule.' If any single private industrial customer makes up more than 15% of the total industrial usage or there are fewer than 15 total industrial customers, PG&E is required to "roll-up" or combine the industrial data into the commercial sector to prevent a 15-15 confidentiality violation.

**Fugitive Emissions/Refrigerants**

In 2006, Tracy's residential and commercial/industrial sectors use of refrigerants and leaking pressurized equipment resulted in a release of 90,233 tons of $CO_2e$. These emissions were measured at a 1.1 $MTCO_2e$ per capita rate based on data from the California Air Resources Board. The estimate is included in the inventory as refrigerants, but is defined broadly to include CFCs and HCFCs, and the emissions are considered "High Global Warming Potential GHGs." For more information regarding the methodology of how this was calculated, please refer to Appendix A. At the time this report was written, the City of Tracy did not have a standardized method of recording fugitive emissions and refrigerants emitted by the residential, commercial, or industrial sectors.

**Stationary Sources**

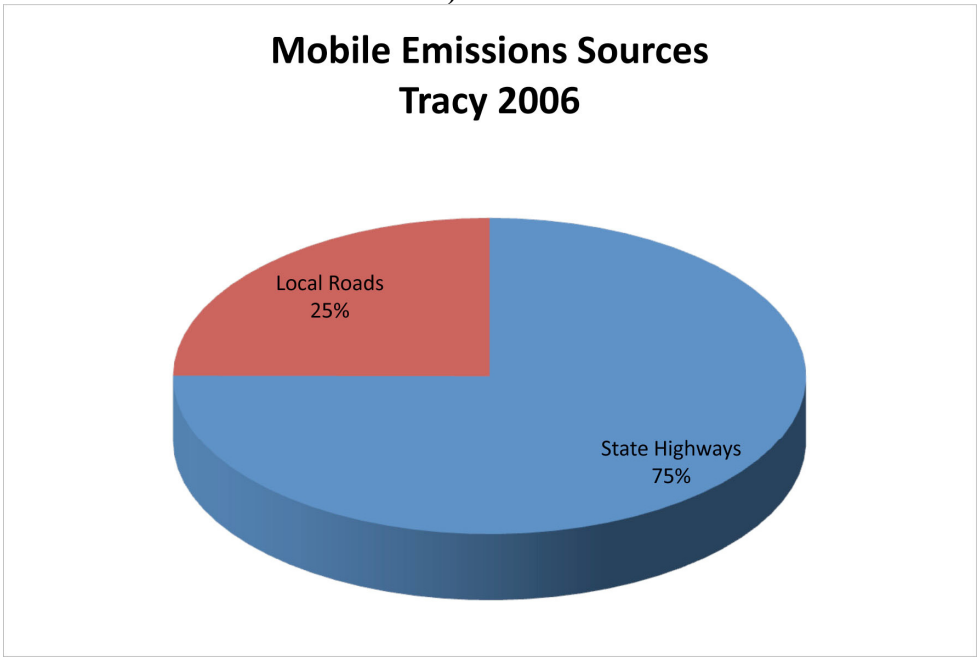
Commercial and industrial facilities consume both electricity and natural gas, and may consume other types of fuel onsite for operation of their equipment or vehicles. Information regarding propane and kerosene used by private entities was not tracked by the City of Tracy, and at the time of this inventory, was not available. However, the off-road emissions inventory from the Air Resources Board (ARB) show that construction, agricultural, recreational, and industrial equipment and vehicles consumed 1,852,417 gallons of diesel, 255,700 gallons of gas, and emitted 23,949 tons of $CO_2e$. Including aviation gas and jet fuel, the off-road emissions were responsible for emitting 24,873 tons of $CO_2e$. These off-road emissions are accounted for in the transportation emissions section.

## Transportation Emissions

The community transportation sector, including travel on state highways, local roads, and the commuter train, as well as all off-road emissions, is responsible for approximately 63.43% of Tracy's greenhouse gas emissions. Motor vehicles driven within the City's geographical boundaries on both local and state roads emitted approximately 823,136 tons of $CO_2e$ in 2006. The regional commuter train, ACE, plus aviation and jet fuel from the Tracy Municipal Airport contribute another 1,664 tons of $CO_2e$, or 0.2% of the transportation emissions. Off-road vehicles and equipment emitted approximately 24,873 tons of $CO_2e$ in 2006, accounting for 2.9% of the transportation emissions. The VMT model used to help calculate the motor vehicle emissions does not account for travel passing through Tracy without either a point of origin or a destination within the city.

Figure (c) shows the breakdown of greenhouse gas emissions by vehicle miles traveled (VMT) from local roads and VMT from state highways. Of the total 849,673 tons of $CO_2e$ emitted from transportation on all roads, 25% was from local roads and 75% was from state highways. This percentage does not include off-road emissions.

**Figure (c): Tracy Community Greenhouse Gas Emissions Breakdown (Local Roads and State Roads) - Year 2006**




Calculations for transportation emissions are based on figures for total VMT in the City of Tracy. Fehr and Peers supplied the necessary VMT data, the breakdown of vehicle types, and the percentage of vehicles in each speed-bin.

## Solid Waste Emissions

In 2006, Tracy sent approximately 92,202 tons of solid waste to the San Joaquin County Foothill Landfill, resulting in 18,190 tons of $CO_2$ e emissions. Of this total landfilled waste, 66,600 tons were hauled by Tracy Delta Waste Management and passed through the Tracy Delta Facility. 25,602 tons of waste was hauled by individuals, landscapers, and construction companies. Tracy employs recycling measures to reduce the amount of waste sent to landfills.

Greenhouse gases are generated by landfilling the waste, and by the decomposition of the organic fraction, which produces methane. Methane is a greenhouse gas 21 times more potent than carbon dioxide. Table (2) shows the approximate breakdown of the materials Tracy sent to landfills in 2006. The WARM model estimates the $CO_2$e emissions released from the landfill based on the percentages of waste from a 2003 study for Cascadia, California. At the time this inventory was written, San Joaquin County had not conducted a more current waste characterization study.

**Table (2): Tracy Waste Composition**

| Waste Type | Waste Share |
|---|---|
| Paper Products | 21% |
| Food Waste | 15 % |
| Plant Debris | 14 % |
| Wood/Textiles | 23 % |
| All Other Waste | 27 % |
| **TOTAL** | **100 %** |

Source: Tracy Delta Solid Waste Management

The U.S. EPA's Waste Reduction Model (WARM) model is used to estimate the greenhouse gas impacts of landfilling Tracy's waste. The WARM model makes the following assumptions in the analysis: 75% of landfill gas, methane, is collected and flared, so that only 25% escapes to the atmosphere. The flaring of methane converts it back into $CO_2$. The calculation does not account for any sequestration at the site. The landfill is 20 miles from the transfer station, so the model accounts for the energy used in the transfer of waste to the landfill.

The CACP software calculates waste disposal emissions using a model based on the WARM model and is therefore consistent with national standards.

However, the CACP software does not fully account for or reflect the emission reductions in the energy use from recycling and composting programs. This is important because recycling and composting programs can have a significant impact on reducing GHG emissions. Tracy Delta Solid Waste Management calculated that Tracy's recycling programs helped avoid 24,266 metric tons of $CO_2e$ in calendar year 2006. Recycling also avoids GHG emissions by returning materials back into the production stream to replace the use of virgin materials that require additional energy use in the production of goods, and by recycling paper products that avoid cutting down forests.

## 2. Municipal Operations Emissions Inventory

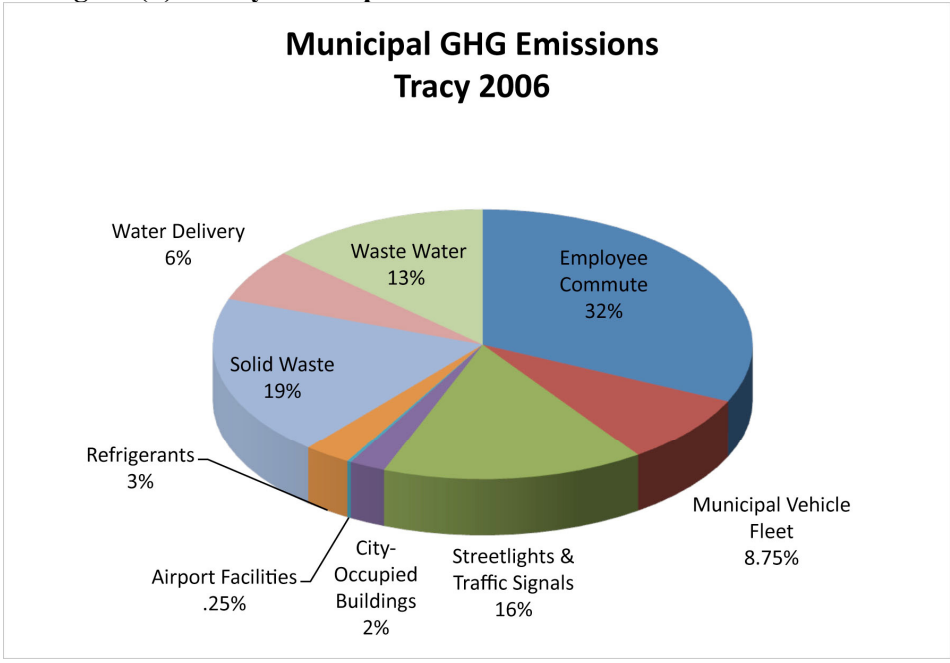
In the base year of 2006, Tracy's municipal operations generated 11,449 tons of $CO_2e$. As Table (3) and Figure (d) show, the emissions from City's employee commute accounted for the plurality of emissions at 32%.

**Table (3): Tracy Municipal Emissions Summary**

| Potential Sources | Equiv $CO_2e$ (tons) | Energy (MMBtu) |
|---|---|---|
| Buildings/Facilities | 247 | 4,191 |
| Vehicle/Transit Fleet | 958 | 12,230 |
| Employee Commute | 3,650 | 46,671 |
| Streetlights/Traffic Signals | 1,798 | 26,696 |
| Water Delivery | 722 | 10,720 |
| Wastewater | 1,512 | 23,799 |
| Solid Waste | 2,211 | 5,009 |
| Fugitive Emissions/Refrigerants | 323 | 0 |
| Airport Facilities | 28 | 406 |
| **TOTAL** | **11,449** | **129,722** |

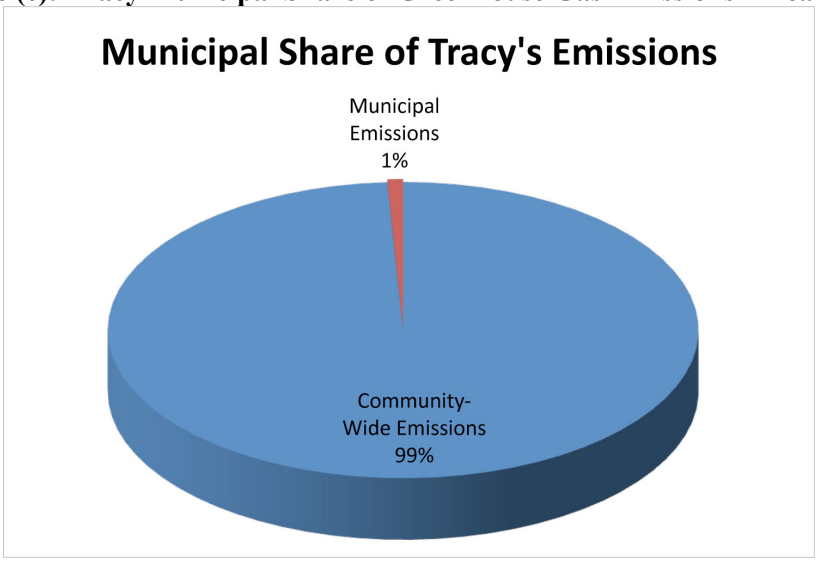
Source: CACP Model output

**Figure (d): Tracy Municipal Greenhouse Gas Emissions – Year 2006**




Source: CACP Model output

**Figure (e): Tracy Municipal Share of Greenhouse Gas Emissions – Year 2006**




Source: CACP Model output

Municipal emissions in Tracy constitute less than 1% of Tracy's total emissions. Local government emissions typically fall between one and five percent of overall community emissions. Appendix B shows the results of the CACP analysis. As a minor contributor to total emissions, actions to reduce municipal energy use may have a small impact on Tracy's overall community emissions levels. However, municipal action can help reduce operation costs and has symbolic value demonstrating leadership that extends beyond the magnitude of emissions actually reduced.

**Energy/Stationary Source Emissions**

In 2006, Tracy municipal buildings, facilities, streetlights, and water distribution consumed 11,115,896 kWh of electricity and 40,743 therms of natural gas, which resulted in a release of 2,795 tons of $CO_2e$ emissions into the atmosphere.

Although the City manages the distribution of water supply, almost all water goes towards community water consumption. Only 1.3% of total water demand within the City is from institutional users. In 2006, imported and local water distribution consumed 3,140,931 KWh of electricity, which used 10,720 MMBtu and released 722 tons of $CO_2e$. No natural gas is used for water distribution. It should be noted that energy emissions from water distribution accounts for facilities and pumping within Tracy's boundaries, as well as from imported water from the Delta Mendota Canal and the Stanislaus River. According to Tracy's 2005 Urban Water Management Plan, surface water has historically comprised between 50 to 60% of the City's total water supply. All of the City's surface water is imported, and its ground water is taken from inside Tracy's boundaries. As groundwater supplies decrease and water demand increases, Tracy intends to increase its imported surface water supply, thus increasing the City's electricity consumption.

**Transportation Emissions**

The City's vehicle and transit fleet consumed 97,605 gallons of fuel and emitted about 958 tons of $CO_2e$. The municipal vehicle fleet includes all vehicles owned and operated by the City of Tracy plus some contractor vehicles performing City functions. The transit fleet includes Tracer, the public bus system.

**Waste Emissions**

The City of Tracy's wastewater and solid waste facilities consumed 4,647,311 kWh of electricity and 107,948 therms of natural gas. This consumption emitted 3,803 $CO_2e$ emissions into the atmosphere. The Tracy Wastewater Treatment Plant processes approximately 8 million gallons of wastewater per day and releases approximately 375 tons of methane per year. This methane is not released into the atmosphere, but is used for heat generation in the two solid waste digesters.

Tracy Delta Solid Waste Management does not distinguish between municipal waste and community waste, therefore municipal solid waste production is rolled into the 92,206 tons of waste sent to the landfill. (See Waste section in the Community Analysis.) The City of Tracy has recycling programs that help to reduce waste stream and $CO_2e$ emissions.

## III. Forecast for Greenhouse Gas Emissions

Town-Green used Tracy's community and municipal operations emissions inventories developed for the base year 2006 to forecast future emissions for the year 2020 and 2050. The emission forecast represents a business-as-usual (BAU) prediction of how greenhouse gas (GHG) emissions may change in the City of Tracy over time.

**Community Forecast**

Projections of greenhouse gas emissions are based on the assumption that energy consumption will grow as population increases. For the community analysis, the forecast was conducted by applying population growth factors to Tracy's base year residential, commercial/industrial, and transportation data. Between 2006 and 2020, the forecast reported a 31.1% growth in emissions based on a BAU scenario. For the municipal operations analysis, the City's Public Works Department forecasts a 20% growth in emissions.

**Transportation emission forecasts**

The community forecast for transportation emissions were based on projected City land use for 2020 and 2050. For 2020, Fehr & Peers estimated the release of 1,118,705 tons of $CO_2e$, a 31.7% growth in emissions from 2006.

**Refrigerant emissions forecast**

Refrigerant emission numbers were based on the ARB's statewide growth in per capita emission estimates. The refrigerant emissions include ozone depleting substances (ODS) and HFC. The ARB used 2007 as their baseline for the per capita emissions, and assumes that the 2007 emissions are similar to the 2006 emissions. The ARB forecasts that in 2020, the metric tons of $CO_2e$ will increase by 26.9%, from 90,233 metric tons of $CO_2e$ in 2007 to 114,477 metric tons of $CO_2e$ in 2020. Between 2007 and 2050, emissions will decrease by 9.1%, to 190, 264 metric tons of $CO_2e$. The 2050 estimate takes into account trends between 1990 and the present, and takes into account the Montreal Protocol phase-out of CFCs and HCFCs. It assumes that these refrigerants will be replaced by reduced-CO2e gases such as HFO-1234yf that have a very low global warming potential (GWP). See Appendix C for the methodology for this estimate.

Please note that the BAU scenario for Tracy's community-wide emission forecast assumes that the City's Growth Management Ordinance (GMO) remains constant over time. The City of Tracy adopted a GMO in 1987 and amended it in 2000. The GMO aims to help Tracy achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities, and includes a balance of housing opportunities. The GMO limits the number of Residential Growth Allotment (RGAs) and building permits to an average of 600 housing units per year for market rate housing, with a maximum of 750 units in any single year, although there are exceptions for affordable housing. This means that the estimated rate of fuel consumption for residential, commercial, industrial, and municipal facilities may be lower than the calculations predicted by the ICLEI model.

**Municipal forecast**

The municipal forecast was based on the growth expectations for buildings and facilities, parks, and infrastructure. Information available regarding the expected increase in square footage for municipal operations was very limited, and PG&E was unable to provide a forecast of energy consumption. City staff was able to provide the square footage and future construction plans for Tracy's fire facilities, the square footage of existing and planned park space, and the planned increases in the water and wastewater treatment plants' capacities. Public Works staff estimated that the wastewater treatment plant's capacity might increase by 33% by 2020, and by 78% by 2050. Assuming that the $CO_2$ emissions per KWh stay constant between 2006 and 2020, $CO_2$ emissions will increase by almost 40% in 2020, and 116% by 2050. However, when staff averaged these growth rates of $CO_2$ emissions with the growth rate of parks, the water treatment plant, and the firehouse facilities, a 20% increase in energy consumption and $CO_2$ emissions was estimated. The raw data considered in this estimate is included in Appendix D.

**Water Supply emission forecasts**

The ICLEI software forecast does not calculate the increased rate of GHG emissions from an increase in imported water from outside of Tracy's political boundaries. Based on the City of Tracy's 2005 Urban Water Management Plan, Tracy will consume 23,900 acre-feet in 2020, resulting in the consumption of 4,402,830 KWh, and the release of 1,012 metric tons of $CO_2e$. This represents a 2.87% increase from 2006 levels. The UWMP assumes a 9.21% increase in water consumption every five years from 2005-2020; this same growth rate was used to project a water demand of 40,537 acre-feet in 2050. This will result in the consumption of 7,467,679 KWh, and the release of 1,717 metric tons of $CO_2e$, representing a 3.13% increase from 2006 levels. These calculations do not factor in special energy conserving technology for water distribution that may be implemented in the future.

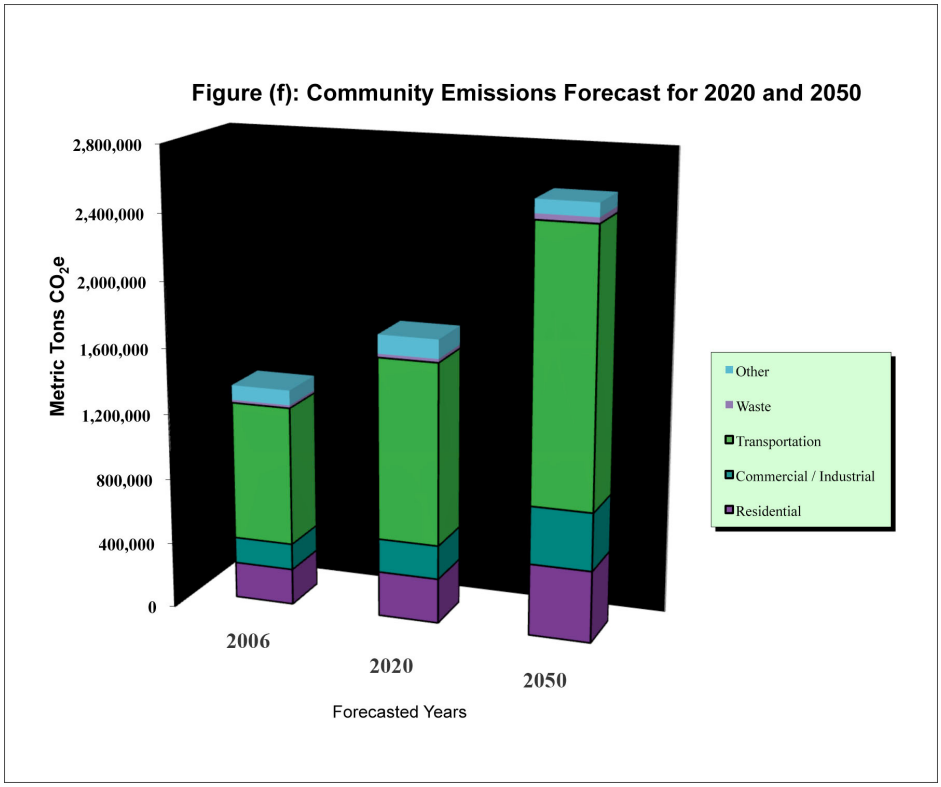
Table (4) provides an emissions summary for Tracy's base year and forecast year.

**Table (4): Tracy's Emissions Summary**

| Tracy's Emissions Summary | | |
|---|---|---|
| | **Community Analysis** | **Municipal Operations Analysis** |
| **Base year** | **2006** | **2006** |
| Indicators used to generate forecast | 1.99 % (Annual population growth rate based on the April 2009 Draft Supplemental EIR for the General Plan Amendment) | 1.42% (Annual rate based on increase in municipal operations) |
| Quantity of $CO_2e$ emissions in base year (metric tons) | 1,336,869 | 11,449 |
| **Forecast year** | **2020** | **2020** |
| Business-as-usual projection of $CO_2e$ emissions in *2020* (metric tons) | 1,735,022; 29.6% increase over baseline | 13,948; 21.8% increase over baseline |
| **Forecast year** | **2050** | **2050** |
| Business-as-usual projection of $CO_2e$ emissions in *2050* (metric tons) | 2,568,068; 92.1% increase over baseline* | 21,291; 86% increase over baseline |

Source: CACP Model Output

*Fehr & Peers will be providing the 2050 forecast for mobile transportation vehicles. The revised 2050 transportation forecast should be added to the Tracy Forecast Builder worksheet in order to calculate the 2050 community analysis' BAU projection.




Source: CACP Model output

Conducting an emissions forecast is essential for setting an emissions reduction target, since the amount of GHG emissions Tracy pledges to reduce will be derived from projected emissions. Appendix C provides the results of the CACP analysis.

## IV. Conclusion

This greenhouse gas emissions inventory report represents a profile of the greenhouse gases that the City of Tracy emitted in its base year, 2006, from community and municipal sources. The report also estimates the greenhouse gases that the City will emit in the year 2020 and 2050, if the community and municipality continue to emit business-as-usual GHG emissions, without additional emission reduction actions or a growth management ordinance.

This inventory is a crucial tool for the City as it develops a climate action plan with new policies, regulations, programs, and practices to meet its emission reduction targets. The inventory serves to direct the City towards the major sources of greenhouse gas emissions. For example, the community inventory for the City of Tracy reveals that the transportation sector is responsible for 63% of total emissions. In response, the city might implement actions that reduce the frequency and length of motor vehicle trips, decrease fossil fuel consumption, and reduce the toxicity of tailpipe emissions. Potential action items may include improving the connectivity to and diversity of destinations for pedestrians and cyclists and increasing public transportation frequency and convenience.

The inventory demonstrates that the municipal government emissions comprise a minimal percentage of community emissions, less than one percent. However, the City of Tracy has the opportunity to exhibit strong and visible leadership role in addressing climate change by reducing its own emissions.

# Appendix A – CACP Reports by Sector, Data Sources, Assumptions and Notes for the Community Inventory

See PDF files: Appendix A_Tracy Community-Wide CACP Reports.pdf, Appendix A_Fehr and Peers Community-Wide Transportation Report.pdf, Appendix A_Solid Waste Stream Worksheet.pdf, Appendix A_ARB Refrigerant Emissions Worksheet.pdf

**Assumptions**

The greenhouse gas inventory calculates emissions based on many assumptions.

- The population and job growth did not account for the recent economic depression. This data assumes that the population and job growth rate will be consistent with past trends. The BAU forecasts do take into account the Growth Management Ordinance that limits the residential growth allotment and building permits per year. This inventory assumes the Ordinance will not be significantly modified in the near future.
- Fugitive emissions and refrigerants from non-municipal or municipal operations are not documented in the City of Tracy. This data was extrapolated from California Air Resources Board's refrigerant calculations on a per capita basis. It was assumed that the consumption per capita rate of emissions is the same throughout California.
- The BAU forecast uses 2030 emissions factors which reflect projected improvements in vehicle efficiency but since it is based on the baseline General Plan land use plan, it does not reflect reductions in VMT due to progressive land use and transportation planning.
- Forecasts are based on "business-as-usual" projections. This does not take into account federal and/or state regulations which address energy consumption and greenhouse gas emissions, such as the Low Carbon Fuel Standard adopted by CARB or the vehicle efficiency requirements directed by AB 1493.
- BAU forecasts also do not consider any change in the electricity grid emission factor. The emission factor will likely change in the future as utilities use more renewable energy and as power plants become more efficient. Lastly, it also doesn't consider adjustments to the per capita energy use; these may increase or decrease according to a mix of technology and behavior changes.
- Forecasts for 2050 use the same the growth rate as that which was used for the period of 2006 – 2020. This is using the BAU assumptions, and assumes that the Growth Management Ordinance will continue to be enforced.

**Community Analysis Methodology**

The data entered into the ICLEI software came from numerous sources of information.

- The residential, commercial and industrial electricity and natural gas data came directly from PG&E.
- Industrial establishments: No energy information is available for industrial establishments under rule 15-15. If any one private industrial customer makes up more than 15% of the total industrial usage or there are fewer than 15 total industrial customers, PG&E is not permitted by the California Public Utilities Commission to release that aggregate data.
- Transportation: Transportation data came from a combination of sources: Fehr & Peers wrote a VMT report, ACE provided data on Tracy ridership and train fuel consumption, and the Tracy airport facilities provided data on aviation and jet fuel for the private airplanes and jets. The off-road emissions were calculated with the ARB's Off-Road Emission model. The model calculated off-road emissions for San Joaquin County. Approximately 0.2% of San Joaquin County's agriculture is in Tracy, therefore, 0.2% of the off-road agricultural equipment was assumed originate in Tracy. Based on data from the San Joaquin Council of Governments, 16% of

construction in San Joaquin County is in Tracy, and 5.49% of industrial off-road equipment is in Tracy. Tracy's population is 12% of San Joaquin County; this number was used as an approximation to calculate Tracy's consumption of fuel from recreation, and small utility vehicles.

- Solid Waste: Solid waste data was provided by Tracy Delta Waste Management. An additional analysis, provided by consultants Edgar and Associates, explains the amount of $CO_2e$ emissions avoided by the City's recycling program. This information is explained in the appendix below.
- Refrigerants: Refrigerant information, under "other" category, was provided by the Air Resources Board (ARB), which calculated a detailed analysis of refrigerants per capita in Tracy, and also broke those emissions down into community and municipal use. The 1.1 $MTCO_2e$ per capita measurement includes CFCs and HCFCs. For more information, please refer to the detailed methodology below.
- Water**:** Emissions from water distribution and treatment are reported in the government analysis section because water is a city managed resource. However, only 1.3% of total water demand within the City is from institutional users.[1]

**Waste Methodology**

There is a discrepancy between the ICLEI software and the WARM model:

WARM calculates the methane generation potential of the landfilled waste and allocates that amount of methane generation in the year that the waste is placed, even though the landfill gas will be generated over many years. This is different than most landfill gas generation models, which use a first order decay equation to allocate the potential methane generation over future years in accordance with a decay constant for the waste.

Edgar & Associates produced a report detailing the waste stream handled by Tracy Delta Waste Management Company, and describing the $CO_2$ emissions avoided by the recycling and composting program. Their final number is slightly different than the number calculated through the ICLEI software, possibly because of the different calculation methods. Edgar & Associates report that the "net" result, which is emissions generated less carbon storage, is -12,258. The carbon storage amount is -33,595, so the actual emissions generated are 24,747 $MTCO_2e$. See PDF file, Appendix A_GHG Landfilling Transfer Tonnages.pdf

San Joaquin County has done no waste characterization studies since the state-wide study in 2003, so the Cascadia study was the best information available for waste stream information.

The percentages in the Cascadia study were applied to the 66,600 tons of waste that is landfilled, so that an assumed waste characterization embedded in the WARM model that is based on national averages isn't be relied on.

There is a difference between the tonnages reported by Tracy Delta for recyclables and landfilled waste and those that the city reported to the CIWMB as far as disposal and diversion.

In addition, the WARM model accounts for the energy used in the transfer of waste from the transfer station to the landfill, a distance of 20 miles. Due to modeling limitations, these trips are also counted in the transportation section.

[1] 2005 Tracy Urban Water Management Plan, page 13

**Disposal Tonnages**

Tracy Delta tracks the origin of all waste that passes through their facility. In 2006, total tons of outbound waste to the landfill was 104,885 and the amount originating in the City was 66,600 tons, meaning that 38,285 tons of landfilled waste managed by Tracy Delta originated outside of the City. The City of Tracy reported to the State that 92,202 tons were disposed in 2006, which is 25,602 tons greater than the 66,600. However, there is also waste that originates in the City that doesn't pass through the Tracy Delta facility and isn't hauled by Tracy Delta. For instance, individuals, landscapers, and construction companies may haul waste directly to the landfill themselves and those tonnages would not be known by Tracy Delta.

There is a State Disposal Reporting System that requires haulers and disposal facilities to report the tonnage of waste back to the jurisdiction of origin, so the City should have records of disposed waste by Tracy Delta and any other haulers. At the time this inventory was written, the City was not able to track down this information.

**Recyclables**

Tracy Delta collects garbage, recyclables and green waste in 3 separate containers. The weight of recyclables was 20,136 tons and green waste was 3,772 tons. For purposes of calculating greenhouse gas impacts, the green waste was assumed to lose half of its mass during composting.

**Fugitive Emissions/Refrigerants Methodology**

The ARB's source of data is the U.S. EPA Vintaging Model estimates for CFC, HCFC, HFC, Halon, and PFC emissions (attached). The national estimates to California's 12.5% share of population was scaled down. It was assumed that the per capita emissions in 2010 (estimated) would be about the same as those for 2006 or 2007.

For the large commercial refrigeration and AC systems (greater than 50 pounds charge of refrigerant), ARB's own methodology was used, as described in detail in Appendix B of the Initial Statement of Reasons of ARB's Refrigerant Management Plan (rule and appendices available on our website at: http://www.arb.ca.gov/cc/reftrack/reftrack.htm (go to "What's New"; click on that link, and scroll down to Appendix B "California Facilities and Greenhouse Gas Emissions Inventory".)

There was a discrepancy between the ICF estimates and ARB estimates of the fugitive emissions/refrigerants for the community analysis. This can be explained as followed:

ARB's per capita emissions included all sources of CFC, HCFC, HFC, Halon, and PFC emissions in California. ICF may be looking at HFC emissions only; as CFC and HCFC emissions are often not counted towards GHG inventories (CFC and HCFC are ODSs are supposed to be gradually eliminated through the Montreal Protocol, and therefore, are generally not counted towards GHG reduction goals). On the attached Vintaging Model spreadsheet, it is shown the HFC-only per capita emissions to be about 0.45 $MTCO_2e$ per Californian, which is closer to the ICF estimate of 0.36 $MTCO_2e$/person. When Refrigerant HFC emissions only are looked at, it is estimated to be 0.38 $MTCO_2e$/person, which is very close to the ICF estimate.

The methodology for estimating refrigerant emissions from large commercial refrigeration and AC systems is spelled out in great detail in Appendix B Initial Statement of Reasons for the Refrigerant Management Plan CARB will put forth for Board adoption December 9, 2009. All other sources (residential AC and appliances, insulating foam, consumer products, etc.) have been scaled down from national estimates based on the U.S. EPA Vintaging Model (data source: VM IO

File_V4_3.25.08.xls) A description of the methodology used in the U.S. EPA Vintaging Model can be found in EPA document 430-R-05-003 "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003". It's in Section 3.8, page 158 (available on US EPA website at http://epa.gov/climatechange/emissions/usgginv_archive.html.

If the methodology of the GHG inventory report calls for only HFCs from refrigerants, the most accurate per capita emissions to use are 0.36 to 0.38 MTCO2e/person (California average). To show HFC emissions from all sources (refrigerant plus non-refrigerant), use the estimate of 0.45 MTCO2e/person.

## Appendix B – CACP Reports by Sector, Data Sources, Assumptions and Notes for the Municipal Inventory

See PDF file, Appendix B_Tracy Government Operations CACP Reports.pdf

**Municipal Assumptions**

- The population and job growth did not account for the recent economic depression. This data assumes that the population and job growth rate will be consistent with past trends. The BAU forecasts do take into account the Growth Management Ordinance that limits the residential growth allotment and building permits per year. This inventory assumes the Ordinance will not be significantly modified in the near future.
- Fugitive emissions and refrigerants from non-municipal or municipal operations are not documented in the City of Tracy. This data was extrapolated from California Air Resources Board's refrigerant calculations on a per capita basis. It was assumed that the consumption per capita rate of emissions is the same throughout California.
- The City of Tracy's 2005 Urban Water Management Plan (UWMP) states that future water contracts with other water districts and retailers are possible. New energy emissions will need to be calculated for future sources of imported water.
- Forecasts are based on "business-as-usual" projections. This does not take into account future changes in federal and/or state regulations which address energy consumption and greenhouse gas emissions
- BAU forecasts also do not consider any change in the electricity grid emission factor. The emission factor will likely change in the future as utilities use more renewable energy and as power plants become more efficient. Lastly, it also doesn't consider adjustments to the per capita energy use; these may increase or decrease according to a mix of technology and behavior changes.

**Municipal Analysis Methodology**

All of the data for the municipal analysis was collected from the individual departments related to each sector. Town-Green spoke with employees in the Public Works dept, Planning dept, Public Utilities, Airport, Solid Waste, Economic Development, and Tracer (the public bus system). All of these departments supplied us with information regarding fuel consumption. Much of this data had to be calculated further in order to isolate the information demanded by the CACP software. Should ICF or DC&E have questions regarding how specific numbers were arrived at, please contact Town-Green.

**Methodology for calculating Embodied Emissions from Imported Water**

In addition to the groundwater that is drawn from within the City boundaries, currently there are 2 sources of imported water: Mendota Canal (Central Valley Project), and the South San Joaquin Irrigation District. All water distribution uses electrical energy.

**Delta Mendota Canal (DMC)**
Approximately 7,500 ac-ft of water per year moves from the Shasta Dam, which produces electricity, to the WAPA power plant, which is directed by the *Bureau of Reclamation*. The water delivery to WAPA and to the Tracy Processing Plant is via gravity and uses minimal electricity. At the processing plant, there is one 250-foot lift, which uses a significant amount of electricity. This treatment plant's energy consumption is accounted for in Tracy's municipal PG&E bill.

**South San Joaquin Irrigation District (SSJID)**
The water for SSJID originates from 3 dams, all which generate energy. The water flows by gravity to the Woodward Reservoir and then to the Nick deGroot water treatment plant. Here, there is electricity consumption. 2006 electricity data was not available, therefore, 2007 data was used for SSJID imported water. In 2007, Tracy was responsible for 1,958,581 KWh being used. The water pump in Lathrop, which sends water to Tracy, used 3,313 KWh. Tracy was responsible for 1,961,894 KWh from SSJID water distribution.

**Waste Water**
The Tracy Waste Water Treatment Plant processes approximately 8 million gallons/day of wastewater. The WWTP emits between 90-116,000 cubic feet/day of CH4

Methane emission Calculations:
1 million cu. ft. of natural gas = 18.91 tons liquid

Therefore the methane content of digester gas is 60% of natural gas so then 1 Mcuft = 0.6 x 18.91 = 11.4 tons liquid

In one year the Tracy WWTP generates 90,000 cu. ft. x 365 days = 32,850,000 cu. ft. or 32.85 Mcuft or 375 tons liquid. The methane is not released into the air, but is used to generate heat for the 2 digesters.

## Appendix C –Summary Report for the Community Emissions Forecast

See PDF file, Appendix C_2020 Tracy VMT Forecast Report.pdf, Appendix C_Tracy Refrigerant Forecast Worksheet.pdf, Appendix C_Tracy Forecast Builder.xls

**Community Forecast**
ICLEI recommended that we use their in-house forecast builder, rather than the forecast in the ICLEI software. The ICLEI software is limited in its prediction capabilities because PG&E does not predict the mix of energy types that will be used in the future, and therefore 2006 data was used in the forecasts. Please refer to the excel spreadsheet for the details of the Community Forecast for 2020 and 2050.

The data which Town-Green was required to input in the excel sheet is highlighted in red.

- The $CO_2e$ numbers for 2006 came from the CACP software summary reports.
- The population calculation for 2006, 2020, and 2050 came from the General Plan.
- The job count for 2006 came from the April 2009 Draft Supplemental EIR for the General Plan Amendment. Data from the General Plan was used to calculate the annual growth rate, and this growth rate was used to calculate the projection for 2020 and 2050.

**Transportation emission forecast**
Fehr & Peers calculated the forecast for 2020 and 2050 using the baseline data for 2006. Please refer to PDF file, Appendix C_2020 Tracy VMT Forecast Report.pdf

**Refrigerant emission forecast**
Glenn Gallagher from the Air Resources Board estimated the forecast for 2020 and 2050 based on the ARB's statewide per capita emission estimates. Please refer to PDF file, Appendix C_Tracy Refrigerant Forecast Worksheet.xls

The summary table breaks out emissions by ODS versus HFC. They are measured in metric tons of $CO_2e$.

California Per Capita CFC, HCFC, and HFC emissions (and HFO-1234yf substitute in 2050):

| Year | per capita total GHG emissions CFC, HCFC, HFC (MTCO2e) in CA | per capita HFC (Kyoto gas) MTCO2e only | per capita ODS (CFC + HCFC) MTCO2e | Note |
|---|---|---|---|---|
| 2007 | 1.121 | 0.413 | 0.707 | |
| 2020 | 1.147 | 0.891 | 0.256 | BAU |
| 2050 | 1.175 | 1.009 | 0.165 | BAU |
| 2050 | 0.330 | 0.168 | 0.162 | With HFC phase-out |

ARB used a one percent per year growth rate for pounds of material used and a 1.56% annual population growth rate. The 2020 proportion of materials used is from the US EPA Vintaging Model estimates.

The 2050 proportion of materials used is a little more hypothetical, even assuming business-as-usual. CFCs, HCFCs, and even HFC usage will largely go away, to be replaced by new refrigerants such as HFO-1234yf, which has a global warming potential of 4. It was assumed that in 2050, 80 % of refrigerant usage is HFO-1234yf, or a similar very low GWP refrigerant; and 20 % is still HFC-134a. Although it is not for certain that HFC usage will be limited after 2020, all signs point to HFC usage being severely limited after 2020 either through a US climate bill or HFC's inclusion as a Montreal Protocol refrigerant with a timetable for its gradual elimination.

# Appendix D – Summary Report for the Municipal Emissions Forecast

See PDF file: Appendix D_City Facilities Sq Ft 2009.pdf

**Municipal Forecast**

For reasons similar to the community analysis, the CACP software was not sufficient to forecast municipal $CO_2e$ emissions. ICLEI did not have a forecast builder for municipal operations, therefore Town-Green has been working with the City of Tracy and PG&E to predict energy emissions for 2020 and 2050. This information is pending while PG&E looks for requested data. Although it will be helpful for the City of Tracy to know the forecasted growth of municipal operations, this data will not make up a huge portion of Tracy's overall future emissions. The municipal operations account for less than 1% of Tracy's emissions, so the BAU forecasts most crucial to understand will be from the Community sectors.

**Water Delivery Emission Forecast**

The following calculations were based off of the 2005 UWMP's water forecasts for 2020. Year 2050 was calculated using a 9.21% increase every 5 years, as was seen in the forecast for 2020-2050.

| Year | Water Demand ac-ft/Year | Total KWh consumed | Total metric tons of $CO_2e$ emitted | Percent Increase from Base Year |
|---|---|---|---|---|
| 2020 | 23,900 | 4,402,830 | 1,012 | 2.87% |
| 2050 | 40,537 | 7,467,679 | 1,717 | 3.13% |

Water Demand forecasts:
Year 2020: 23,900 af-ft/year
Year 2050: 40,537.18 af-ft/year
KWh per ac-ft/year= 2005 total KWh (3,140,931 KWh: imported and local)/Total water for 2005 (17,050 ac-ft/yr) = 184.22 KWh/ac-ft per year.

2020 KWh=184.22 KWh/ac-ft*23,900 ac-ft=4,402,830 KWh
2020 BTUs=15,027
CO2e=1,012 metric tons
2050 KWH=184.22 KWh/ac-ft*40,537 ac-ft=7,467,679 KWh
2050 MBTUs=25,487
CO2e=1,717 metric tons

**APPENDIX D**

# QUANTIFIED SUSTAINABILITY MEASURES

## Appendix D Quantified Sustainability Measures

| | Actions | Activated By | Estimated Total CO2e Metric Tons Emissions Reductions | Percentage of Needed Emissions Reductions | Cost Per Metric Ton of Reduced CO2e Emissions | Reduce GHG Emissions | Conserve Energy | Increase Renewable Energy | Reduce VMT | Improve Air Quality | Reduce Waste | Conserve Water | Increase Jobs | Conserve Biological Resources | Foster Public Awareness of Sustainability | Improve Public Health | Attract and Retain Business | Retain and Increase Amount of Affordable Housing | Decrease City Facilities Costs | Estimated New Costs to City | Developer/Resident Costs or Burden | Estimated Return On Investment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Energy** | | | | | | | | | | | | | | | | | | | | | | |
| **E-1** | Green Building Ordinance | Ordinance (DES, PW, ED) | 2,485 | 0.49% | $40.24 | ● | ○ | ○ | ○ | | ○ | | ○ | | | | | | | | Ranges from $50,000 to $100,000 in consulting services. | N/A | Estimated savings = $295/home. Simple Payback = 17 years for residential or 3.2 years commercial |
| **E-2** | Energy Efficiency in Site Planning and Design | Ordinance and Program (DES) | 11,752 | 2.32% | $0.00 | ● | ○ | | | | | | | | | | | | | Incidental costs; existing staff time. | $0.06/sqft | Annual cost savings estimated at $1,980,815. Payback is estimated at 0.1 year |
| **E-3** | Green Building and Energy Efficiency Design and Education | Program (DES, PW) | 10,781 | 2.13% | $1.86 | ● | ○ | ○ | ○ | | ○ | ○ | | | ○ | | | | | Approximately $20,000 in consulting services. | $4.00/sqft | Annual cost savings estimated at $6.2 million dollars per year. Payback is estimated at 4.3 years |
| **E-4** | Energy-Efficient Products and Retrofits | Program (PW) | 36,768 | 7.25% | $0.00 | ● | ○ | ○ | ○ | | ○ | | ○ | | ○ | | | | | Incidental costs; existing staff time. | $1.50/sqft | Payback time estimated at 4.8 years |
| **E-5** | Weatherization for Low-Income Households | Program (ED) | 473 | 0.09% | $0.00 | ● | ○ | | | | | | | | ○ | | | ○ | | Incidental costs; existing staff time (existing program). | | Annual cost savings per home estimated at $491. Payback time = 14.3 years |
| **E-6** | Financing for Energy Efficiency and Renewable Energy Projects | Program (FAO) | 8,789 | 1.73% | $1.71 | ● | ○ | ○ | | | | | | | | | | | | $15,000 for Tracy to join the California First Statewide 811 program. | N/A | N/A |
| **E-7** | LED Retrofits for City Street Lights | Program (PW) | 337 | 0.07% | $6,252.23 | ● | ○ | | | | | | | | | | | | ○ | $2,107,000 to convert 3,500 streetlights to LED, based on incremental cost of $602 per LED streetlight | N/A | Annual cost savings = $147,840. Payback time = 14.3 years |
| **E-8** | Solar Panel Installations on Municipal Facilities | Program (PW) | 34 | 0.01% | $29,411.76 | ● | ○ | ○ | | | | | ○ | | | | | | ○ | Between $350,000 and $1,000,000 to install 100 kW of solar panels, based on estimate of $3.50 to $10.00 per installed watt of solar power | N/A | Payback time estimated at 35 years, based on the current cost of solar panels |
| **E-9** | Energy Efficiency Settings for City Desktop Computers | Policy (FAO) | 5 | 0.00% | $0.00 | ● | ○ | | | | | | | | | | | | ○ | Incidental costs; existing staff time | N/A | N/A |
| | External State Title 24 Standards | | 16,926 | 3.34% | | | | | | | | | | | | | | | | | | |
| | External State Renewable Portfolios Standard | | 44,034 | 8.68% | | | | | | | | | | | | | | | | | | |
| | **Energy SUBTOTALS** | | **132,384** | **26.10%** | | | | | | | | | | | | | | | | | | |
| **Transportation and Land Use** | | | | | | | | | | | | | | | | | | | | | | |
| **T-1** | Live-Work and Work-Live Uses | Ordinance (DES) | 292 | 0.06% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; 40 hours of existing staff time. | N/A | Increased business/ sales tax |
| **T-2** | Reduced Parking Requirements | Ordinance (DES) | 146 | 0.03% | $1,095.89 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; existing staff time. | N/A | Decreased SF of impervious surface; reduced "heat island" load on AC |
| **T-3** | Support for Bicycling | Ordinance and Program (DES) | 139 | 0.03% | $0.00 | ● | | | ○ | ○ | | | | | | ○ | | | | Incidental costs; 20 hours existing staff time for bicycle parking. For bicycle sharing program, $80,000 in capital costs, plus $40,000 annually in operating costs. Assumes fleet of 20 bikes and 3 docking stations located in downtown. | $300 per bike cost to install at time of construction | Potential for reduced parking. Bike sharing revenues and advertising can offset up to 80% operating costs. |
| **T-4** | Support for Transit | Ordinance, Program, and Infrastructure Master Plan (PCS) | 1,248 | 0.25% | $0.00 | ● | | | ○ | ○ | | | | | ○ | | ○ | | | Incidental costs; 150 hours existing staff time (existing programs and outside transit funding) | $5,000 to $8,000 per shelter cost at time of construction | Potential for reduced parking. Increased business/sales tax. Transit funding dependent. Transit funding dependent. |
| **T-5** | Smart Growth, Urban Design and Planning | Ordinance, Program, and Infrastructure Master Plan (DES) | 14,377 | 2.83% | $0.00 | ● | | | ○ | ○ | | | | | | ○ | | | | Incidental costs; 180 hours existing staff time. | $500 per cul-de-sac. $6 per square foot of new sidewalk. | Decreased SF of impervious surface; reduced "heat island" load on AC. potential for reduced parking. |
| **T-6** | Traffic Smoothing Through Congestion Management | Program and Infrastructure Master Plan (DES) | 77 | 0.02% | $649.35 | ● | | | | ○ | | | | | | | | | | $50,000 for engineering; 40 hours existing staff time | | |
| **T-7** | San Joaquin County Park and Ride Lot Master Plan Implementation | Program and Infrastructure Master Plan (PCS, DES) | 226 | 0.04% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs (will use County or CMA funds); 160 hours existing staff time | | Potential for parking fees |
| **T-8** | Alternative Transportation Choices for Students | Program (PCS, DES) | 529 | 0.10% | $0.00 | ● | | | ○ | ○ | | | | | | ○ | | | | Incidental costs; existing staff time (existing program). Incidental costs; 80 hours existing staff time (outside funding) | | Longer term reduction in school parking and bus transit |
| **T-9** | Car-Share Program | Program (PCS) | 1,661 | 0.33% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; 40 hours existing staff time. | | Potential for reduced parking |
| **T-10** | Comprehensive Signal Coordination Program | Program (DES) | 675 | 0.13% | $0.00 | ● | | | | ○ | | | | | | | | | | Incidental costs; existing staff time (existing program). | | |
| **T-11** | Ramp Metering on Interstate 205 | Program (DES) | 113 | 0.02% | $0.00 | ● | | | | ○ | | | | | | | | | | Incidental costs; existing staff time (Caltrans funding). | | |
| **T-12** | Increased Transit to Bay Area Cities and San Joaquin Valley Employment Centers | Program (PCS) | 51 | 0.01% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; existing staff time (transit funding). | | |
| **T-13** | Altamont Route Approval and Transit-Oriented Development Around Rail | Program (DES, PCS) | 1,146 | 0.23% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; existing staff time (transit funding). | | Increased real estate investment; long term reduction in highway infra-structure |
| **T-14** | Reduce Commute Trips | Program (PCS, DES) | 26,993 | 5.32% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; existing staff time | | Potential for reduced parking |
| **T-15** | Parking Cash-Out Programs for Employees | Program (ED) | 135 | 0.03% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; 60 hours existing staff time | | Potential for reduced parking |

## Appendix D Quantified Sustainability Measures

| | Actions | Activated By | Estimated Total CO2e Metric Tons Emissions Reductions | Percentage of Needed Emissions Reductions | Cost Per Metric Ton of Reduced CO2e Emissions | Reduce GHG Emissions | Conserve Energy | Increase Renewable Energy | Reduce VMT | Improve Air Quality | Reduce Waste | Conserve Water | Increase Jobs | Conserve Biological Resources | Foster Public Awareness of Sustainability | Improve Public Health | Attract and Retain Business | Retain and Increase Amount of Affordable Housing | Decrease City Facilities Costs | Estimated New Costs to City | Developer/Resident Costs or Burden | Estimated Return On Investment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **T-16** | Reduced Commuting from Out of the Region | Program (ED, DES) | 223 | 0.04% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; 120 hours existing staff time | | Increased business and sales tax |
| **T-17** | Transit Passes for Residents And Employees of New Developments | Ordinance (PCS) | 292 | 0.06% | $0.00 | ● | | | ○ | ○ | | | | | | | | | | Incidental costs; existing staff time. | | |
| **T-18** | Increased Use of Low Carbon Fueled Vehicles | Ordinance, Program, and Policy (DES, PW) | 3,832 | 0.76% | $1,826.72 | ● | | | | ○ | | | | | | | | | | Approximately $7 million | | Cost/benefit increases as oil prices rise, |
| **T-19** | Carbon Sequestration on Municipal Property | Program (PCS, PW) | 132 | 0.03% | $3,000.00 (excluding | ● | ○ | | | | | | | ○ | | | | | | $396,000 in capital costs; assumes 33 acres of tree planting. | | 1-10 years |
| **T-20** | Mixed-Use and Traditional Residential Development | Policy (DES) | 73 | 0.01% | $0.00 | ● | | | ○ | ○ | | | | | | ○ | | ○ | | Incidental costs; existing staff time | | Increased real estate investment; increased business/ sales tax |
| **T-21** | Employment-Generating and High-Density Infill Projects | Program, Policy, and Ordinance (DES) | 4,800 | 0.95% | $0.00 | ● | | | ○ | ○ | | | | ○ | | ○ | | ○ | | Incidental costs; existing staff time | | Increased real estate investment; increased business/ sales tax |
| **T-22**[a] | Compressed Natural Gas Buses for the City's Fleet[a] | Program (PCS) | 1,168 | 0.23% | $0.00 | ● | | | | ○ | | | | | | | | | | Incidental costs; existing staff time (existing program) | | Depends on fuel prices |
| | External State Measures That Improve Fuel and Vehicle Efficiency[b] | | 91,889 to 195,582 | 18.12% to 38.56% | | | | | | | | | | | | | | | | | | |
| | **Transportation SUBTOTALS** | | **149,049 to 252,742** | **29.39% to 49.83%** | | | | | | | | | | | | | | | | | | |
| | **Solid Waste** | | | | | | | | | | | | | | | | | | | | | |
| **SW-1** | Diversion of Construction Waste from Landfills | Ordinance (PW) | 1,321 | 0.26% | $0.00 | ● | | | | | ○ | | ○ | | | | | | | Incidental costs; existing staff time | Costs uncertain but related to construct debris hauling services and/or increased distances for waste removal | unknown |
| **SW-2** | Increased Recycling | Program (PW) | 73,746 | 14.54% | $0.04 | ● | | | | | ○ | | ○ | | ○ | | | | | Incidental costs; existing staff time (Tracy Delta Solid Waste Management program), plus $3,000 to train existing employees | | unknown |
| **SW-3** | Recycling Service for Multi-Family Housing | Program (PW) | 23,544 | 4.64% | $0.00 | ● | | | | | ○ | | ○ | | | | | | | Incidental costs; existing staff time (Tracy Delta Solid Waste Management program) | | |
| **SW-4** | Municipal Recycling and Reuse | Policy (PW, CMO) | 78 | 0.02% | $0.00 | ● | | | | | ○ | | | | | | | | | Incidental costs; existing staff time | | |
| | **Solid Waste SUBTOTALS** | | **98,689** | **19.46%** | | | | | | | | | | | | | | | | | | |
| | **Water** | | | | | | | | | | | | | | | | | | | | | |
| **W-1** | Potable Water Conservation through Development Standards, Public Education, and Municipal Wastewater Reuse | Ordinance, Program, and Infrastructure Master Plan (PW, DES) | 186 | 0.04% | $0.00 | ● | | | | | | ○ | | | | | | | | Incidental costs; existing staff time | | |
| **W-2** | Water Efficient Landscape Ordinance | Ordinance and Program (PW, DES) | 937 | 0.18% | $4.27 | ● | ○ | | | | | ○ | | | | | | | | Incidental costs; existing staff time. | | Annual citywide cost savings for this program are estimated at $2.5 million dollars. Payback time is estimated at less than 1 year |
| **W-3** | Incentives for Water Efficiency Retrofits | Ordinance (PW) | 1,131 | 0.22% | $0.00 | ● | ○ | | | | | ○ | | | | | | | | Incidental costs; existing staff time | Low Flow toilets, faucets and shower heads are estimated to cost $448, $8 and $29 respectively. | Payback time for shower heads and faucets is on the order of 1-2 years. Payback time for toilets is on the order of 60 years. |
| **W-4** | Water Conservation Pricing | Program (PW) | 46 | 0.01% | N/A | ● | ○ | | | | | ○ | | | | | | | | Incidental costs; existing staff time | | N/A |
| | **Water SUBTOTALS** | | **2,300** | **0.45%** | | | | | | | | | | | | | | | | | | |
| | | | **Estimated Total Tons of CO2e Reduction** | **Total Percentage Reduction to Target** | **Target reduction calculated by finding 29% of total 2020 BAU CO2e; (1,748,970 Metric Tons CO2e) x 29%= 507,201 Metric Tons CO2e.** | | | | | | | | | | | | | | | | | |
| | **GRAND TOTAL** | | **382,422 to 486,115** | **75.4% to 95.84%** | | | | | | | | | | | | | | | | | | |

**Footnotes**

[a]The GHG emissions reduction for this measure has already accounted for in the 2006 emissions inventory, and is therefore not included in the total emissions reduction calculation in the SAP.

[b]Modeling results provided a range for the benefits of these external State measures; see Chapter 5 of the Sustainability Action Plan for more information.

Note: Gray-shaded rows are State-level external measures that will happen regardless of the City's Sustainability Action Plan. These State-level measures will contribute to the GHG emission reduction in Tracy.