DRAFT ENVIRONMENTAL IMPACT REPORT

WEST LATHROP SPECIFIC PLAN

Prepared for the

CITY OF LATHROP

by

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TABLE OF CONTENTS

LIST OF TABLES

List of Tables, Continued

LIST OF FIGURES

List of Figures, Continued

LIST OF APPENDIXES

PART I

INTRODUCTION AND EXECUTIVE SUMMARY

PROPOSED PROJECT REQUIRING ENVIRONMENTAL ANALYSIS

The proposed "project" is the West Lathrop Specific Plan prepared for the areas which lay west of Interstate 5 known as Mossdale Village and Stewart Tract, as shown on Figure I-1. The project proposes development on approximately 6,955 acres consistent with the Lathrop General Plan. For Stewart Tract, proposed development involves a large-scale destination resort, centered on several theme parks, on 5,794 acres. For Mossdale Village, proposed development involves a residential "village" on either side of the westerly extension of Louise Avenue (to be named Gold Rush Blvd.), extending south to the I-5 crossing of the San Joaquin River, on 1,161 acres. A complete description of the project is provided in Part II. In addition, a list of agencies which will use this EIR for various permitting purposes is included at the end of Part I.

FOCUS PROVIDED

Review of the Initial Study, responses to the Notice of Preparation issued by the City of Lathrop, and the results of a scoping session sponsored by the Governor's Office of Planning and Research indicated the need for focus on the following impact topics which are discussed in Parts IV and V:

1. **Land Resources**, including compaction and overcovering of soils, seismic hazards, agricultural land conversion and sand deposits of regional significance.

2. **Water Resources**, including water supply, wastewater management, drainage and flood control.

3. **Biological Resources**, including fish and wildlife, vegetation, wetlands and watercourses.

4. **Public Services and Utilities**, including schools, parks, recreation facilities, city offices, and civic, cultural, fire and police services and facilities.

5. **Municipal Utility and Energy Services**, including water treatment and distribution, liquid waste management, solid waste management and co-generation of electrical energy.

6. **Noise**, including noise generated by specialized facilities.

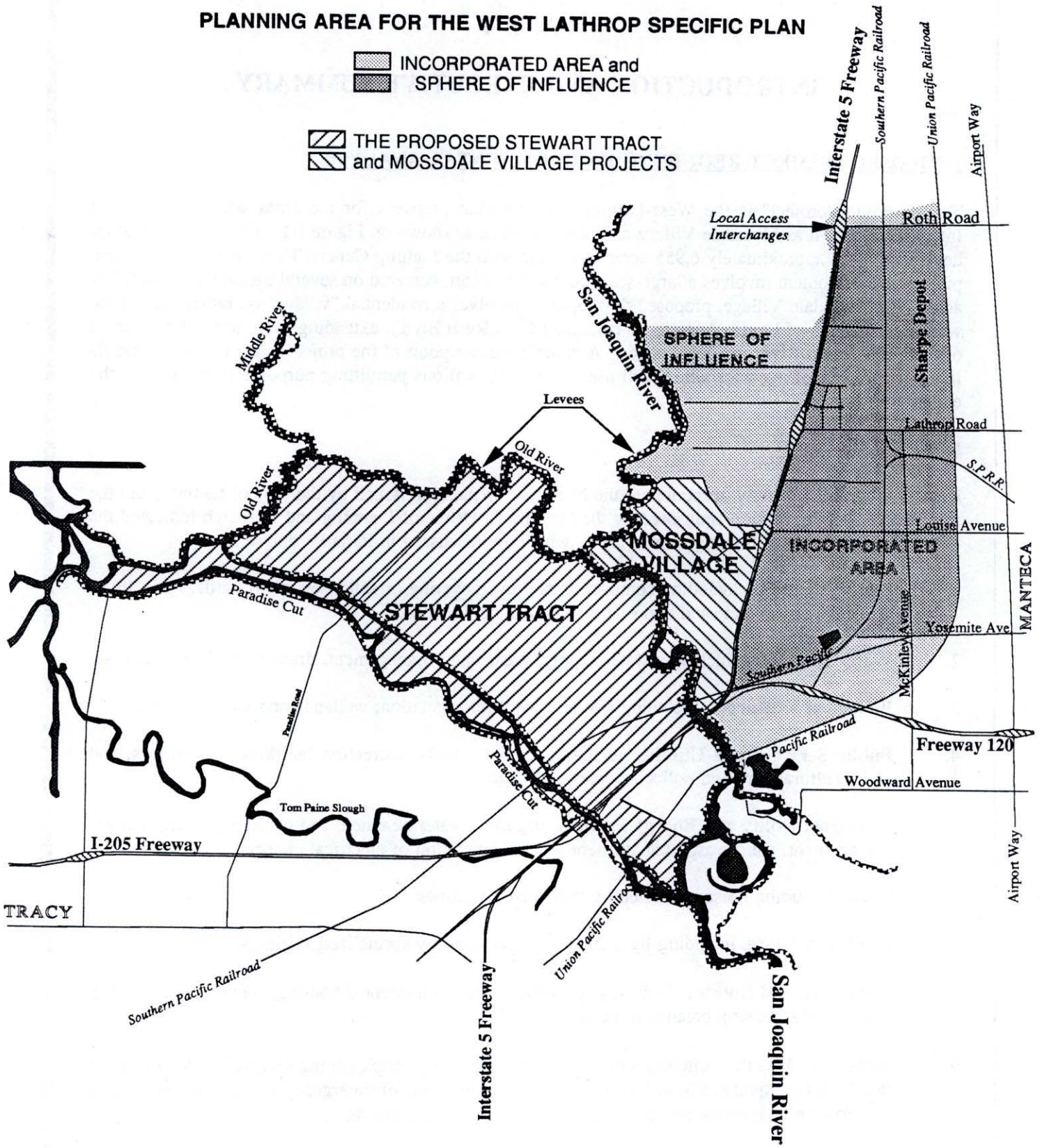
7. **Light and Glare**, including light and glare generated by specialized facilities.

8. **Population and Housing**, including specialized recreation-oriented housing, conventional housing, and the jobs-housing balance to be created.

9. **Safety and Health**, including requirements for protecting people during emergency conditions of flooding, earthquake, fire and explosion, for the provision of emergency medical treatment and for crowd management and evacuation under perilous conditions.

10. **Urban Design and Scenic Quality**, including the visual quality of the urban environment and the protection of scenic resources.

FIGURE I-1


PLANNING AREA FOR THE WEST LATHROP SPECIFIC PLAN
INCORPORATED AREA and SPHERE OF INFLUENCE
THE PROPOSED STEWART TRACT and MOSSDALE VILLAGE PROJECTS
Interstate 5 Freeway
Southern Pacific Railroad
Union Pacific Railroad
Airport Way
Local Access Interchanges
Roth Road
Sharpe Depot
SPHERE OF INFLUENCE
San Joaquin River
Middle River
Levees
Old River
Old River
Lathrop Road
S.P.R.R.
Louise Avenue
MOSSDALE VILLAGE
INCORPORATED AREA
MANTECA
Paradise Cut
STEWART TRACT
Yosemite Ave
McKinley Avenue
Southern Pacific
Paradise Road
Paradise Cut
Pacific Railroad
Freeway 120
Woodward Avenue
Tom Paine Slough
I-205 Freeway
Airport Way
TRACY
Southern Pacific Railroad
Interstate 5 Freeway
Union Pacific Railroad
San Joaquin River

11. **Cultural Resources**, including Native American archaeological finds of significance and historical structures.

12. **Impacts on Other Cities and the County of San Joaquin**, including sphere of influence boundaries, traffic and infrastructure planning.

13. **Transportation, Circulation and Traffic**, including assumptions underlying analysis, freeways and interchanges, expressways, arterial and collector streets, air transportation, transit, and bicycle and pedestrian corridors.

14. **Air Quality**, including construction impacts and operational impacts.

AN ESSENTIAL PERSPECTIVE

The Value of Previous Environmental Assessment

This EIR takes into consideration the fact that policies and proposals of the Lathrop General Plan have already stood the test of environmental analysis. To the extent that such policies and proposals remain essentially unchanged, further analysis would not typically be required. However, the breadth and depth of development proposed by the West Lathrop Specific Plan is of such magnitude and complexity that fresh environmental analysis was determined to be necessary.

Differing Time Frames of Specific Plan Buildout for Environmental Analysis

The time frame of the Specific Plan differs with respect to the time when buildout is envisioned for Mossdale Village as compared to Stewart Tract. Buildout of Mossdale Village is expected over a 15 year period to the year 2010. However, buildout for Stewart Tract is not expected for perhaps 30 years to the year 2025. These different periods of buildout introduce different conditions for environmental assessment, impact mitigation and mitigation monitoring. As a consequence, the description of impacts and required mitigation is separated with respect to Mossdale Village and Stewart Tract in the discussion provided in Parts IV and V.

Mitigating Environmental Impacts Through Specific Plan Policies and Proposals

By its very nature, the Specific Plan seeks to enhance the quality of the environment while accommodating additional population and urban expansion. To the extent that it achieves these objectives, its policies and proposals in many cases serve to mitigate potential adverse impacts before the fact of urban development. Impact and mitigation analysis was in preparation concurrently with the drafting of the Specific Plan so that the Plan would anticipate the need for and encompass policies and proposals intended to avoid adverse environmental impacts where possible and to reduce other impacts to levels that are acceptable in keeping with the intent of CEQA. The contribution of the Project's policies and proposals toward impact avoidance and mitigation is of such importance that it is described separately in Part IV of this document.

The Specific Plan has been prepared faithful to the policy and mitigation requirements of the General Plan and General Plan EIR. Those requirements provide an essential framework for the more detailed description of development proposed by the Specific Plan. General Plan policies in themselves were developed after the completion of important baseline studies of land, water, biological, cultural and air resources, and of the noise and transportation/traffic environments. The sources and relationships of

mitigation that have contributed to the preparation of this EIR are shown on Figure IV-1 [see page IV-2 of this document]

SUMMARY OF SIGNIFICANT UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The **significant unavoidable adverse impacts** which cannot be mitigated to insignificance based on a "worst-case" analysis of future conditions under Project implementation are:

1. An incremental annual increase over 20-30 years in the consumption of nearly 7,000 acres for urban use, of which about 5,800 acres is productive agricultural land. This land is to be designated as Prime Land under the State's Farmland Mapping Program, and its loss will be irreversible. While the total annual value of the loss of field crops and orchards involved is minor as compared to total County losses that can be expected over the same time period from such conversion, the cumulative impact becomes significant over time.

2. An incremental increase in the annual quantities of vehicle and stationary emissions of air pollutants released to the atmosphere each year as vehicle traffic increases and the number of new industries increase. Under worst-case conditions, annual emissions of Carbon Monoxide from vehicle sources, and from Nitrogen Dioxide and Total Organics would add significantly to an already serious problem of air quality within San Joaquin County and the eight county San Joaquin Valley Air Basin.

3. An incremental increase in the amount of light and glare (long term sky glare) as development within the entire community, and particularly within Stewart Tract occurs. The total amount of sky glare produced by future development within the planning area will be highly noticeable miles from Lathrop as compared to existing conditions.

4. The continuing growth in regional traffic on the freeway system that cannot be mitigated solely by measures designed to mitigate impacts of project-generated traffic.

5. Adverse impacts resulting from a major seismic event could occur which cannot be wholly prevented by Project design and construction. A levee breach causing large sections of Stewart Tract or Mossdale Village to flood is an example.

6. The impacts of flooding could be substantial under conditions greater than a 100 year flood event.

The Lathrop City Council acting as Lead Agency must issue a "statement of overriding considerations" under Section 15093 of State CEQA Guidelines (as amended) if the Project is approved.

SUMMARY OF SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS REDUCED OR AVOIDED THROUGH POLICIES AND PROPOSALS OF THE SPECIFIC PLAN [see Part IV for discussion of the following topics]

1. Impacts of compaction and overcovering of soils.
2. Impacts under adverse seismic, rainfall and flooding conditions on levee soils.
3. Impacts on foundation soils.
4. Impacts of seismic hazards.
5. Impacts on municipal and industrial water supply.
6. Impacts of surface water drainage.
7. Impacts of flooding under conditions of a 100 year flood event.

8. Impacts on the foraging and nesting habitat of the Swainson's Hawk.
9. Impacts on the fishery of the San Joaquin River and tributaries in proximity to the planning area.
10. Impacts on riparian vegetation, wetlands and watercourses.
11. Impacts of project-generated traffic on the regional freeway system.
12. Impacts on existing and planned freeway interchanges.
13. Impacts of project-generated traffic on the local road systems.
14. Impacts of project-generated mobile and stationary source emissions on local air quality.
15. Impacts of freeway and railroad generated noise on residential development.
16. Impacts of commercial recreation center noise on residential development.
17. Impacts on solid waste generation and management.
18. Impacts on electrical distribution facilities.
19. Impacts on safety and health
20. Impacts on archaeological and cultural resources.

SUMMARY OF SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS THAT FEASIBLY CAN BE MITIGATED OR AVOIDED

Compaction and Overcovering of Soils

Extensive overcovering and compaction of the soil will occur throughout the planning area which will significantly increase surface water runoff and the extent to which soil erosion may occur during construction activities. Some native soil conditions on lands west of the San Joaquin River on Stewart Tract are subject to foundation failures caused by liquefaction during a severe earthquake. A combination of soil type, high water table and potential for flooding also introduce limitations to soil compaction for building foundations and street construction.

Mitigation Measures:

1. A requirement for drainage to acceptable locations for disposal.
2 Employment of dust control measures through construction management; use of hydro mulching or other adequate types of erosion control on slopes required for development.
3. A requirement for soils and foundation engineering to assure reliable foundations for structures. Such a requirement has been found to be feasible as the result of baseline studies completed during Specific Plan preparation.

Premature Agricultural Land Conversion and Urban-Agricultural Conflicts

The pattern of urbanization west of Interstate 5 within Mossdale Village and Stewart Tract could unnecessarily result in the premature conversion of agricultural land to urban use or create urban-agricultural conflicts at the line of interface between urban land and farmland. To illustrate, assuming a fairly even pace of buildout, the incremental loss of agricultural lands would occur at an average annual rate of about 200 acres over 30 years.

Mitigation Measures:

1. Land use policies of the Specific Plan call for the phasing of development of agricultural lands in such a manner as to avoid the fracturing or fragmentation of the urban pattern and to assure a gradual conversion of agricultural lands extending outward from the existing urban pattern.
2. Urban-agricultural conflicts can be minimized by maintaining temporary open space corridors between the advancing line of urbanization and the receding line of agricultural operations.

The results of this on-going analysis will be incorporated into the development engineering that will be required for first phase development of Stewart Tract and Mossdale Village. At this point, environmental concern is focused on the type and size of wastewater management system(s) that will be most appropriate for development under the West Lathrop Specific Plan, regardless of treatment facility location. A site capable of serving all of West Lathrop is being considered for planning purposes at the southeast corner of Stewart Tract, east of the I-5/SR 120/I-205 merge along the San Joaquin River (Site 4). This site is in fact part of the Specific Plan proposal, with alternative land use configurations also being proposed under the Specific Plan if the plant is located elsewhere.

Drainage and Flood Control

Surface water drainage from streets and other paved surfaces will contain petroleum distillates, grease and chemicals that can degrade the quality of receiving waters of the San Joaquin River and its tributaries. Flooding of the Stewart Tract that occurs during periods of heavy rainfall, or that could occur from a break in the levee system, has the potential for serious damage to property and personal injury. Areas where underground water combines with loose soils pose serious hazards to urbanization.

Mitigation Measures:

1. Systems needed to remove hydrocarbon and other contaminants from surface drainage water prior to disposal to watercourses are to be installed prior to occupancy of project areas under development. A capability for on-going monitoring of the system(s) will be required.
2. The potential for flooding of the Stewart Tract requires that levees be reconstructed and strengthened to standards of the Corps of Engineers as has already been accomplished for the levee along the east bank of the San Joaquin River. Affected levees will be those along Old River, the west bank of the San Joaquin River and Paradise Cut which may require reconstruction around the entire Tract to carry out land use proposals of the Specific Plan. [see measure 3, below].
3. In connection with and in addition to Measure 2, above, a variety of approaches to flood-proofing have been considered which are incorporated into the Specific Plan. They include the use of on-site detention basins having multi-use as wildlife habitat, golf courses and lakes, the super-elevation of areas of population concentration above flood levels, and the super-elevation of open space corridors in proximity to areas of resident and visitor concentrations.

Lake Management

The Project proposes an interconnected system of lakes on Stewart Tract to be used for on-site transportation, aesthetics, wildlife habitat, water sports, surface water management, flood control and storage for emergency fire flow. Potential problems associated with these beneficial uses include inadequate design and management of the lake system, causing problems of water quality, safety and hazards to public health such as algal bloom (eutrophication), stagnant water and vector control (insect abatement), bacteria concentration, unsightly visual characteristics, and adverse effects downstream on fisheries and the quality of water used for agricultural and open space irrigation. Nutrients, sediments and various contaminants and pollutants may enter in-flowing water, giving rise to several of the problems listed. A potential also exists for an incompatibility of lake functions.

Mitigation Measures:

[S] The lake system is to be designed and managed to avoid the kinds of problems listed above. Some of the more important measures that may be required include, but are not limited to: automatic aeration and/or frequent flushing; the use of automatic equipment to maintain appropriate lake elevations; lake sealing; the use of electrically powered boats at reduced speeds; and aquatic vegetation management to meet State and EPA standards.

Biological Resources

Fish and Wildlife:

Baseline studies and information provided in Parts III, IV and V of this document indicate that the Swainson's hawk habitat will be adversely affected by development of Stewart Tract and Mossdale Village. The principal impact will be the loss of foraging habitat, the possible abandonment of nesting territories, and relocation of the hawk to other suitable habitat if available. If suitable nesting territories are not available to support relocation in relation to other hawk territories, then a net loss in the hawk population could result which would further exacerbate the condition of the hawk as a threatened species.

Because of the possibility that other rare, endangered or threatened species of fish and wildlife exist within the Planning Area, which were not observed during field surveys conducted in February/April, 1991, extensive baseline studies were conducted in the field along with special studies of the potential for habitat of the Riparian Brush Rabbit, the Riparian Woodrat and Kit Fox. None of these species were observed.

The fisheries of the San Joaquin River and its proximate tributaries were also examined and analyzed. These fisheries may be threatened by the potential for contamination of waters by urban runoff and up-stream agricultural drainage.

Mitigation Measures:

1. The City will adopt a Habitat Management Plan (HMP) prepared during preparation of the Specific Plan which provides for the phased implementation of the HMP as development is approved and before development occurs. This approach can allow for reasonable urban expansion while retaining Swainson's hawk populations into perpetuity.
2. Proposals of the Specific Plan call for habitat retention and habitat enhancement to deal with known and as yet unknown sensitive species of plants and animals. However, additional biological field surveys conducted to State and Federal standards as part of the Specific Plan preparation process indicate that no other sensitive species are present on the Project site.
3. The quality of river waters is to be protected from urban runoff by the collection and disposal of potential contaminants prior to surface water disposal to the San Joaquin River or its tributaries. The protection of river water from upstream contamination by agricultural drainage requires control by the Regional and State Water Quality Control Boards.

Riparian Vegetation, Wetlands and Watercourses:

Riparian vegetation, wetlands and watercourses are potentially threatened by the prospect of urbanization.

Mitigation Measures:

Policies of the General Plan and Specific Plan call for the protection and enhancement of riparian vegetation, existing wetlands and watercourses, and the creation of new wetlands for wildfowl management through the ponding and distribution of properly treated wastewater from wastewater treatment facilities to be constructed to serve urban development within Stewart Tract.

Fisheries:

Fisheries existent in the waters of the San Joaquin River and its tributaries could be adversely affected by the contamination of these watercourses as the result of urbanization.

Mitigation Measures:

Mitigation measures include the removal of surface water contaminants, sediment and debris before drainage to watercourses, protection of the Chinook Salmon run and other sensitive species, maintenance and enhancement of water quality, fish salvaging, screening of water diversions, the strengthening of Project levees, careful construction and operation of marina facilities, and appropriate levee bank maintenance.

Noise Effects

Noise from freeways already adversely affects the residential environment immediately east of Interstate 5, and has the potential for exceeding standards of exterior noise in planned residential areas of Mossdale Village and Stewart Tract. Similarly, railroad noise has the potential for adverse impact on residential areas planned along the west side of the S.P. Railroad within Stewart Tract.

Mitigation Measures:

1. Require noise attenuation for freeway and railroad-generated exterior noise to meet State noise standards, including use of commercial buildings as noise buffers, and sound walls and/or landscaped berms as appropriate.

2. Require interior noise attenuation through building construction as a means to mitigate excessive railroad-generated noise.

3. Require noise attenuation as required by State standards for commercial and industrial operations.

4. Plan for the accommodation of uses along freeways wherever possible which are not sensitive to traffic-generated noise.

Light and Glare

A potential exists for adverse effects of neon and area lighting in Stewart Tract commercial centers on residential development directly east of the San Joaquin River. The worst impacts would be from the "bounce" effect of commercial center lighting during nights of low overcast or fog. A potential also exists for adverse effects of lights from traffic on residential areas adjacent to the planned Gold Valley Parkway and Gold Rush Blvd. expressways providing access to Stewart Tract.

Mitigation Measures:

1. Mitigation of direct off-site glare can be achieved in part through the hooding of exterior commercial lighting, and especially that lighting mounted high on building walls, poles, roofs and commercial recreation equipment and facilities.

2. Light generated by freeway and expressway traffic can be mitigated considerably by heavy tree and high shrub landscaping along the outside edge of transportation corridors adjacent to residential development. Residential lots which back onto such corridors will aid in this objective.

Land Use, Population and Housing:

Impacts and mitigation measures associated with land use patterns and the magnitude and distribution of population and housing envisioned by the Specific Plan are functions of other topics analyzed as part of the Specific Plan and this EIR.

Public, Municipal Utility and Energy Services

The impacts on public utility systems will be those which generate the need for new or expanded gas, electrical, telephone, and cable service lines and appurtenant facilities. The demand for energy will be sufficiently great to require the installation of new and altered electrical distribution facilities which provide service to the planning area.

Solid waste management will become a major requirement of service to the urban area, with considerable truck traffic to be generated under conventional means of pickup and disposal.

School services will be affected substantially, with requirements for as many as six elementary schools and one high school, involving three separate school districts. Schools will be needed at or close to the time of that type of housing occupancy which generates school-age children.

Mitigation Measures:

1. All gas, electrical, telephone and cable distribution lines are to be placed underground.
2. A highly efficient system of solid waste pickup, hauling and disposal will be required, including a major diversion to recycling, because of the significant solid waste generation expected from large-scale commercial and residential use.
3. The Specific Plan calls for fair-share financing of school facilities generated by new development, in addition to the school impact fee structure already in place. The School District and City should develop an equitable formula for levying fees to off-set costs of land acquisition and core school facilities which are not covered by the school impact fee structure already in place.

Safety and Health

Any natural or man-made disaster, whether by fire, flood, explosion or earthquake, has the potential for jeopardizing the safety of thousands of people concentrated on Stewart Tract.

Mitigation Measures:

1. An emergency response and evacuation plan is to be in place and operational prior to the opening of any commercial recreation attractions, lodging and housing facilities to public use.

2. Stewart Tract is to be graded to provide large areas that are elevated to provide "safe ground" for people needing areas of temporary safety.

Archaeological and Cultural Resources

Known archaeological and cultural resources could be inadvertently damaged through the development process. It is possible that archaeological and cultural resources that have not been found and mapped may be unearthed during the construction process and become damaged or lost.

Mitigation Measures:

1. Mitigation against the potential loss of known archaeological and cultural resources can be avoided at the time of development application in accordance with the procedures of CEQA Guidelines, Appendix K. Locations cannot be made known to the general public if vandalism of important finds is to be avoided. The alternatives for development design in areas of known resources must be reviewed by Native Americans having competence in understanding the importance of the resources and of the desired methods to assure their preservation.
2. Mitigation against the potential loss of as yet unknown archaeological and cultural resources will require close monitoring of construction activities by the City. The close proximity of properties intended for development to natural watercourses should be taken as a signal of the potential for unearthing yet unknown resources. In such cases, the City should instruct developers and construction foremen of the potential for damage to artifacts and provide written instructions as to the importance and necessity of halting all excavation work until the significance of the finds can be evaluated by competent archaeological and Native American specialists.

Recreation

The marinas proposed along the San Joaquin River pose the potential for adverse impacts on the river environment during construction and operation.

Mitigation Measures:

1. Environmental analysis of potential significant environmental effects will be required at such time as specific marina projects are proposed. This analysis should include the impact on boating capacity of the river, and the impact on water quality and biological resources.

Transportation/Circulation/Traffic

The Project has the potential for serious adverse impacts upon the freeway system, including aggravation of significant ambient congestion, the increase of traffic congestion at key interchanges along Interstate 5 (at Louise Avenue), along I-205 (the proposed new Paradise Road interchange) and requiring freeway lane expansion along I-5, the I-5 "merge" between State Route (S.R. 120 and I-205) and along I-205 west of Gold Rush City. It is noted, however, that this potential exists either with or without the Project.

Serious regional and inter-regional congestion of the freeway system already exists as the product of continuing growth in population and economic activity within the San Francisco Bay Area and the Northern San Joaquin Valley. A meaningful commitment to transit services is needed in the near future to off-set traffic impacts on the freeway system. The areas of most significant regional impact would occur westerly along I-205 through Tracy to its interchange with I-580, along I-5 between Lathrop and Stockton, and along S.R. 120 between I-5 and Freeway 99.

would occur westerly along I-205 through Tracy to its interchange with I-580, along I-5 between Lathrop and Stockton, and along S.R. 120 between I-5 and Freeway 99.

Mitigation Measures:

1. Golden Valley Parkway is proposed parallel to and west of I-5 and the I-5/I-205 merge, and parallel to and north of I-205. The Parkway would extend from Lathrop Road south, southwest and west through the Stewart Tract to Paradise Road in the vicinity of a new Paradise Road/I-205 interchange. This facility is essential to augment I-5 and I-205 capacity through the Lathrop planning area for the 20-30 year period of Stewart Tract buildout projected by the Specific Plan. The section of this facility between Lathrop Road and Stewart Tract may not be required until after the year 2005. In the interim, Gold Rush Blvd. would be extended to Stewart Tract as the primary means of access to Stewart Tract, connecting with the western section of Golden Valley Parkway when needed.
2. State Route 120 will require expansion to six lanes of traffic between I-5 and Freeway 99. This facility currently is being reconstructed as a 4-lane facility as part of Caltrans' current State Transportation Improvement Program [STIP].
3. A phased commitment to interregional, regional and local transit and TDM programs described under the topic of Air Quality is absolutely essential to mitigating the traffic circulation impacts listed above.
4. Freeway improvements that may be required because of Lathrop-generated traffic are to be financed in part through payment of a fair-share transportation improvement fee for all new development projects; improvements required to the local Arterial street system because of Lathrop-generated traffic are to be financed in part through a fair-share traffic improvement fee for all new development projects.
5. Arterial street improvements will be required along Louise Avenue and Lathrop Road from I-5 east to Lathrop's east city limits requiring fair-share contributions from the Project.
6. Manteca and Lathrop should both impose traffic impact fees to help pay for improvements to inter-community expressways/arterial streets.

Air Quality

Large quantities of air pollutant emissions can be expected from both vehicle and stationary sources under full project development. These emissions will aggravate air quality conditions within the regional air basin.

Mitigation Measures:

1. Mitigation through construction management to include: control of fugitive dust during site construction; early paving of streets and parking areas; and ability for the City to contact contractors to employ soil erosion and dust control measures, or to cease operations due to high wind conditions.
2. Mitigation through transportation system management actions (TSM) will become an important means to reduce the effects of vehicle emissions, once major commercial investors become known.
3. Development of a transportation plan that will promote the use of and offer incentives for ridesharing and transit.

ALTERNATIVES

As determined by the General Plan EIR in 1991, the "no project" alternative is the environmentally superior alternative, since it would not require any development west of Interstate 5. Of the alternatives that would involve development west of Interstate 5, the alternative of further reducing the area of urban expansion would be the most environmentally superior alternative, followed by the General Plan (and Specific Plan) as proposed. These alternatives are summarized in Part VI of this EIR and are described in Part 8-E of the General Plan.

Several design alternatives are also described in Part VI for Stewart Tract and Mossdale Village. In each case, they include more job-intensive and conservation-oriented development patterns. The conservation-oriented alternatives for Mossdale Village and Stewart Tract result in greater open space. In the case of Mossdale, however, more compact development constrains choice in the housing market to an extent inconsistent with the policies of the General Plan on residential density and intensity. In the case of Stewart Tract, the compact pattern would allow retention of some agricultural acreage, but would eliminate the opportunity to relate recreation residential use with golf course development as proposed by the Specific Plan, and limits options for on-site retention of surface and flood waters within open space corridors which are well-distributed throughout Stewart Tract.

Alternatives which seek greater employment for Mossdale and Stewart Tract are also constrained by what is possible under General Plan policy. For Mossdale Village, some modest increase in Freeway Commercial and Service Commercial is possible without creating an inconsistency with the General Plan. But any significant increase in employment could set the land use relationships of the General Plan out of balance to the point where a General Plan amendment might be required.

ALTERNATIVE E

The most important discussion of alternatives concerns the reconfiguration of land use and express-way/arterial roadways on either side of the Southern Pacific Railroad which parallels the I-5/I-205 merge. Referred to as Alternate "E" in the text of Parts II and V, this alternative was considered essential to avoiding the very serious long-term impacts on freeway traffic associated with the Mossdale Road interchange as proposed by the Specific Plan. It also reflects the realities of current Caltrans policy which was formulated only recently (spring, 1995), after the Specific Plan was published. Caltrans has determined that the existing Mossdale Road interchange with the I-5/I-205 merge can be utilized for only a very limited PM peak hour traffic of about 700 inbound vehicles. This effectively requires the elimination of major commercial land use proposals along the west side of the freeway merge west to the railroad, and a shifting of other commercial uses to locations west of the railroad where access would be provided from Gold Rush Boulevard and the eventual extension of Golden Valley Parkway to Stewart Tract. Only a 50 acre farmers' market remains along the merge.

Alternative E becomes the preferred land use and circulation arrangement for the eastern part of Stewart Tract, and is fully described in an Addendum to the Specific Plan. As a practical matter, the intensity of traffic and air quality impacts associated with Alternative E remain virtually the same as those associated with the Specific Plan (without Alternative E). A separate traffic analysis was completed for Alternative E to assure that mitigation measures under Alternative E will be adequate and that further environmental analysis will not be required.

CUMULATIVE AND GROWTH INDUCING IMPACTS

General Considerations

Specific Plan policies and proposals commit substantial acreage to residential, commercial, public and other use, consistent with the Lathrop General Plan. Most of the land to be developed in urban use under the Specific Plan will result in the conversion of agricultural lands. Proposals of the Specific Plan seek to accommodate all urban expansion within the boundaries of a planning area that also prescribes logical boundaries for the City's Sphere of Influence, reflecting policies and proposals of the City's General Plan adopted in December, 1991. The boundaries of the planning area and proposed sphere-of-influence are the same as those established by LAFCO.

The proposed Project (Specific Plan) is justified now in order to permit phased urban expansion west of Interstate 5 consistent with Lathrop's General Plan. The adoption of specific plans is required by the General Plan prior to annexation.

The Most Potentially Serious Cumulative Impacts

Notwithstanding the policies and proposals of the General Plan and Specific Plan to confine urban expansion, and of the role of LAFCO in maintaining the integrity of the City's sphere-of-influence, there is always a risk that nearby agricultural lands could eventually be targeted for urban expansion. Of special concern would be agricultural lands of Roberts Island which lay north of Stewart Tract and lands west of Paradise Cut within Tracy's sphere-of-influence. Roberts Island has been designated as an Agricultural Preserve by the County, and lays within the boundaries of the Delta Protection Commission's primary protection zone. Any urban expansion onto Roberts Island would place natural resources of the Delta in jeopardy of damage, loss or impairment. Such impacts are not expected because of the State mandate for affected counties to implement policies of the Delta Protection Plan now that it has been adopted by the Commission.

Cumulative Impacts on Public Services

The cumulative impacts on public services, including schools, fire and police protection service, water-sewer-drainage, and recreation will occur incrementally and gradually as the urban area expands. A key policy of the Specific Plan requires the phasing of development in a manner which will not place undue strain on the ability of local government to provide adequate levels of public service. This policy is embodied in the Plan's program of implementation, which sets forth a schedule of needed public improvements and the capability for financing improvements in a manner consistent with the policy of avoiding strain on local government service capabilities.

Other Cumulative Impacts

The cumulative impact of large-scale destination resort commercial recreation, and of residential buildout under the Specific Plan on the nearby cities of Manteca, Stockton and Tracy may be to slow somewhat the pace and extent of urban expansion that might otherwise occur in these cities. However, a lesser extent of urbanization could also be expected if the regional economic effects of Stewart Tract commercial development do not materialize.

Growth-Inducing Impacts

The growth-inducing impact of the Specific Plan will be to encourage an increase in economic activity and population growth within the sub-region, including the cities of Stockton, Manteca and Tracy. For Lathrop, it will stimulate further urban expansion consistent with the General Plan, and all of the public and private facilities and services needed to serve increased economic activity and growth of the resident and visiting population.

USE OF THIS EIR (by the City and other public agencies)

It is the intent of the City that this EIR be used for the following purposes:

1. As a basis for judging all specific development projects that may be proposed consistent with policies and proposals of the Specific Plan and mitigation measures of this EIR. Further environmental analysis will be required where the extent of environmental impact cannot now be determined for lack of site-specific project details that may have a significant effect beyond that described in this EIR.

2. As a basis for formal annexation proposals for the area covered by the Specific Plan for consideration by LAFCO.

3. In developing and implementing a mitigation and monitoring program for project EIRs as required by State Law.

4. It is the further intent of the City that this EIR be used as the vehicle to avoid preparation of unnecessary EIR's for development projects and programs which are consistent with the Specific Plan by using the Mitigated Negative Declaration process where this EIR is adequate for the purpose.

5. In utilizing this EIR for the consideration of subsequent projects proposed under the Specific Plan, it will be possible to avoid unnecessary redundancy, the waste of time or unnecessary or premature speculation. This will allow focus on those issues which remain for environmental review and decision as compared to those already decided.

6. In adopting development agreements with land owners and developers.

This EIR is also intended to be used by the following local public agencies having jurisdiction within the area covered by the General Plan:

1. The Manteca Unified School District.
2. The Banta Elementary School District
3. The Tracy High School District
4. The San Joaquin County Community Development Department.
5. The San Joaquin County Public Works Department.
6. The San Joaquin County Local Agency Formation Commission.
7. The San Joaquin County Council of Governments
8. The San Joaquin County Mosquito Abatement District
9. The San Joaquin Valley Unified Air Pollution Control District

This EIR is also intended for use by any agencies of State or Federal Government that have responsibilities as Trustee or Responsible agencies as defined by CEQA. They include, but are not limited to the following:

1. State Department of Fish & Game
2. State Department of Water Resources
3. State Lands Commission
4. State Department of Boating & Waterways
5. State Department of Conservation, Division of Mines & Geology

6. State Department of Conservation, Division of Oil & Gas
7. State Mining and Geology Board
8. State Water Rights Board
9. Regional Water Quality Control Board, Central Valley Region
10. State Water Resources Control Board
11. State Reclamation Board
12. State Department of Health Services
13. State Department of Transportation (Caltrans)
14. California Integrated Waste Management Board
15. Office of Historic Preservation and Native American Heritage Commission
16. State Department of Housing and Community Development
17. U.S. Army Corps of Engineers
18. U.S. Coast Guard

MITIGATION MONITORING PROGRAM

As the Lead Agency, the City is required to establish a mitigation monitoring program to cover all mitigation that may be required during the course of buildout within the planning area. The program has been prepared separately by the City for consideration prior to City Council certification of this EIR. Upon City Council certification of the EIR and adoption of the Specific Plan, the Mitigation Monitoring Program will be included in the final publication of the Final EIR. A summary of mitigation monitoring requirements is presented in Table I-2.

TECHNICAL APPENDIXES

Several base-line studies prepared in conjunction with the Specific Plan are available as Technical Appendixes for review by interested parties. Topics covered are biological resources (including the proposed Habitat Management Plan for the Swainson's hawk, wetlands delineation, fisheries, kit fox survey and brush rabbit survey) and water resources (including water supply, wastewater management, flood control, and drainage). Copies of these Technical Appendixes have been made available to those local, state and federal agencies having a "responsible agency" or other type of jurisdictional concern. All Technical Appendixes are on file with the Lathrop Community Development Department at City Hall, 16775 Howland Road, Suite #1, Lathrop. A study of cultural resources is being withheld from public review because State Law requires that the location of significant archaeological "finds" be kept confidential to avoid vandalism of sites and artifacts.

TABLE I-2

SUMMARY OF MITIGATION MONITORING REQUIREMENTS

TOPIC	Responsibility for Implementation	Mitigation Measure Required	When Monitoring is Required	When Mitigation is Completed	Who Needs to Verify Completion
SPECIFIC PLAN PREPARATION & ADOPTION	City of Lathrop in cooperation with developers	Finer grained urban design and environmental analysis	Throughout Specific Plan preparation process	Upon adoption of the Specific Plan(s) by the City of Lathrop	Lathrop Planning Commission & City Council
FOUNDATION SAFETY	Developers	Adequate foundation soils engineering	During preliminary project design stage	Upon submission to and approval of plans by City	City Engr. & City Building Official
AIR QUALITY	Gold Rush City	Staged program of providing rail transit	At or soon after theme park opening	On-going staged program to assure transit	Lathrop, County Transportation Agency
	Developers	Fugitive dust control	During project construction	Completion of construction	City Public Wks. Dept.
	Large employers	Trans. management	On-going	On-going	City, company management
	Stationary sources	Emission control	On-going	On-going	Air Basin Control Dist., EPA, ARB
FARMLAND CONVERSION	City	Phased development	On-going	On-going	City Plan. Dept., City Council
WATER	Gold Rush City	Flood proofing	During project construction	Prior to occupancy permits	Corps of Engrs., Reclamation Dist. & City
	City, Gold Rush City	Obtain entitlement to adequate firm supply	Prior to project construction	Prior to project construction	City of Lathrop
	Developers/City	Construct staged facilities for reclamation reuse	First facility prior to development west of I-5	Prior to occupancy permits	City, Regional Water Qual. Control Bd.
	Developers	Drainage collection & disposal facilities	During project construction	Prior to occupancy permits	City of Lathrop
BIOLOGICAL RESOURCES	Developers	Habitat replacement, enhancement & expansion	During or prior to project construction	Somewhat ongoing - when results are evident	Dept. F & G, Corps of Engrs.' F & W Service, State Lands

TABLE I-2 cont.

TOPIC	Responsibility for Implementation	Mitigation Measure Required	When Monitoring is Required	When Mitigation to be Completed	Who Needs to Verify Completion
CIRCULATION & TRAFFIC	Developers	On-site and off-site street improvements	During project construction	Prior to occupancy permit	City Engr./Pub. Works Dept.
	Developers/ City/County/Caltrans	Freeway & interchange improvements	On-going; & during Caltrans STIP	At completion of contract construction	Caltrans, City Engr., County Public Works
	City/County	Improvements to exist. Arterial & Collector streets	During Capital Improvement Program	At completion of contract construction	City Engr., City & County Pub. Works Depts.
NOISE	Developers	Noise attenuation	Project approval & construction	Prior to occupancy permit	City Pub.Works/ Planning
ENERGY UTILITIES	Developers	Planning & installation of facilities	Specific Plan stage	Prior to occupancy permit	P.G. & E./ City Pub. Wks.
HUMAN HEALTH	Developers	Hazard./toxics; qualified process engineering	Project design & approval	Prior to occupancy permit	City Engr./Pub. Wks./Dept. of Health Services
AESTHETICS	Developers	Achieve urban design and bldg. quality	Project design & approval	Prior to bldg. permit	City Planning/ Developer design review
OPEN SPACE/-RECREATION	Developers/ City/School Dist.	Park & open space improvements	Project design & approval	Prior to occupancy permit	City Planning/ Pub. Wks./Rec./ School District
SCHOOLS	Developers/ Manteca Unified School District	School planning & construction	Project construction, Capital Improve, Prog.	Project construction, on-going	Manteca Unified School District/ City Planning
REDEVELOPMENT	City Redevelop. Agency	Plans & improvements	On-going	On-going	Redevelopment Agency
DEVELOP. REGULATION	City staff, Plan Comm.,Council	Development permits	Specific Plan, zoning & sub. ord. admin.	On-going	City Planning/ Commission & Council

PART II

DESCRIPTION OF THE PROJECT

INTRODUCTION

The West Lathrop Specific Plan

The proposed project is the West Lathrop Specific Plan, as supplemented by the Addendum to the Specific Plan, prepared for the areas shown on Figure II- 1. A discussion is provided at the end of Part II of subsequent projects which may need only limited environmental review after adoption of the Specific Plan.

The Specific Plan covers two distinct but closely related areas, as shown on Figure II-2. The **Mossdale Village** area lays between the Interstate 5 freeway and the San Joaquin River, containing approximately 1,161 acres; the **Stewart Tract** lays immediately west of Mossdale Village and the river, containing approximately 5,794 acres. Development of these areas is predicated on satisfying policies of the Lathrop General Plan, adopted in December, 1991, which call for the preparation and adoption of a Specific Plan for any area which lays west of Interstate 5 before development may be approved by the City.

Mossdale Village is essentially a residential community with supporting public facilities, Village commercial and regionally-oriented commercial development; **the Stewart Tract** would be developed in phases as a complex of region-serving recreation-oriented commercial and residential uses, with supportive public facilities and services. The central feature of the complex would be a theme park reflecting the State's historic Gold Rush era of the mid 1800's.

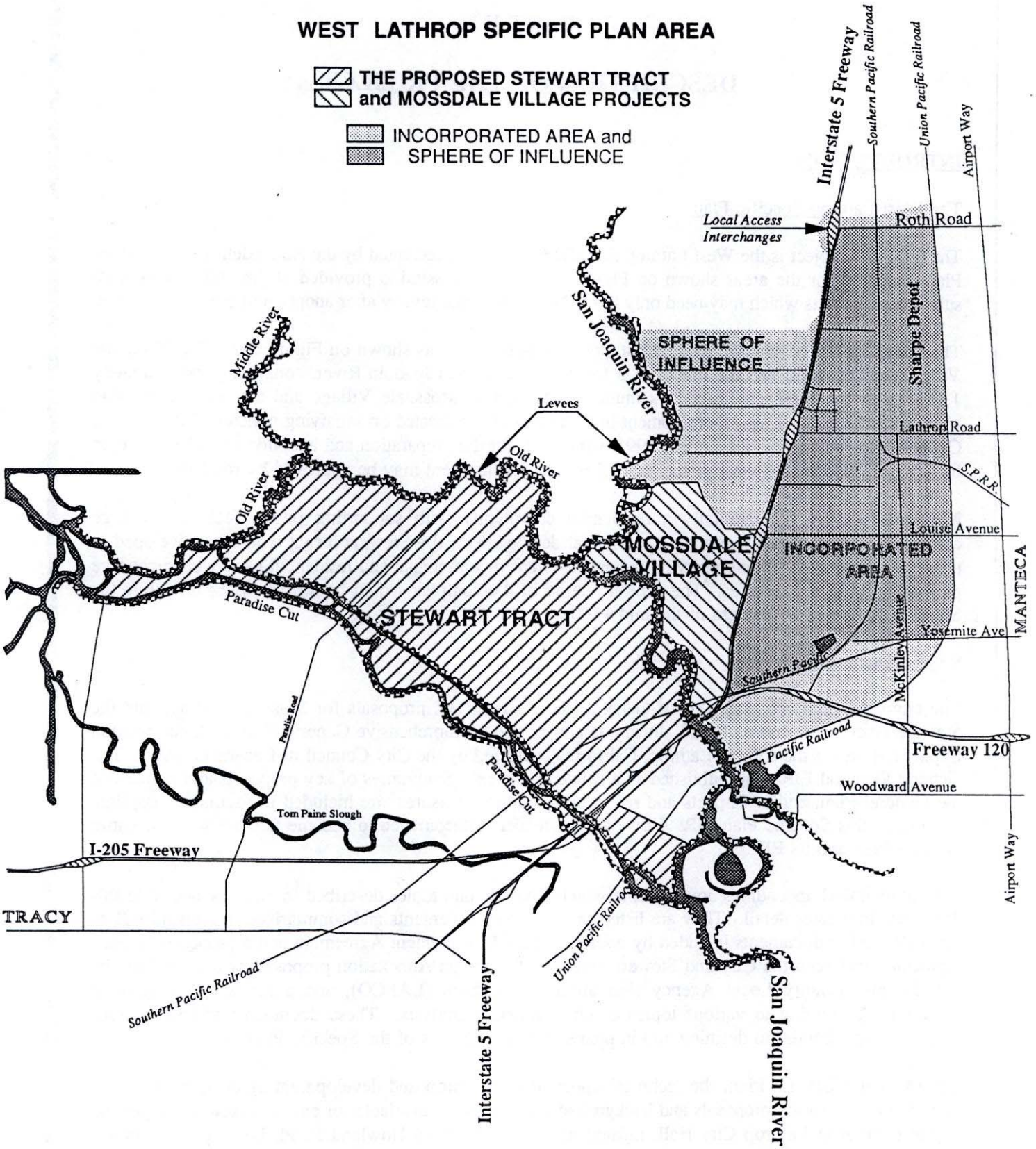
Related Documents

The environmental consequences of General Plan policies and proposals for Mossdale Village and the Stewart Tract have been reviewed already as part of the "Comprehensive General Plan & Environmental Impact Report for the City of Lathrop, California" certified by the City Council in December, 1991. The General Plan and EIR were published as a single document. Summaries of key proposals and policies of the General Plan, and of impacts and required mitigation measures, are included in various appropriate sections of this Specific Plan EIR. However, the reader is encouraged to become familiar with the entire General Plan and its EIR.

Several technical appendixes are available which cover certain topics described in Parts IV and V of this document in greater detail. They are listed in the Table of Contents and summarized in Appendix B of this EIR. Other documents included by reference are a Development Agreement and a proposed Finance Agreement between the City and Stewart Tract developers, an Annexation proposal for approval by the San Joaquin County Local Agency Formation Commission (LAFCO), and a series of background documents pertaining to various topics of environmental analysis. These documents and the actions proposed are essential to defining and implementing the policies of the Specific Plan.

Copies of the General Plan, the technical appendixes, the proposed development agreement, financing agreement, annexation proposals and background documents are available for public review at the general public counter at Lathrop City Hall, located in Suite 1 at 16775 Howland Road, Lathrop. The phone number is (209) 858-2860, Ext. 327. Copies of the technical appendixes have also been provided to the State Clearinghouse.

FIGURE II-1


WEST LATHROP SPECIFIC PLAN AREA
THE PROPOSED STEWART TRACT and MOSSDALE VILLAGE PROJECTS
INCORPORATED AREA and SPHERE OF INFLUENCE
Interstate 5 Freeway
Southern Pacific Railroad
Union Pacific Railroad
Airport Way
Local Access Interchanges
Roth Road
San Joaquin River
SPHERE OF INFLUENCE
Sharpe Depot
Middle River
Levees
Old River
Old River
Lathrop Road
S.P.R.R.
Louise Avenue
MOSSDALE VILLAGE
INCORPORATED AREA
Paradise Cut
STEWART TRACT
MANTECA
Yosemite Ave
McKinley Avenue
Southern Pacific
Freeway 120
Woodward Avenue
Paradise Road
Paradise Cut
Tom Paine Slough
I-205 Freeway
TRACY
Southern Pacific Railroad
Interstate 5 Freeway
Union Pacific Railroad
San Joaquin River
Airport Way

PROPOSED LAND USE AND CIRCULATION

Mossdale Village

Land use and circulation proposals for Mossdale Village (as shown on Figure II-2 and as listed in Table II-1) are based upon the creation of two residential neighborhoods, separated by the southwesterly extension of Louise Avenue. This extension (designated as Gold Rush Boulevard) would become a principal means of access to the Stewart Tract which lays west of the San Joaquin River. Each neighborhood is served by centrally located elementary school/neighborhood park sites that will become focal points for a broad variety of educational, cultural and recreational activities. These neighborhoods will be linked by River Road, a collector street that loops through the residential areas connecting major activity centers and provides access to homes along lateral minor streets. Surface continuity for vehicle traffic between neighborhoods would be accomplished by running River Road under the approach to a new bridge extending Gold Rush Boulevard over the San Joaquin River.

The neighborhoods will also be served and unified by a single Village Center which would accommodate a variety of shops, restaurants, professional and business services, and public and semi-public community facilities needed to serve the neighborhoods on a day-to-day basis. The Village Center will be made accessible to residents on foot, bicycle and other non-motorized means of transportation via a system of trails and landscaped corridors. Higher density housing is located near the Village Center to encourage more residents to be within convenient reach of the Center and to inhabit the Center throughout evening as well as daytime hours. Along the eastern edge of Mossdale Village are freeway-oriented uses referred to by the General Plan as Freeway Commercial and Service Commercial. These uses will act as both visual and noise buffers to traffic along Interstate 5 for residential areas of the Village.

The San Joaquin River runs along the westerly edge of the Village, separated from the Village by a levee which has been reinforced to the standards required by the Federal Government to withstand the forces of a 100 year flood event. This levee and a band of public open space will create a long open space corridor running the entire length of Mossdale Village. Several parks, a proposed marina, and two natural areas would adjoin the open space corridor along the river. The northerly park will be developed and maintained as passive recreation open space; the park near the Village Center would be developed more for activities compatible with the Village commercial area, including plazas for outdoor performing arts and Village promotion. The Mossdale Crossing County Park at the southern end of the open space corridor along the river would continue to provide boat launching access to the river. A future high school site is shown at the northern boundary of the planning area which would also be connected to the open space corridor system.

The principal roadways traversing the Village are Gold Rush Boulevard (the Louise Avenue extension west of Interstate 5) and Golden Valley Parkway (designated by the General Plan as Stanford Boulevard). Gold Rush Boulevard will become the major gateway to the Stewart Tract and its commercial recreation attractions from Interstate 5 (I-5). It will also provide a necessary linkage with the existing residential areas and employment centers of the city east of I-5 . Golden Valley Parkway extends through the Village on a north-south alignment parallel to the I-5 freeway and will provide access to the easterly part of the Stewart Tract close to the alignment of the Southern Pacific Railroad. These facilities will be developed as multi-lane expressways with limited access control and the visual appearance of parkways. Golden Valley Parkway will also incorporate right-of-way for public transit, including buses and fixed rail. Transit service is intended ultimately to be comprehensive in its application to meet local and sub-regional needs, with extensions north to Stockton and the Stockton Metropolitan Airport, and west through the Stewart Tract to the City of Tracy.

LEGEND FOR

WEST LATHROP SPECIFIC PLAN DIAGRAM

STEWART TRACT

RECREATION COMMERCIAL (C-REC)

RESORT COMMERCIAL (C-RSRT)

FREEWAY COMMERCIAL (CH)

VILLAGE COMMERCIAL (CV)

REGIONAL COMMERCIAL (CR)

RESIDENTIAL LOW (R-L)

RESIDENTIAL MEDIUM (R-M)

RESIDENTIAL HIGH (R-H)

PUBLIC (P)

RESOURCE CONSERVATION/
OPEN SPACE (RCO)

MOSSDALE VILLAGE

RESIDENTIAL LOW (R-L)

RESIDENTIAL MEDIUM (R-M)

SERVICE COMMERCIAL (CS)

FREEWAY COMMERCIAL (CH)

WATERFRONT RESORT COMMERCIAL (CW)

RECREATION COMMERCIAL (C-REC)

VILLAGE COMMERCIAL (CV)

PUBLIC (P)

FIGURE II-2

WEST LATHROP SPECIFIC PLAN DIAGRAM

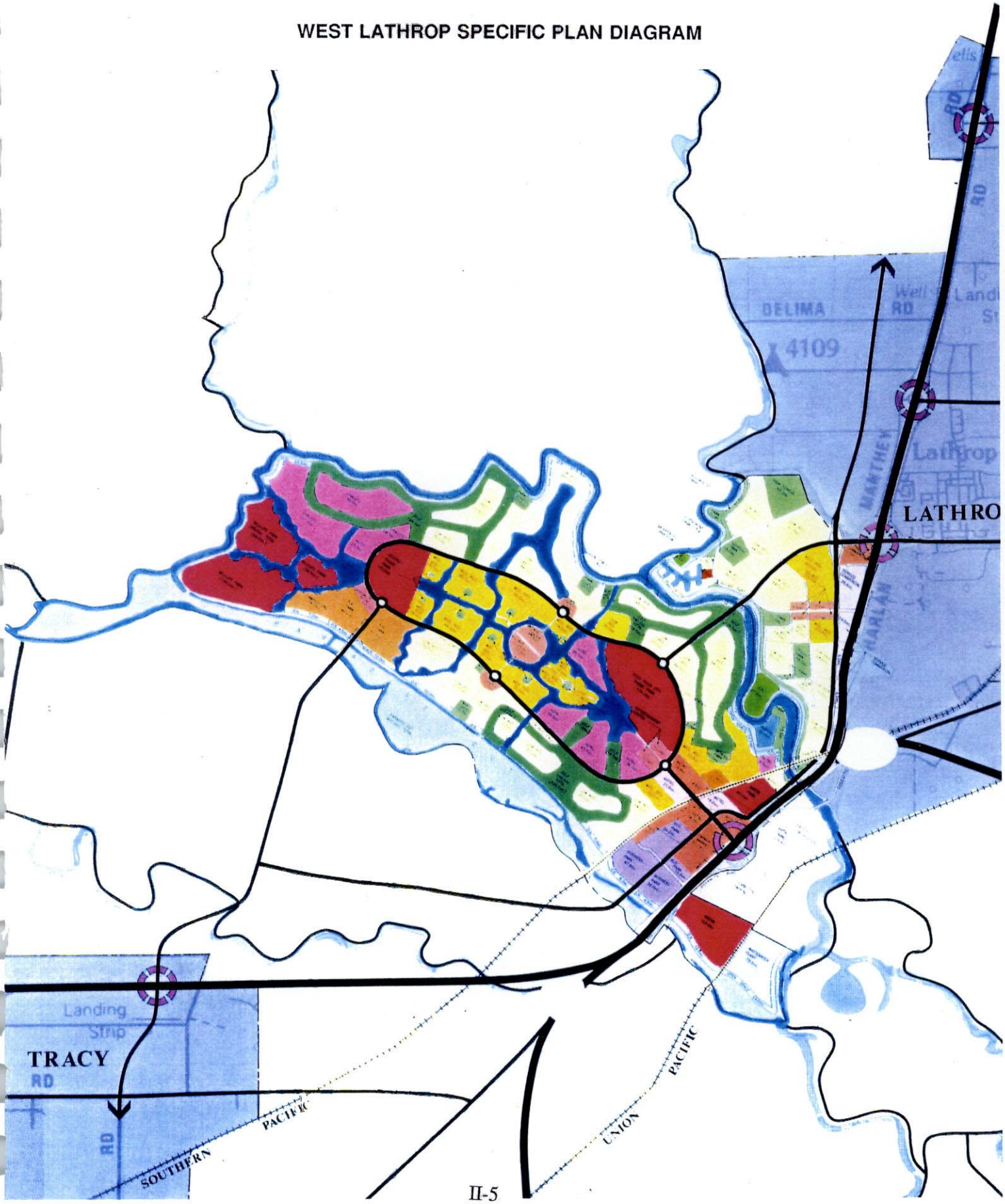


TABLE II- 1

LAND USE DISTRIBUTION, MOSSDALE VILLAGE

TYPE OF LAND USE	ACREAGE
Low Density Residential (ave. 5.5 DU's/Ac.)	442.5
Medium Density Residential (ave. 12 DU's/Ac.)	82.0
Village Center	23.5
Freeway Commercial	20.0
Service Commercial	68.0
Waterfront Commercial	4.0
K-8 Schools/Parks	36.0
High School	50.0
Marina (water only)	18.0
Riverfront Park	20.5
Neighborhood Parks	16.0
Mossdale Crossing County Park	9.0
Open Space	112.0
Waterway	67.0
Internal Streets	134.0
Interstate 5 right-of-way (r-o-w)	45.5
Southern Pacific Railroad r-o-w	13.0
TOTAL	**1,161.0**

Manthey Road currently extends along the west side of Interstate 5 for the length of the City limits from Roth Road on the north to Louise Avenue on the south. From Louise Avenue, it extends southerly to the river, crosses the river onto the Stewart Tract, and terminates at the Mossdale interchange with Interstate 5. Manthey will be utilized for several years to provide access to the Stewart Tract from the Louise Avenue/1-5 interchange as Phase I development of the Stewart Tract proceeds. After Gold Rush Blvd. and Golden Valley Parkway are completed to the Stewart Tract, Manthey would become an access road serving adjacent freeway commercial and service commercial from Louise Avenue to a southern terminus near the river.

The Stewart Tract

Land use and circulation proposals for the Stewart Tract (as shown on Figure II-2 and as listed in Table II-2) reflect relevant policies and proposals of the City's Comprehensive General Plan. The Stewart Tract is a master-planned community integrating an historical theme park, futuristic theme park, water park and wild animal park with recreation-oriented residential villages, activity centers, vacation resorts, shops, entertainment and sports facilities, commercial recreation enterprises, a regional commercial center and business park and lodging.

The Stewart Tract is planned with a focal area of activity inside a circle drive (Califia Drive) -- a looped boulevard which extends over much of the length of the planning area. At the east end of Califia Drive will be the historical theme park -- Gold Rush City. At the west end of Califia Drive will be the futuristic theme park -- "Califia" and the adjacent wild animal park. Situated between these two theme parks will be a series of residential/cultural villages reflecting the diversity of heritage included in the Gold Rush era. The cultural villages are connected to the village center and to the destination resort hotels with a recreational lake system which runs the entire length of the destination resort. The perimeter residential areas are integrated by a system of golf courses, open space corridors and local streets.

The Gold Rush City theme park is proposed as a full scale theme park based on San Francisco circa 1850 and the Gold Rush era. Several individual sub-themes are to be developed, providing a wide range of entertainment opportunities for the entire family. Supporting the two major theme parks will be secondary attractions of a wildlife park and a water park. Other recreational facilities will include hotels, lodgings, sports centers, ranches and camping facilities. Resorts will offer a range of accommodations, from first class, high quality hotel suites and time-share condominiums, to family hostelries, second home vacation units, retirement units and RV camp grounds. Sporting facilities will include horseback riding, cycling, swimming, three+ golf courses and tennis.

Development will take advantage of the proximity of the site to the San Joaquin Delta by offering a 30 acre marina with boating, water skiing, canoeing, fishing, wildlife excursions and other water-related activities. The marina will be developed initially inside the existing levee system on Stewart Tract. Construction will include a new levee constructed within the existing levee system. Once construction of the marina and new inner levee are completed, a portion of the existing levee will be removed to provide direct river access to the marina. A nine acre resort hotel will be constructed in conjunction with and in addition to the 30 acre marina.

A sports stadium (arena), and convention center are planned to provide a variety of entertainment and vacation activities. All of Paradise Cut along the southern boundary of Stewart Tract will be preserved and enhanced as natural habitat for a variety of wildlife native to the area.

TABLE II-2

LAND USE DISTRIBUTION, STEWART TRACT

GEN. PLAN DESIGNATION	TYPE OF LAND USE	ACREAGE
RC (Recreation Commercial)	Gold Rush City Theme Park	174.0
RC	Second Theme Park	102.0
TS	Commuter Park & Ride	14.5
TS	Transit/Multi-Modal Station	9.0
RC	Water Park	40.0
RC	Wildlife Park	266.5
RC	Main St. Entertainment Center	20.0
RC	Specialty/Themed Retail	59.5
RC	Golf Course	571.0
RC	Marina (San Joaquin River)	30.0
RecR (Recreational Residential)	Hotels	181.5
RecR	Motels	39.0
RecR	Chalets	217.5
RecR	RV Park	103.5
RecR	Campground	34.0
VC	Village Center	55.0
VC	Neighborhood Retail	15.0
RegC (Regional Commercial)	Farmers Market	50.0
RegC	Business Park/Transit Commercial	138.0
RecR (Housing)	Low Density Medium Density High Density	851.0 443.5 12.5
OS (Open Space)	Lakes	449.5
OS	Park/Schools	40.0
OS	Paradise Cut	900.0
0S	Levee Open Space	137.2
OS	Other OS	146.0

[Table II-2 cont. Next page]

Table II-2, cont.

GEN. PLAN DESIGNATION	TYPE OF LAND USE	ACREAGE
FS	Fire Stations	2.0
AG	Wastewater Treatment Plant	75.0
Arterial/Collector Street System	Roundabouts Internal Streets	8.0 235.8
I-5 Freeway	I-5 r-o-w	134.0
Southern Pacific RR	S.P.R.R. r-o-w	50.5
Union Pacific RR	U.P.R.R. r-o-w	10.0
	TOTAL SITE ACREAGE	**5,794.0**

Because of the depth and variety of activity, it is anticipated that the average length of stay of visitors to Gold Rush City will be three days. Primary vehicular access from the north at buildout will be from Lathrop Road and Louise Avenue interchanges with Interstate 5 onto Golden Valley Parkway and the Gold Rush Blvd. extensions over the San Joaquin River. Primary access from the west will be from a future Paradise Drive interchange with I-205. Secondary access is proposed at the existing Mossdale interchange with the 1-5/I-205/S.R. 120 "merge" which passes through the easterly edge of Stewart Tract. During Phase I development of Stewart Tract, the existing Manthey Road frontage road, the Mossdale interchange and partial construction of Gold Rush Bouolevard are expected to satisfy requirements for vehicular access to Stewart Tract. Manthey Road would be terminated at Mossdale Crossing County Park at such time as Golden Valley Parkway is extended over the river from Mossdale Village.

Visitors to Gold Rush City will be able to park their cars for the duration of their stays either at the transit station, at the theme parks or at their place of lodging. They will be able to utilize a variety of means of on-site transportation, including high occupancy vehicles such as carriages, gondolas, jitneys, buses, ground rail, overhead rail, and boats of all types (other than high powered) over the network of internal waterways. To diversify the modes of travel to the site, additional transportation facilities include a multi-modal center for rail access via the San Joaquin County proposed Southern Pacific/Union Pacific commuter rail, and potential boat excursion trips from ports and marinas within the San Francisco Bay Area, the Sacramento-San Joaquin Delta and at Sacramento. As part of the regional transportation network, light rail and bus access from the Stockton Metropolitan Airport will also be an option. The proposed commuter park-and-ride facility will provide parking for theme park visitors on weekends as well as for regional commuters on weekdays.

Selected commercial uses are planned for all components of Stewart Tract development. Resorts and commercial recreation and entertainment facilities will provide employment opportunities for residents of the Lathrop area. Village commercial uses will be developed where appropriate to minimize traffic and to encourage pedestrian access. At the waters edge, specialty-theme retail (such as water-oriented) will provide distinctive shopping opportunities. Portions of Stewart Tract will be developed as a business park, a retail complex and a sports facility to be served by various forms of transportation, with full capabilities for telecommunication.

Given the anticipated activities and length of stay, a strong recreational residential element will complement the resorts and theme parks. A variety of recreation-oriented housing types are proposed,

including retirement homes, single-family units and condominiums, and second homes, to be integrated into a total recreation environment to enlarge and create opportunities for a vacation experience. Stewart Tract will also provide for some of its employee housing needs, with emphasis on the needs of executive/managerial personnel and of single individuals. The need for school services generated by this housing demand will be met by agreement with the Banta Elementary and Tracy High School Districts which serve the area covered by the Stewart Tract..

Following the Village concept of residential development established for Mossdale Village east of the San Joaquin River, the full range of recreation-residential use will be integrated by careful landscape architectural and architectural design. Since the goal of Gold Rush City is to provide a unique recreation experience for the family and the individual, a system of parks, championship golf courses, landscaped open space corridors and natural preserves will be included.

Flexibility in Land Use Arrangement and Circulation

Mossdale Village:

Some flexibility in land use arrangement and circulation for Mossdale Village is to be considered inherent in policies and proposals of the Specific Plan because of uncertainty as to how many separate developers may acquire property interests to accomplish final development. Examples of such flexibility include the design of the minor street system, the final location of school/parks, the final design of open space corridors, and the final configurations of various housing types.

Features of the Specific Plan which leave little room for change include the location of the Gold Rush Blvd. and Golden Valley Parkway expressways, the location of the Village Center, the location of Freeway Commercial and Service Commercial areas, and the residential densities prescribed. In the case of residential development, flexibility in housing type is allowed under Planned Unit development concepts of design, while holding generally to the maximum number of housing units allowed by the mix and acreage of residential densities prescribed by the Specific Plan.

Stewart Tract:

Overall flexibility in land use arrangement and use selection is to be allowed for Stewart Tract development because of the length of time expected to accomplish buildout and the uncertainties regarding uses that may not stand the tests of continued market attraction over 25-30+ years. Some of the uses developed during early phases may be changed significantly or replaced, as characteristics of market demand change. Other uses not planned for construction until latter phases of project development may not be developed at all, thus requiring substitutes. The need to allow for such flexibility is sound, as long as substitution of uses is consistent with the overall project conception and mitigation required for resulting environmental impacts. The West Lathrop Specific Plan describes a limited number of alternative land use arrangements which meet these tests. Selected planning alternatives are described at the end of Part II and are evaluated as to their impacts and needed mitigation in Part V.

One of the positive aspects of change expected over time is the potential for better mitigation or even avoidance of environmental impacts anticipated under current technologies. Traffic management and the availability of sophisticated auto and transit systems that are relatively emission-free and congestion-free serve as examples. While such advances in technology cannot be assumed to mitigate impacts under current conditions of project conception and phasing, the prospects for eventually realizing such benefits in the future can be viewed with cautious optimism.

The General Plan addresses the need for flexibility in commercial development by the following statements [see pp 4-A-20 & 21]:

> "Commercial recreation and entertainment attractions which typically will generate the greatest volumes of traffic are to be concentrated in close proximity to the transit and expressway facilities necessary to provide access to Gold Rush City from the freeway system and S.P. Railroad. Key transportation facilities in this regard are: 1) the extension of the Louise Avenue expressway from the northeast onto the Stewart Tract; 2) the extension of the Stanford Boulevard expressway southwesterly from SPA #2 (Mossdale Village) across the San Joaquin River onto the Stewart Tract in close relationship to the alignment of the Southern Pacific Railroad; and 3) the provision of expressway access to the southeast end of the Stewart Tract from Interstate 5 via the State Route 120/Yosemite Avenue interchange.
>
> As suggested previously, the concept of flexibility in the selection of uses to be included in the various commercial recreation attractions becomes a central policy of overriding importance. Similarly, it is an important policy that the location of uses be considered flexible within the general limits of access described under the topic "Commercial Concentrations", above. This degree of flexibility is needed as the market feasibility of use selections becomes better understood and as the most promising physical relationship among uses can be identified. To a lesser but still important extent, flexibility will also be important in the selection and distribution of resort, commercial lodging and recreation residential proposals of the Plan."

The Specific Plan provides abstracts of or references to all relevant statements concerning the character and extent of flexibility that is allowed by the General Plan in developing the Stewart Tract.

WATER RESOURCES

The General Plan requires that development within Stewart Tract and Mossdale Village be withheld until the extent of development to be approved is supported by assurance that a firm supply of water will be obtained commensurate with the amount of urbanization to be provided. The possible need for phasing-in urban water supplies is recognized. To meet this test, the City, in conjunction with the project proponents, has been exploring several approaches for providing water supplies to the planning area, including contracting for surface waters that would be provided by the South San Joaquin Irrigation District, conversion of appropriative rights and riparian rights, and expansion of the City's existing groundwater well system.

The primary options being considered for short-term water supply are the conversion of water rights from agricultural to urban use, or use of ground water from on-site or off-site wells. The Stewart Tract currently has riparian and appropriative water rights for up to 40,000 acre feet per year that could potentially be converted to urban use. Either of these options would require on-site treatment of the water to meet drinking water standards.

An option for providing long-term water supplies would be for the City of Lathrop to participate with the South San Joaquin Irrigation District (SSJID) and the Cities of Tracy, Manteca and Escalon in connection with the acquisition of water and construction of a regional treatment and conveyance system. An initial study by SSJID has demonstrated the merit of SSJID being a major wholesaler of treated water to valley communities, including Lathrop. Negotiations, including engineering and financial feasibility studies, are currently underway between SSJID and the above-listed cities for the acquisition of water supplies and construction of a treatment plant that would be located southeast of the City of Lathrop. Under this option, treated water would need to be transported from the treatment plant to the City of Lathrop and the Specific Plan area. The water supplied by SSJID would be augmented by the City's current or expanded ground-water system.

Other alternatives for long-term water supply include conversion of agricultural water rights to urban use and the use of groundwater from on-site or off-site wells. Either of these options would require on-site treatment of the water to meet drinking water standards.

For further discussion of water resources, see Specific Plan pages 60-66.

WASTEWATER MANAGEMENT

Short-term provision of wastewater treatment capacity for the Specific Plan area involves the expansion of the current 0.6 MGD Kearny Ventures/City of Lathrop sewage treatment plant (the "KV Facility") to 1.2 MGD or larger. 50% of the increased capacity would be allocated to the Stewart Tract and 50% would be allocated to the rest of the City, including Mossdale Village. Detention ponds would be constructed on Stewart Tract as holding areas for the treated effluent from the expanded facility, which would then be sprayed onto Stewart Tract agricultural lands. The expansion of the KV Facility would provide adequate capacity for the City of Lathrop as well as early phases of the Project.

There are three long-term options being considered for provision of wastewater treatment for the Specific Plan area: 1) the Stockton option; 2) the Manteca option; and 3) the Lathrop option:

The Stockton Option. The City of Stockton is currently processing a "can and will serve" letter to the City of Lathrop to provide as much as 10 MGD of wastewater treatment capacity. A draft of this letter is included in the technical appendix to this EIR. Under the Stockton option, effluent from the City of Lathrop, Mossdale Village and the Stewart Tract would be conveyed in a newly constructed force main to existing Stockton sewer interceptors in the area of Weston Ranch, located north of Roth Road along the west side of the I-5 corridor.

The Manteca option. Under this option, the City of Manteca would provide wastewater treatment capacity to the City of Lathrop through the expansion of the Manteca wastewater treatment plant which currently serves the City of Lathrop in part. Provision of service would require an expansion of the Manteca plant and would require the acquisition of land disposal and discharge permits.

The Lathrop option. The City of Lathrop is currently conducting a $250,000 feasibility study directed at permitting and constructing the City's own wastewater treatment facility for long-term needs of urban expansion envisioned by the General Plan. The Specific Plan identifies a 75.5 acre site ("Site 4") for the Lathrop plant at the eastern end of the Stewart Tract bounded by the Union Pacific railroad, Paradise Cut, and the San Joaquin River. (Specific Plan, Figure 8) Alternatively, a second site ("Site 3b") is being investigated, which is located adjacent to the KV Facility. The selected facility would also provide for wastewater reclamation and reuse. Limited expansion of the KV Facility is also being proposed to meet short-term needs of urban expansion within the existing City limits while the City perfects a long-term wastewater treatment capability.

For further discussion of wastewater management, see Specific Plan pages 66-70.

LEVEE SYSTEM

The Specific Plan requires that levees surrounding the Specific Plan area must be designed and constructed to meet standards set by the U.S. Corps of Engineers, the Federal Emergency Management Agency (FEMA), the California Reclamation Board, and the California Department of Water Resources. The levees which border Mossdale Village already meet these standards. The Specific Plan proposes to upgrade the entire levee system around the Stewart Tract to meet current FEMA engineering standards.

An option being considered by the project proponents in this regard involves phasing the upgrades to the Stewart Tract levee system, which would involve the use of on-site "cross-levees."

For further discussion of the levee system, see Specific Plan pages 32-33, and 140 and the Planning Alternatives supplement to the Specific Plan.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

Population and economic characteristics of the project are summarized in Tables II-3 and II-4.

Mossdale Village

At buildout, Mossdale Village would have a population of approximately 9,460, and nearly 3,200 housing units. Of total housing, about 2,265 or 70.8% would be Low Density single-family at an average of 5.5 dwelling units per net acre, with the remaining 935 units (29.2%) being Medium Density multi-family at an average of 10 units per net acre..

Non-residential land use would include the Village Center (22.1 acres), Freeway Commercial (21.0 acres), Service Commercial (68.7 acres), specialized Waterfront Commercial (3.7 acres), two elementary school/park sites (36 acres), a future high school site (50 acres) and parks and open space along the San Joaquin River.

Stewart Tract

During the anticipated 30 year period of project construction, several thousand temporary construction jobs will be created. The initial theme park investment is estimated at $200 million; investment in supportive facilities will be in the range of $1 to $2 billion. At buildout, it is conservatively estimated that Stewart Tract development will create up to **17,000 jobs**. Estimates prepared by Economics Research Associates (ERA) indicate that a major investment theme park could reach an annual attendance range of 3.0 to 3.5 million visitors. At this level of investment and attendance, total expenditures would be in the range of **$203-$231 million**, local tax revenues would be in the range of **$8.7-$9.9 million**, and jobs would be created in the range of **4,350-4,950**.

Combined with theme park related impacts, local tax revenues from all Stewart Tract development (at buildout) would range from **$29.5 to $33.7 million** annually, with total theme park employment in the range of **3,750 to 6,900 jobs.**

DEVELOPMENT PHASING

Mossdale Village

The development of Mossdale Village is envisioned in four phases, consistent with probable housing and commercial market demand (as shown on Figure II-3), as follows:

> Phase 1 would involve approximately 830 housing units concentrated on either side of Golden Valley Parkway, with a population of about 2,408. Low density single-family units would comprise about 520 units, or 62.6% of all units. Remaining units (310) would be medium density, involving a variety of housing types ranging from patio homes to garden apartments. A 3.0-acre park, and 12.5 acres of riverfront park will be constructed with adjoining housing.

TABLE II-3

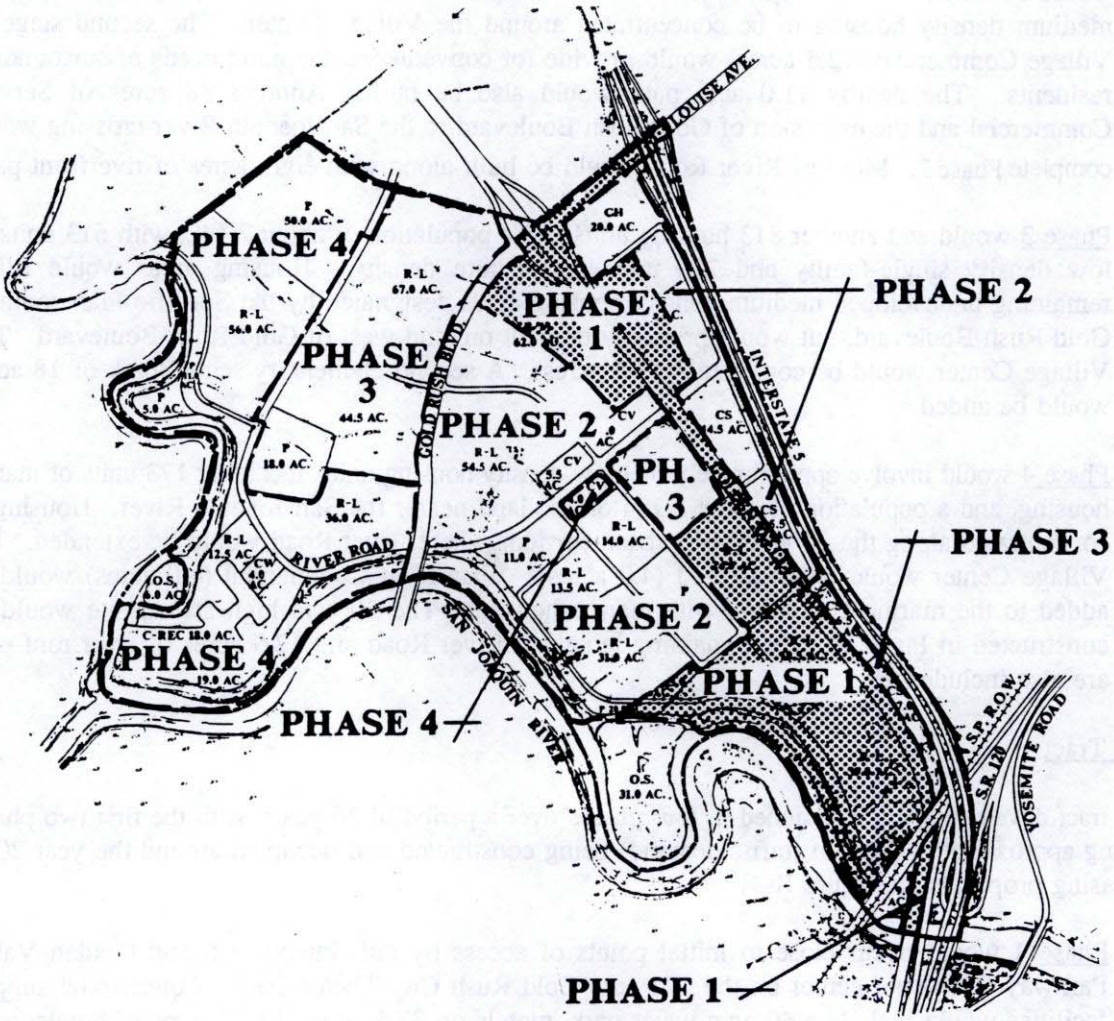
SELECTED PROJECT CHARACTERISTICS, MOSSDALE VILLAGE

CHARACTERISTIC		Residential Uses	Village, Freeway & Service Commercial	COMBINED TOTALS
LAND AREAS				
Land Area	(Acres)	708	116	**824**
RESIDENTIAL USES				
Population		9,459		**9,459**
Housing Units		3,199		**3,199**
Employed Residents		4,923		**4,923**
Average Household Income		$ 57,606		**$ 57,606**
Retail Purchases	($ 000's)	$ 99,645		**$ 99,645**
SHOPPING, OFFICE, INDUSTRIAL & COMMUNITY ("SOIC") USES				
Building Area	(000's sq. ft.)	5,593	902	**6,495**
Employment			1,802	**1,802**
Retail Sales	($ 000's)		$ 104,965	**$ 104,965**
Lodging Units			139	**139**
Lodging Revenues	($ 000's)		$ 2,095	**$ 2,095**
Average Daily Customers			23,549	**23,549**
COMBINED RESIDENTIAL AND "SOIC" USES				
Average Daily Traffic	(Trip ends, 000's)	30.4	42.4	**72.8**
Development Costs	($ 000's)	$ 546,251	$ 74,191	**$ 546,251**
Selected City Revenues		$ 1,063,728	$ 873,961	**$ 1,063,728**

Source: John W. Cone, Project Characteristics, May 1995

FIGURE II-3

MOSSDALE VILLAGE PHASING



APRIL 7, 1995

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Other commercial development would be limited to about 17.5 acres of Service Commercial between Golden Valley Parkway and the Manthey Road frontage road, Golden Valley Parkway would be constructed to a 6-lane divided width with signalized intersections and left turn lanes at intersecting Collector streets providing access to residential areas. Gold Rush Blvd. would be constructed initially between I-5 and Golden Valley Parkway, with an ultimate 6-lane divided roadway with limited direct access. A portion of the 2-lane Collector (River Road) which will run along the levee's edge will be built.

Phase 2 would involve approximately 932 housing units and a population of about 2,734, with 622 units of low density single-family (67%) and 310 units of medium density (33%). Housing would be extended southerly between the San Joaquin River and Golden Valley Parkway, with medium density housing to be concentrated around the Village Center. The second stage of Village Commercial (12.5 acres) would provide for convenience shopping needs of surrounding residents. The nearby 11.0 acre park would also be built. Another 38 acres of Service Commercial and the extension of Gold Rush Boulevard to the San Joaquin River crossing would complete Phase 2. More of River Road would be built along with eight acres of riverfront park.

Phase 3 would add another 813 housing units and a population of about 2,442, with 613 units of low density single-family and 200 units of medium density. Housing areas would fill-in remaining undeveloped medium density housing areas designated by the Specific Plan south of Gold Rush Boulevard, but would primarily be built on land west of Gold Rush Boulevard. The Village Center would be completed (13.5 acres). A second elementary school/park of 18 acres would be added.

Phase 4 would involve approximately 679 low density housing units, including 173 units of marina housing, and a population of about 2,174 on the land nearer the San Joaquin River. Housing is concentrated along the 34 acre open space corridor where River Road would be extended. The Village Center would be completed (4.0 acres). Waterfront Commercial (4.0 acres) would be added to the marina area along with marina housing. The 50 acre high school site would be constructed in Phase 4. The remaining length of River Road and 12.5 acres of riverfront park are also included.

Stewart Tract

Stewart tract development is envisioned in four phases over a period of 30 years, with the first two phases (involving approximately 50% of traffic demand) being constructed and occupied around the year 2010. [See phasing proposals on Figure II-4]

Phase 1 would occur close to initial points of access by rail, Interstate 5 and Golden Valley Parkway. It would center on the 174 acre Gold Rush City Theme Park. Commercial support facilities would include a 40 acre water park, motels on 37.5 acres, 123.5 acres of hotels, a 20-acre entertainment center, themed retail including a 50 acre farmers market, and 376 acres of golf course development constructed with low density residential. The low density residential area totals 393 acres, with 2,162 dwelling units; medium density residential would occupy 125 acres, with 1,000 dwelling units; and, high density residential would occupy 12.5 acres, with 262 dwelling units.. The first stage development of an internal system of waterways will begin. The public areas include a 15.5-acre park, a combined fire/police station on 2.0 acres and a 10 acre park/school. Other uses include a business park (129.5 acres), a transit facility (9.0 acres) and commuter parking on 14.5 acres. Open space of 61.5 acres, a marina on 30 acres, 32 acres of retail, 86 acres of lakes and wastewater treatment plant on 75.5 acres would complete Phase 1.

TABLE II-4

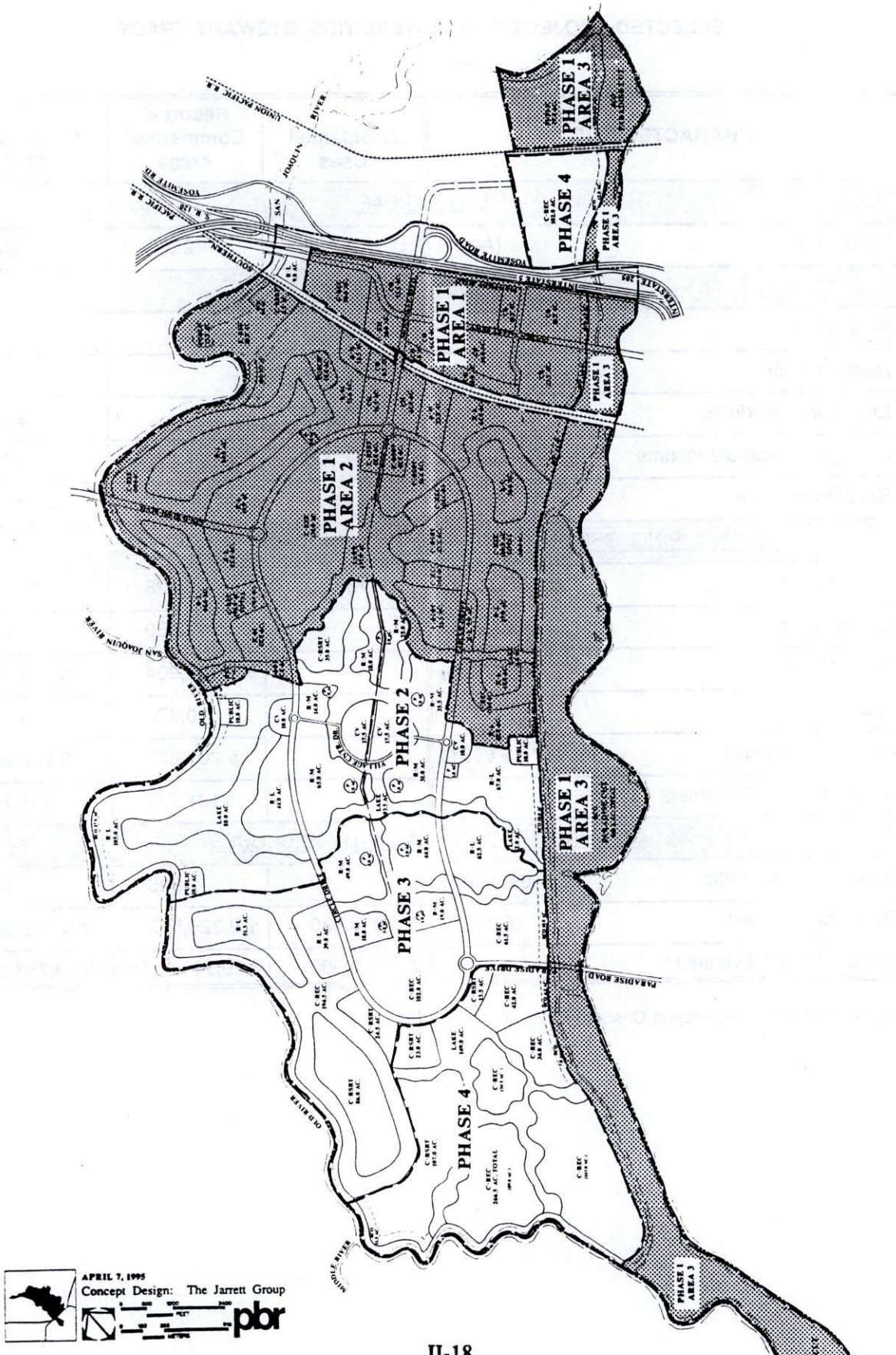
SELECTED PROJECT CHARACTERISTICS, STEWART TRACT

CHARACTERISTIC		Residential Uses	Resort & Commercial Areas	COMBINED TOTALS
LAND AREAS				
Land Area	(Acres)	1,139	2,870	**4,009**
RESIDENTIAL USES				
Population		19,810		**19,810**
Housing Units		7,170		**7,170**
Employed Residents		9,300		**9,300**
Average Household Income		$ 74,200		**$ 74,200**
Retail Purchases	($ 000's)	$ 94,900		**$ 94,900**
SHOPPING, OFFICE, INDUSTRIAL & COMMUNITY ("SOIC") USES				
Building Area	(000'S sq. ft.)	18,070	15,628	**33,698**
Employment			17,050	**17,050**
Retail Sales	($ 000's)		$ 563,904	**$ 563,904**
Lodging Units			10,370	**10,370**
Lodging Revenues	($ 000's)		$ 228,600	**$ 228,600**
Average Daily Customers			161,770	**161,770**
COMBINED RESIDENTIAL AND "SOIC" USES				
Average Daily Traffic	(Trip ends, 000's)	62	325	**387**
Development Costs	($ 000's)	$ 1,830,580	$ 2,328,500	**$ 4,159,080**
Selected City Revenues		$ 4,213,600	$ 29,540,000	**$ 33,753,000**

Source: John W. Cone, Project Characteristics, June 16, 1995

FIGURE II-4

STEWART TRACT PHASING



Phase 2 would add commercial and recreation residential facilities. The Gold Rush Boulevard and and Golden Valley Parkway extensions over the San Joaquin River would be added to improve traffic access.

For low density residential areas, 296 acres will accommodate 1,628 dwelling units. Medium density residential will accommodate 1,508 dwelling units on 188.5 acres. A centrally located Village Center on 35 acres will serve all the surrounding housing areas. Three park/schools (10 acres each) and one or two small neighborhood centers totaling 9.0 acres will be distributed among the housing areas. Other facilities will include a 2.0 acre fire station, two 10-acre neighborhood retail sites off Circle Drive, a 35 acre Hotel, 39 acres of open space and 216.5 acres of lakes will complete Phase 2.

Phase 3 housing and lodging will include low density residential of 153 acres and 842 dwelling units, medium density at 130 acres and 1,040 dwelling units, chalets on 110.5 acres and an RV park on 61.5 acres. A golf course (194.5 acres) and a second theme park on 102 acres will provide recreation. Other uses will include four neighborhood centers on six acres, 57 acres of lakes, and 10 acres of open space.

Phase 4 would expand into the westerly end of Stewart Tract, adding a 266 acre wildlife park, 149 acres of adjoining chalets, a 34 acre campground and 42 acres for an RV park next to Paradise Drive. Along Circle Drive a 23 acre hotel and supporting specialty retail on 13.5 acres will overlook the final phase of the lake system East of the I-5/I-205 "merge", a 102 acre arena/stadium would conclude Phase 4.

The phasing program for Stewart Tract is designed to minimize the impact of urbanization on existing agricultural operations on the Tract, and to allow agricultural operations to continue until the land is needed for development.

INTERCHANGEABLE ALTERNATIVE LAND USE CONFIGURATIONS

Three alternative land use configurations are described by the Specific Plan which are intended to be fully interchangeable with the land use arrangements proposed by the Specific Plan. Two of the alternatives are provided for Mossdale Village and one for Stewart Tract, as follows:

A. A lake oriented housing alternative [Mossdale Village]
B. A "no high school" alternative [Mossdale Village]
C. A marina-oriented housing alternative [Stewart Tract]

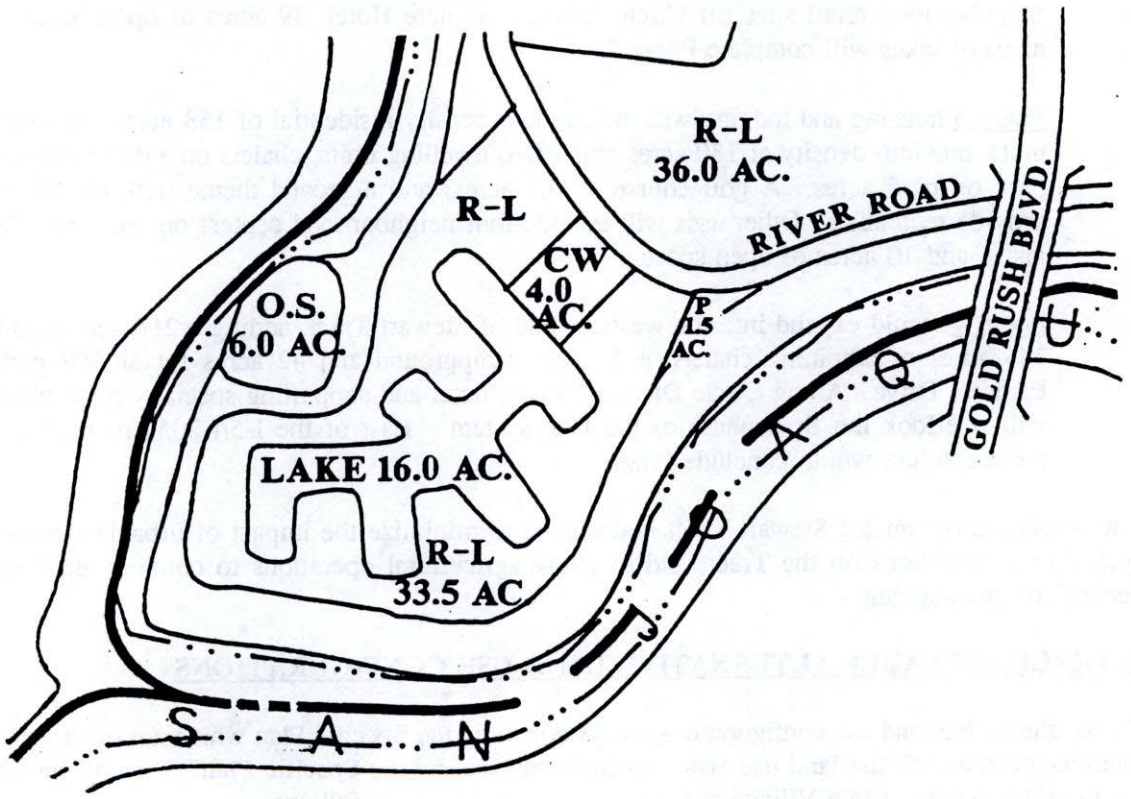
These alternative are described briefly below, and are given supplemental evaluation of their potential impacts and need for mitigation in Part V of this document. It is to be noted that the principal impacts are those affecting traffic. Except for the "no high school" alternative, the total traffic generated is essentially the same as or below the levels assumed for purposes of traffic modeling. As a consequence, primary concerns are with impacts on circulation, levee design and construction, and utility services.

Lake Oriented Housing for Mossdale Village (Land Use Alternative A - See Specific Plan, pp 35-38)

The Specific Plan proposes marina housing along the San Joaquin River at the point where it intersects with Old River. This proposal presupposes the feasibility of setback levee design and flood-proofing that will protect marina housing from periodic changes in river levels. The alternative (see below) is to construct the entire housing area with a lake orientation entirely east of the San Joaquin River levee,

involving about the same number of housing units. This would eliminate any direct interface of housing with the river environment, and would involve only a small in-channel marina along the river.

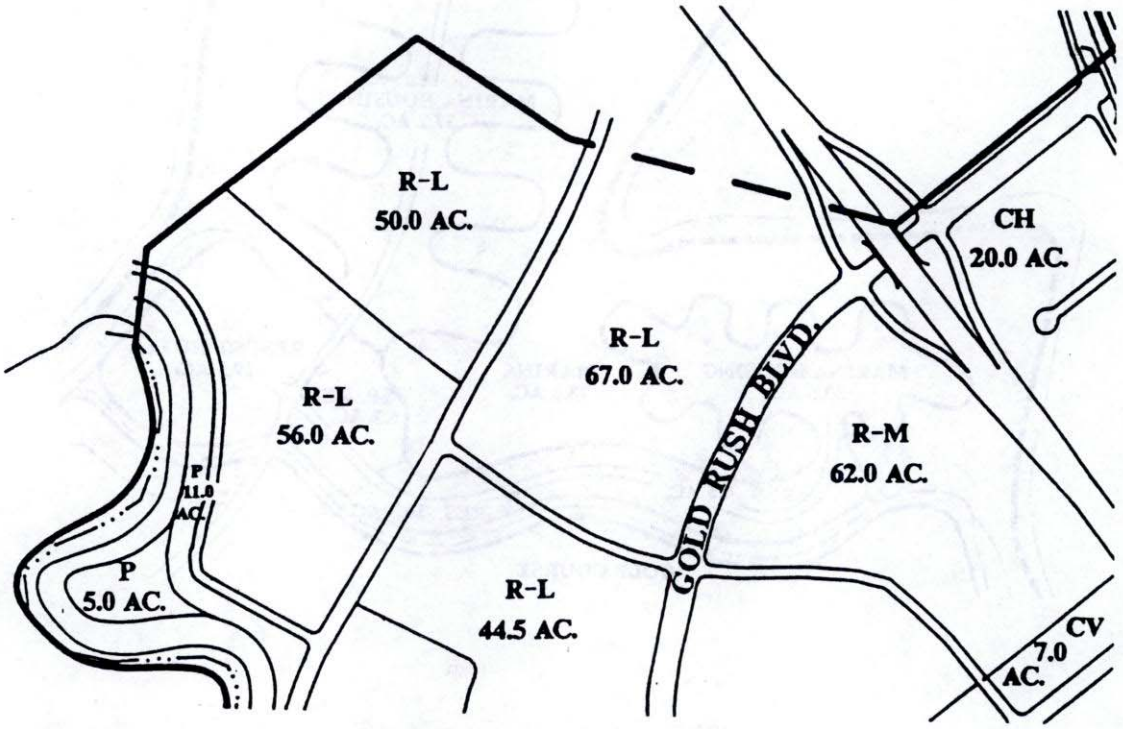
Mossdale Village - Lake Oriented Housing (Land Use Alternative A)



A No High School Alternative for Mossdale Village (See Specific Plan, pp 40-41)

This alternative would be necessitated by a decision of the Manteca Unified High School District not to utilize the property for school use. An appropriate alternative (see below) would be low density housing which would add about 275 housing units to Mossdale Village. Overall traffic generation for low density housing would be in the order of 2,750 trips per day, as compared to about half as much for a high school. However, the major impact of housing would be the addition of peak hour commute traffic to I-205, as compared to virtually no peak hour traffic being added by a high school except for localized high school-related traffic using the freeway system during the AM peak hour.

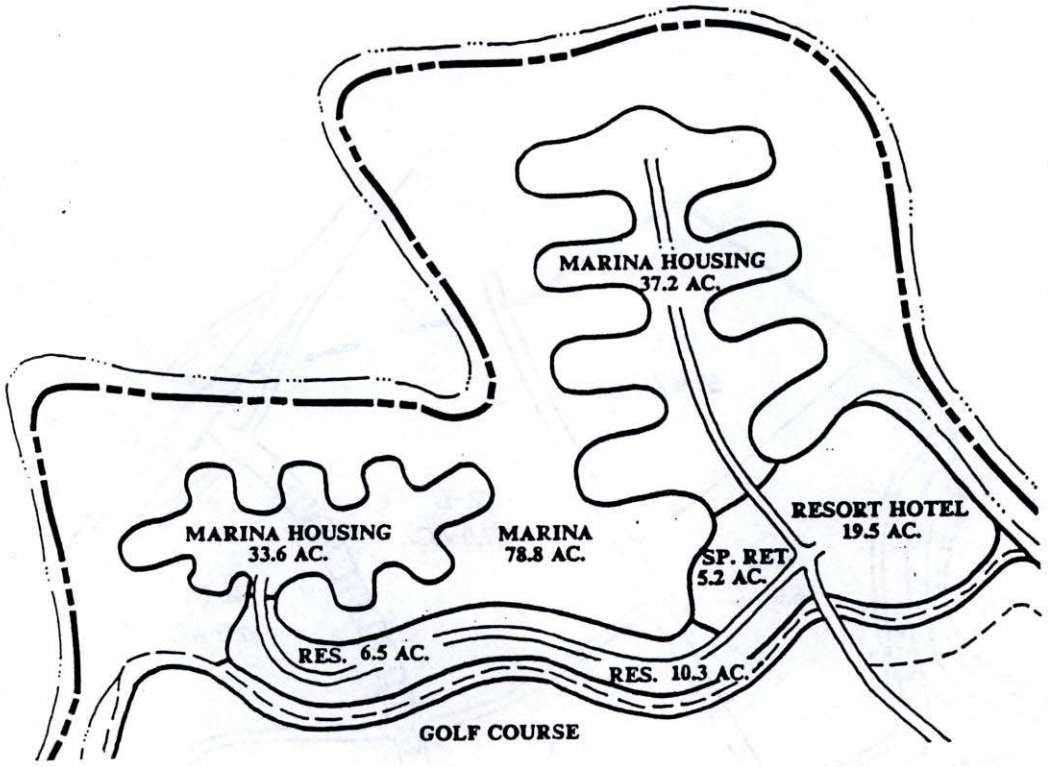
Mossdale Village - No High School (Land Use Alternative B)



A Marina-Oriented Housing Alternative for Stewart Tract (See Specific Plan, pp 47-49)

Located about midway along the Stewart Tract frontage on Old River, this alternative (see below) would substitute a marina oriented housing area for the lake oriented housing area proposed by the Specific Plan. Rather than construct the housing area outside the levee of Old River, it would be constructed inside the river levee. The number of recreation housing units would be about the same as that proposed by the Specific Plan. A 15 acre resort hotel would be located at the entrance to the complex.

Stewart Tract - Marina Oriented Housing (Land Use Alternative C)



ALTERNATIVE E - A LAND USE CONFIGURATION NECESSARY TO MATCH TRAFFIC CAPACITY LIMITATIONS OF THE MOSSDALE INTERCHANGE AND THE MERGE

Introduction

Alternate E has been developed as a separately published Addendum to the Specific Plan to reflect a determination by Caltrans on the maximum amount of peak hour traffic to be allowed to access Stewart Tract from the Mossdale interchange. Caltrans' determination stems from a concern for traffic safety along a freeway section that is already operating with some difficulty, and which can only worsen if Project traffic is allowed to access the freeway without restriction under current conditions.

The two-mile length of the I-5/I-205 merge is, in effect, an elongated freeway-to-freeway interchange. While the Mossdale interchange violates current State and Federal highway design standards, it was constructed originally for the very limited purposes of providing access to nearby agricultural lands and farmsteads, and to small marinas and mobile home parks on either side of the merge along the San Joaquin River. Under this determination, a combination of no more than 1,200 vehicles entering and leaving the site will be permitted, with no opportunity for traffic to access the main part of Stewart Tract which lays west of the S.P. Railroad. This traffic limitation dictates the need for a major alteration in the land use proposed in the vicinity of the Mossdale interchange, which is described here as Alternative E.

Development Concept

As an alternative to the entire Specific Plan, Alternative E ("Alt. E") presents a plan for a multi-faceted regional center for entertainment and recreation. [Note: throughout the discussion which follows, reference to the "Specific Plan" is the Specific Plan document as proposed before Alternative E became a necessity. Technically, Alt. E becomes a component of the original document. It differs from the Specific Plan primarily by land use and circulation proposals for the approximate 450 acres between the freeway merge and the S.P. Railroad, and for the corridor of land along the west side of the railroad extending to the Gold Rush Boulevard bridge over the San Joaquin River..

Like the full array of land use proposed by the Specific Plan, Alt. E includes theme parks, theaters, a regional commercial center, restaurants, sports facilities, shops, resorts, campgrounds, marina and a wildlife park. The regional center will link retail operations with a wide variety of entertainment activities similar in character (if not size) to new trend facilities of this type which have been developed in Los Angeles (City Walk) and Minneapolis (Mall of America). Guest accommodations include resort hotels, motels, chalets, lodges, and condominiums, and employee housing in close proximity to major commercial centers. The central lake system provided as part of the Specific Plan, and Circle Drive, are retained.

Alternative E is shown on Figure II-5, and land use comparisons with the Specific Plan are provided in Table II-5. The business park previously proposed close to the Mossdale interchange has been deleted, and only the 50 acre farmers market remains in this area. Remaining lands between the freeway merge and the railroad would be mostly retained in agricultural use with the exception of commuter and transit parking facilities accessible only from the west side of the railroad. About 280 acres of agricultural land are designated as "urban reserve" in the event that traffic problems associated with Mossdale interchange impacts on freeway operations eventually are solved.

The regional retail/entertainment center will have a high employment ratio with the capability for attracting as many as 8,000 - 12,000 guests per day. Many of these guests will originate from surrounding hotels and other attractions on Stewart Tract. The center will offer a one-stop parking opportunity, connecting with multiple transit modes providing transportation service throughout West Lathrop. A nearby transit center and related parking areas will have a skyway connection to the center. All of the options for non-auto transportation will reduce the amount of new traffic generated within West Lathrop.

The circulation pattern for Alt. E assumes freeway access to the plan area from I-5 via the Louise Avenue interchange and Gold Rush Boulevard, and from I-205 via Paradise Road. The existing buttonhook ramps at the Mossdale interchange will remain for use by surrounding landowners and visitors to the farmers market. No improvements to the existing Mossdale interchange are assumed. Golden Valley Parkway is realigned under this alternative through the southernmost part of Mossdale Village, crossing the river parallel to and west of S.P. Railroad. This alignment would accommodate sufficient right-of-way for a light rail transit facility between the elevated Parkway and the railroad, and would also serve as a levee for flood protection. Eventually, the Parkway is to be extended westerly, connecting with I-205 at a new interchange with Paradise Road. These basic changes in circulation from the Specific Plan result in a modified arterial and collector roadway system in the eastern one-third of Stewart Tract.

Land Use Program

Alternative E is comprised of: 1) a core group of uses related to commercial recreation and entertainment; 2) a wide variety of guest accommodations; 3) village center and other commercial uses; and 4) housing at various densities; and 5) supporting elements including lakes, parks, open space corridors and schools.

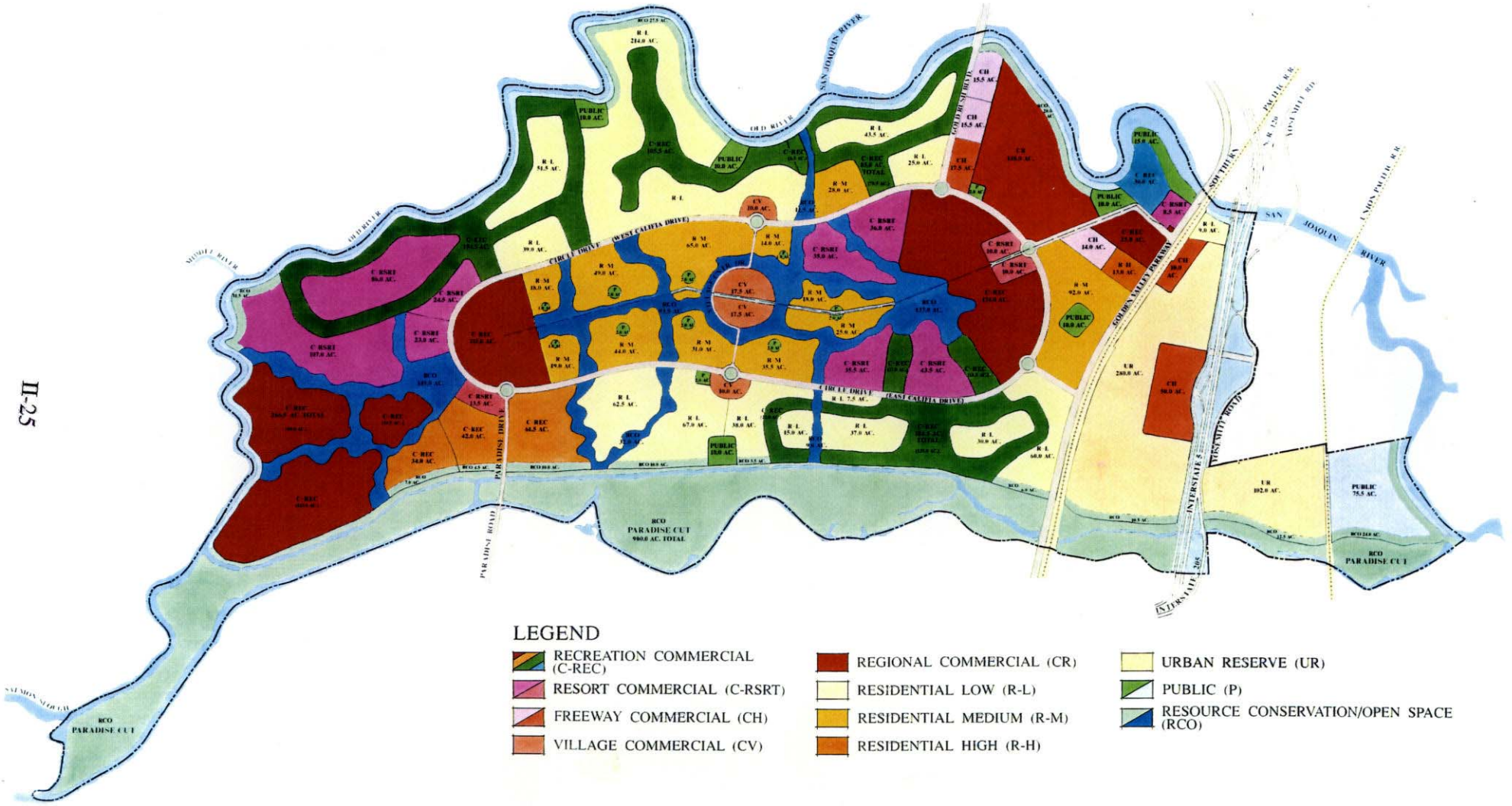


FIGURE II-5

ALTERNATIVE "E", STEWART TRACT
WEST LATHROP SPECIFIC PLAN

JUNE 26, 1995
Concept Design: The Jarrett Group

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TABLE II-5

COMPARATIVE LAND USE PROGRAMS, ALTERNATIVE "E" v. SPECIFIC PLAN

General Plan Designation	Type of Land Use	Specific Plan [Acres]	Alternative "E" [Acres]	Difference [Acres]
RC - Recreaqtion Commercial	Gold Rush City Theme Park	174.0	174.0	000.0
RC	2nd Theme Park	102.0	102.0	000.0
TS	Commuter Park-and-Ride	14.5	0.0	- 14.5[1]
RC	Water Park	40.0	25.0	- 15.0
RC	Wildlife Park	266.5	266.5	000.0
RC	Main Street Entertainment	20.0	20.0	000.0
RC	Specialty/Theme Retail	59.5	13.5	- 46.0
RC	Golf Course	571.5	571.5	+ 0.5
RC	Marina-S.J. River	30.0	30.0	000.0
RecR - Recreation Residential	Hotels	181.5	181.5	000.0
RecR	Motels	39.0	45.0	+ 6.0
RecR	Chalets	217.5	217.5	000.0
RecR	RV Park	103.5	103.5	000.0
RecR	Campground	34.0	34.0	000.0
VC	Village Center	55.0	55.0	000.0
VC	Neigh. Commer.	15.0	15.0	000.0
RegC - Regional Commercial	Farmers' Market	50.0	50.0	000.0
RegC	Retail/Entertain.	0.0	148.0	+148.0
RecR - Recreation Residential	Low Density Medium Density High Density	842.0 443.5 12.5	690.5 438.5 13.0	151.5 - 5.0 + 0.5
RecR	Business Park Transit Parking	129.5 9.0	000.0 10.0	-129.5 + 1.0

[1] Under Alternative "E", commuter parking is now dispersed among three remote parking lots located north along I-5, east along State Route 120, and west along I-205.

Table II-5, continued

General Plan Designation	Type of Land Use	Specific Plan [Acres]	Alternative "E" [Acres]	Difference [Acres]
UR - Urban Reserve	**Urban Reserve**	000.0	382.0	**+382.0**
RecC - Recreation Commercial	**Arena**	102.2	000.0	**-102.2**
FC - Freeway Commercial	**Mixed Commer./ Retail**	000.0	17.5	**+ 17.5**
RecR - Recreation Residential	**Low Density** **Medium Density** **High Density**	842.0 443.5 12.5	690.5 4 38.5 13.0	**-151.5** **- 5.0** **+ 0.5**
R	Exist. Residential	9.0	9.0	000.0
OS - Open Space	Lakes	508.5	420.5	**- 88.0**
OS	School - Parks	40.0	40.0	000.0
OS	Paradise Cut	900.0	900.0	000.0
OS	Levee OS	137.2	137.2	000.0
OS	Other OS	146.0	147.0	**+ 1.0**
Public	**Park**	15.5	25.0	**+ 9.5**
FS	Fire Stations	4.0	4.0	000.0
WWM - Wastewater Management	Wastewater Treatment Plant	75.5	75.0	000.0
Arterial/Collector Street System	**Round-a-bouts** **Internal Streets**	8.0 235.8	8.6 223.0	**+ 0.6** **- 12.8**
I-5 Freeway	**I-5 right-of-way**	134.0	139.0	**+ 5.0**
S.P. Railroad	**SPRR r-o-w**	50.5	51.2	**+ 0.7**
U.P. Railroad	UPRR r-o-w	10.0	10.0	000.0
TOTAL SITE ACREAGE		5,794.0	5,794.0	000.0

The Alt. E land use program (see Table II-V) differs from the Specific Plan in three primary ways: 1) the business park has been replaced by an urban reserve designation because of projected limitations in access from the Mossdale interchange; 2) A Phase 1 residential/golf course area has been replaced with a regional commercial retail/entertainment designation which diversifies the land use program; and 3) the arena site east of I-5 has been replaced with an urban reserve designation. The access changes have caused a changed in Project phasing assumptions, such that the phasing plans for Mossdale Village and Stewart Tract described in Chapter VII - Implementation of the Specific Plan also have changed. These three primary land use changes have necessarily led to a rearrangement of some of the other uses, as described below.

In the 450 acre corridor between I-5 and the S.P. Railroad, most of the acreage has been designated Urban Reserve. Exceptions are the existing 9.0 acres of existing residential along the river and the 50.0 acre farmers market near Mossdale Road which remain unchanged. Under Alt. E, the park-and-ride has been removed from the site to three locations at interchanges along the freeway system outside of West Lathrop. A 10 acre transit-parking area formerly located near the business park has been relocated to the northerly corner of the corridor.

Under Phase 1, most of the land immediately west of the S.P. Railroad has been rearranged along with the supporting street system. Only the 30 acre marina along the river near the S.P. Railroad remains unchanged. As a minor modification, the public park that wraps around the marina along the levee is reduced slightly to 15.0 acres. The adjoining hotel and transit station occupies 9.0 acres. A new park has been created next to the marina involving 10 acres. Adjoining those uses to the south are the water park, a 14 acre motel site and 13 acres of high density residential. A medium density residential site close by occupies 92 acres, along with a 10 acre school/park. The former alignment of Mossdale Drive has been shifted to the south, creating a low density residential area on a 60 acre site.

A regional commercial retail/entertainment complex is located on a 148 acre site between the complex of use described above and Gold Rush Boulevard. Along the westerly edge of Gold Rush Boulevard are three sites for highway commercial use. The 17.5 acre site at the intersection of Gold Rush Boulevard and Circle Drive is intended for mixed commercial/retail activities. The other two sites of 15.5. acres each are designated for motel use. The two acre fire station has been placed next to the mixed retail/commercial site on Circle Drive. These uses replace 134 acres of low density residential and 105 acres of golf course. Along the northern perimeter of the plan area, a lake of 88 acres has been converted to 105 acres of golf to off-set the loss of golf acreage resulting from creation of the regional commercial retail/entertainment center. That acreage, combined with 88.5 acres of golf closer to Gold Rush Boulevard creates space for a full 18 hole course. In the process, 229 acres of low density residential is reduced to 214 acres for development under Phase 2.

Within Circle Drive, the 20 acre Main Street entertainment center has been moved to become a focal point along a new street linking the hotel/transit/marina complex with the Gold Rush City Theme Park. Along this corridor, the skyway system has been rerouted to connect these uses, with an added skyway linkage into the regional commercial center. Although there are no further acreage changes within Circle Drive, a 36 acre resort hotel has been moved from near Mossdale Drive to a location along Circle Drive just west of its intersection with Gold Rush Boulevard.

The arena formerly planned east of the I-5/I-205 merge on 102 acres is redesignated as urban reserve under Alt. E. Combined with the 280 acres of urban reserve created west of the freeway merge, the total area devoted to urban reserve is 382 acres.

Except for the changes described above, Alternative E and the Specific Plan remain the same. The environmental consequences of these changes are described at the end of Part V of this EIR. As noted in Part I - Executive Summary, the changes result in important reductions in traffic and air quality impacts otherwise would be experienced under the Specific Plan as proposed without Alt. E.

Demographic and Economic Characteristics

Population and economic characteristics of Alternative E (Stewart Tract) are summarized in Table II-6. The selected socio-economic characteristics presented in Table II-6 can be compared with those for the Stewart Tract part of the Specific Plan as originally proposed [see Table II-4, p.II-17]. Since the characteristics for Mossdale Village remain essentially unchanged under Alternative E, the description which follows relates only to the Stewart Tract.

The job creation and level of capital investment required under Alternative E will rival that for the Specific Plan as proposed. Important downward changes will occur in several of the indexes as the result of less land to be developed and less acreage in commercial development, including population, housing, employed residents, retail purchases, building areas, retail sales and average daily traffic. Increases are expected for retail sales, lodging units, and selected City revenues. The reductions in traffic will produce corresponding decreases in air pollutant emissions; the reductions in developed land area will retain more land in agricultural use as foraging habitat for the Swainson's Hawk.

Development Phasing

The proposed phasing of development for Mossdale Village and Stewart Tract is depicted on Figures II-6 and II-7, respectively.

SUBSEQUENT PROJECTS WHICH MAY QUALIFY FOR LIMITED ENVIRONMENTAL REVIEW

This Environmental Impact Report (EIR) is designed to allow the City, and other agencies, to reduce the scope of environmental review of subsequent projects that will be consistent with the Specific Plan. In consideration of the level of environmental analysis provided in this document, many of the different types of land use proposed may singly, or in combination, qualify for reduced environmental review under this EIR. Under Section 15182 of CEQA Guidelines, residential projects which are covered adequately by a Specific Plan (and Plan EIR) may be exempt from further environmental analysis, as follows:

15182

a) Exemption. Where a public agency has prepared an EIR on a specific plan after January 1, 1980, no EIR or Negative Declaration need be prepared for a residential project undertaken pursuant to and in conformity to the specific plan if the project meets the requirements of this section.

b) Scope. Residential projects covered by this section include but are not limited to land subdivisions, zoning changes, and residential planned unit developments.

c) Limitation. This section is subject to the limitation that if after the adoption of the specific plan, an event described in Section 15162 should occur, this exemption shall not apply until the city or county which adopted the specific plan completes a subsequent EIR or a supplement to an EIR on the specific plan. The exemption provided by this section shall again be available to residential projects after the Lead Agency has filed a Notice of Determination on the specific plan as reconsidered by the subsequent EIR or supplement to the EIR.

TABLE II-6

SELECTED PROJECT CHARACTERISTICS UNDER ALTERNATIVE E, STEWART TRACT

CHARACTERISTIC		Residential Uses	Resort & Commercial Areas	COMBINED TOTALS
LAND AREAS				
Land Area	(Acres)	983	2,210	**3,193**
RESIDENTIAL USES				
Population		17,025		**17,025**
Housing Units		6,307		**6,307**
Employed Residents		7,902		**7,902**
Average Household Income		$ 73,900		**$ 73,900**
Retail Purchases	($ 000's)	$ 83,200		**$ 83,200**
SHOPPING, OFFICE, INDUSTRIAL & COMMUNITY ("SOIC") USES				
Building Area	(000'S sq. ft.)	15,850	14,990	**30,840**
Employment			16,650	**16,650**
Retail Sales	($ 000's)		$ 754,000	**$754,000**
Lodging Units			10,490	**10,490**
Lodging Revenues	($ 000's)		$ 229,800	**$ 229,800**
Average Daily Customers			165,700	**165,700**
COMBINED RESIDENTIAL AND "SOIC" USES				
Average Daily Traffic	(Trip ends, 000's)	53	318	**371**
Development Costs	($ 000's)	$ 1,607,800	$ 2,214,800	**$ 3,822,600**
Selected City Revenues		$ 3,698,200	$ 31,376,400	**$ 35,074,600**

Source: John W. Cone, Project Characteristics, June 16, 1995

FIGURE II-6

MOSSDALE VILLAGE PHASING UNDER ALTERNATIVE E

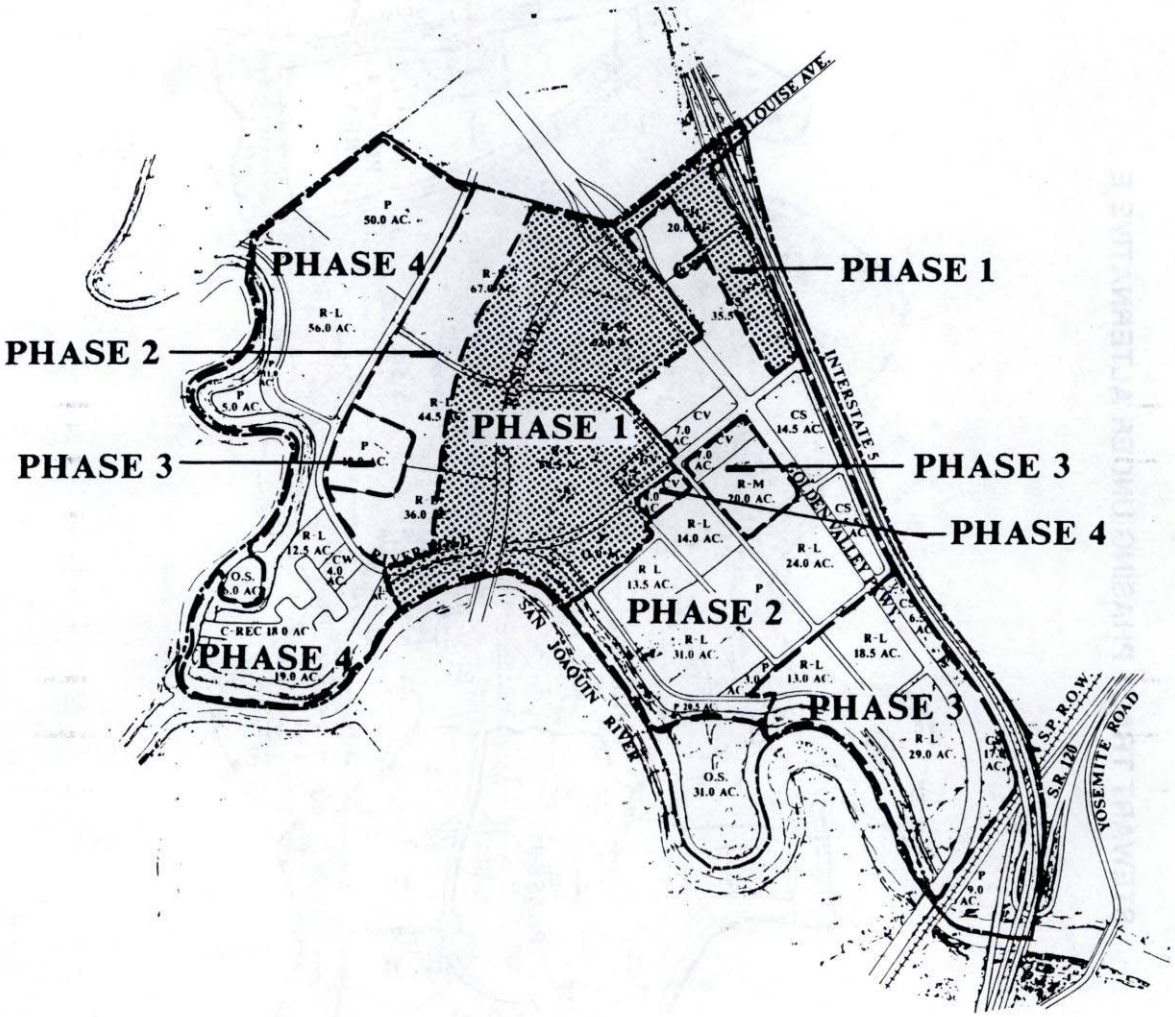
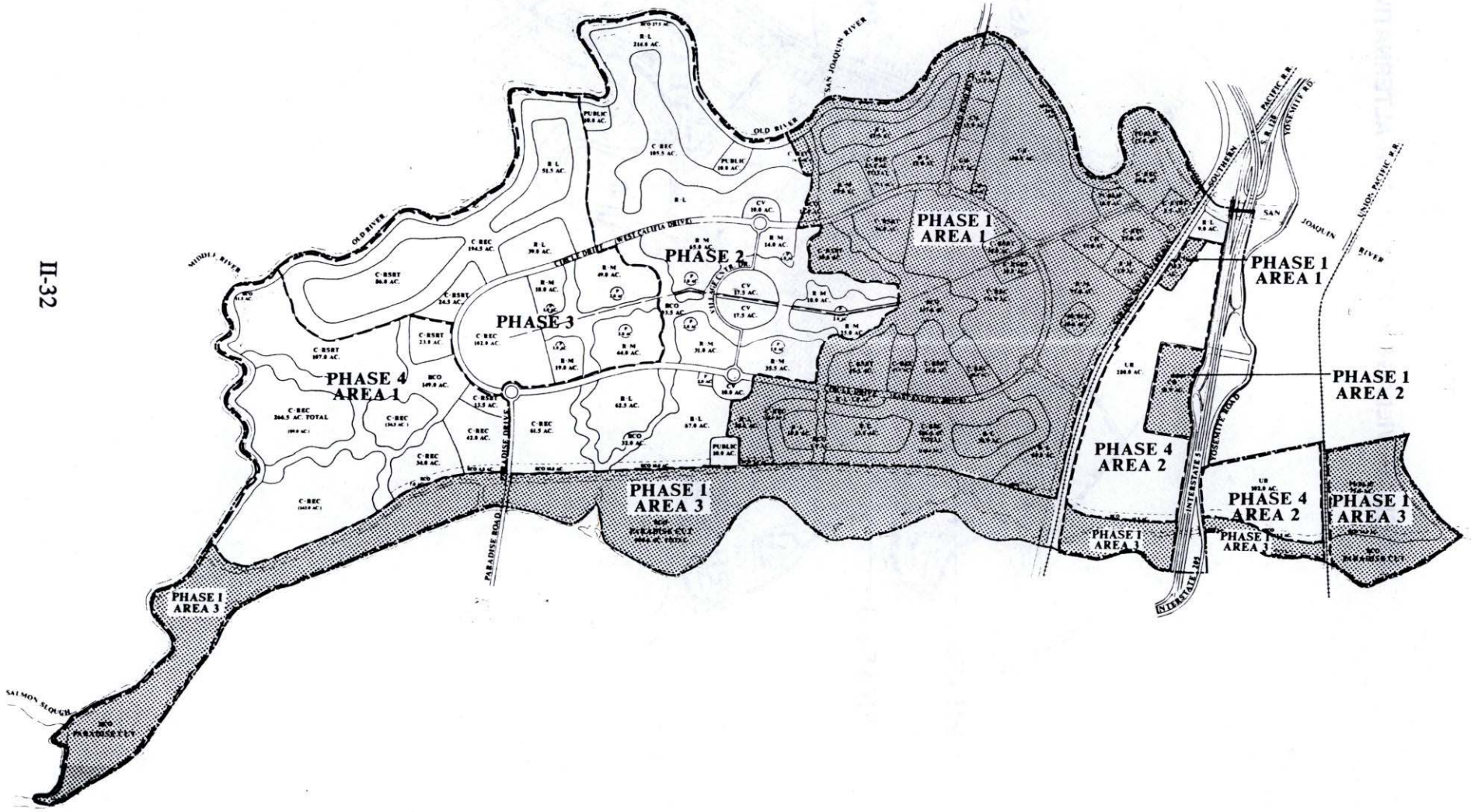


FIGURE II-7

STEWART TRACT PHASING UNDER ALTERNATIVE E



JUNE 26, 1995
Concept Design: The Jarrett Group

A companion Section of CEQA Guidelines (Section 15181) also allows approvals for the construction of neighborhood commercial facilities with the use of the EIR on the specific plan. Whether or not a subsequent project qualifies under Sections 15181 and 15182 of CEQA Guidelines, all subsequent projects will be subject to review in the form of an Initial Study at the time of submitting applications to the City for development regulation review and approval. The Initial Study shall be prepared in accordance with guidelines and requirements of the California Environmental Quality Act (CEQA), as amended. The Initial Study shall provide the following:

1. An analysis of whether the subsequent project may cause any significant effect on the environment not previously examined in the EIR.

2. A determination of whether the subsequent project was described in the EIR as being within the scope of the Specific Plan.

For projects which qualify under CEQA Sections 15181 and 15182, that the proposed subsequent project will have no "additional significant effect on the environment" that was not already identified in the Specific Plan EIR, and that no new or additional mitigation measures or alternatives are required, the City's Lead Agency review would be complete if accompanied by a written finding stating that the proposed subsequent project is "within the scope of the project covered by the Specific Plan EIR"

PART III

THE ENVIRONMENTAL SETTING

INTRODUCTION

The description of the environmental setting provides considerable detail on the existing physical conditions affecting the Project site and its surroundings. Further description of existing conditions is provided, as necessary, for each of the impact topics covered in Part V of this EIR.

REGIONAL PERSPECTIVE

The location of the City of Lathrop and the West Lathrop Planning Area in the region is shown on Figure III-1. Lathrop is strategically located at the crossroads of highway, rail, air transportation, water, and electric power facilities which provide access to and/or serve much of the entire State. Lathrop is also located at the southern edge of the Sacramento-San Joaquin Delta, which is perhaps the most ecologically complex and varied region of the State. The Delta contains much of the State's remaining wetlands, significant fisheries and wildlife habitat, productive agricultural lands, water resource facilities important to the statewide system of water distribution, and major recreation resources. As shown on Figure III-4, Lathrop lays in proximity to a series of regional faults which have potential for serious earthquake activity in North-Central California.

LAND USE

Regional Conditions

Lathrop sets in close proximity to the Stockton metropolitan area to the north, the City of Manteca to the east and the City of Tracy to the west. Most of the intervening land is in agricultural use. However, residential, commercial and industrial development has been occurring on either side of I-5 from South Stockton and the unincorporated community of French Camp to Roth Road at Lathrop's north city limits. Major projects have included the Weston Ranch residential community, several small industrial parks and a multi-modal transportation center (on Roth Road). A mixed pattern of older residential acreage, industries and service commercial uses, and vacant parcels limits development opportunity in a number of areas along the I-5 freeway.

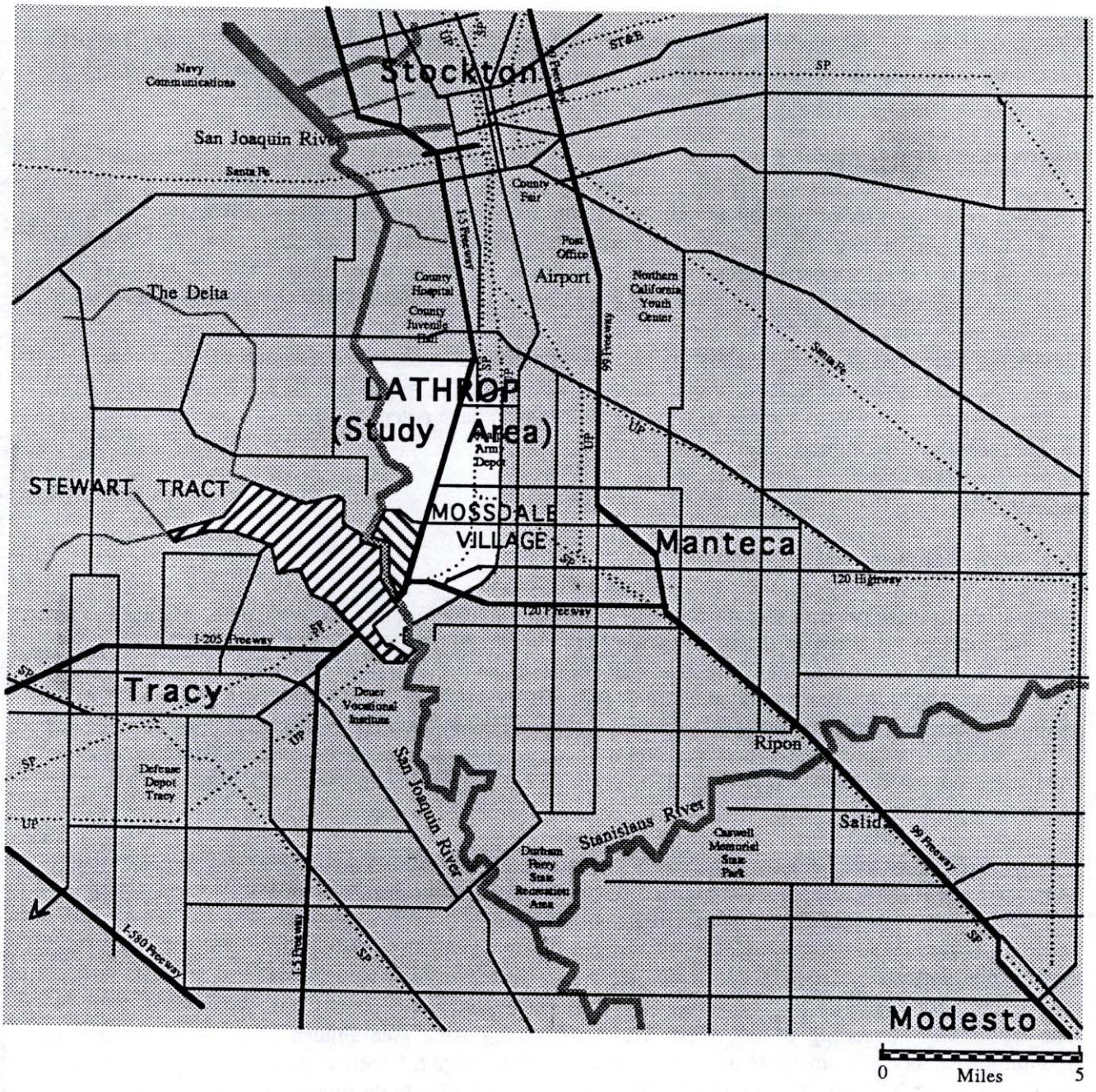
When viewed on an even broader scale (see Figure III-1), Lathrop sets in the middle of a large and highly productive agricultural area which comprises the northern part of the San Joaquin Valley and the southern and eastern reaches of the Sacramento-San Joaquin Delta.

Local Conditions

The environmental setting of the West Lathrop Planning Area (see Figure III-2) is dominated by agricultural lands and farmsteads on either side of the San Joaquin River, with a scattering of non-farm residences along Manthey Road close to the River and a small mobile home residential marina at the Manthey Road bridge on Stewart Tract. The Planning Area contains approximately 6,955 acres and is essentially devoid of urbanization. All of the urban development that has occurred in the vicinity in recent years has involved residential, freeway commercial and industrial expansion within the Lathrop City Limits east of Interstate 5.

FIGURE III-1

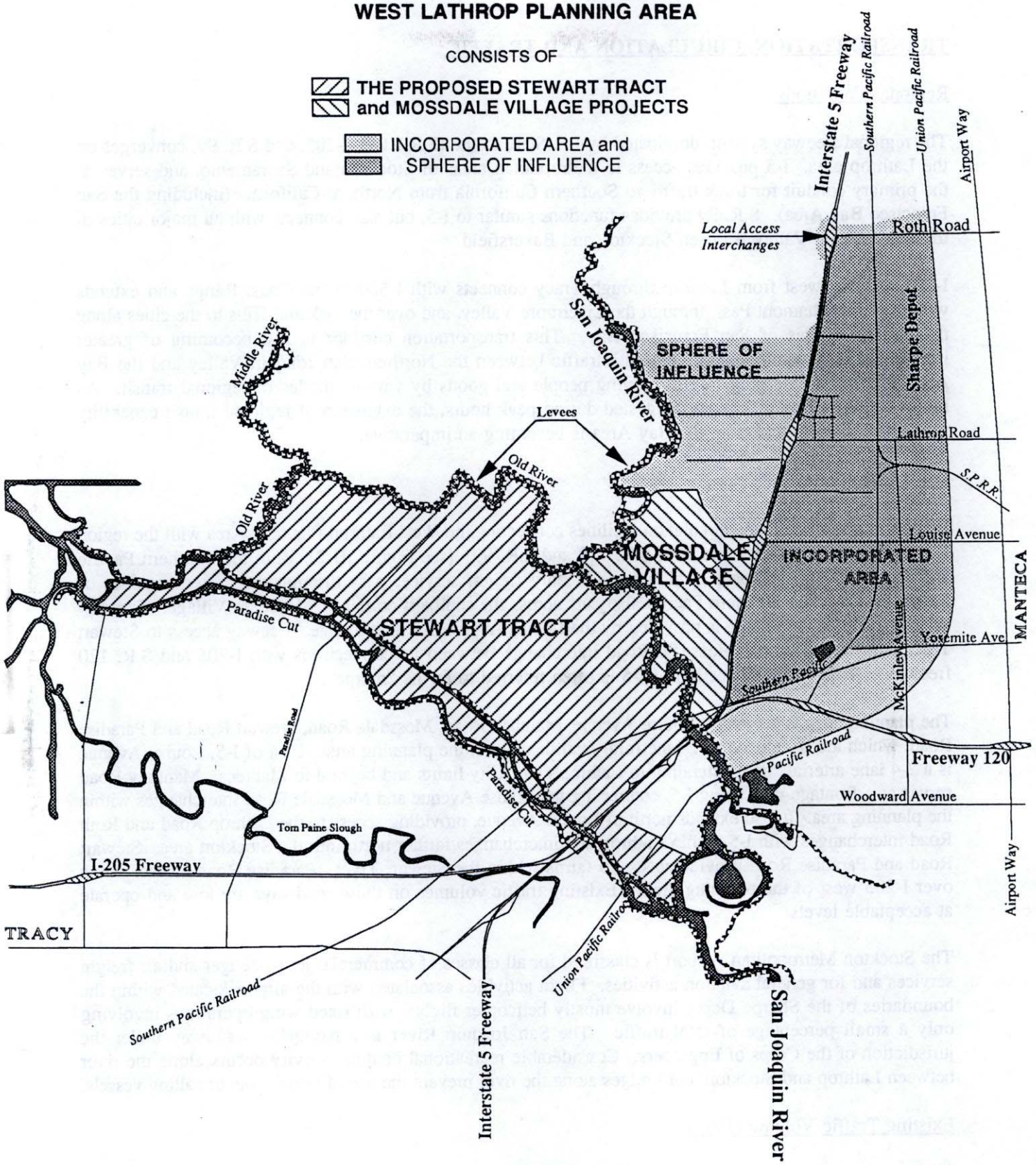
LOCATION IN THE REGION



Grunwald & Associates ... JWC

FIGURE III-2

WEST LATHROP PLANNING AREA



TRANSPORTATION, CIRCULATION AND TRAFFIC

Regional Conditions

The regional freeway system, dominated by I-5, State Route (S.R.) 120, I-205, and S.R. 99, converges on the Lathrop area. I-5 provides access to metropolitan areas of Stockton and Sacramento, and serves as the primary conduit for truck traffic to Southern California from Northern California (including the San Francisco Bay Area). S.R. 99 provides functions similar to I-5, but also connects with all major cities of the San Joaquin Valley between Stockton and Bakersfield.

I-205 heading west from Lathrop through Tracy connects with I-580 at the Coast Range and extends westerly over Altamont Pass, through the Livermore Valley, and over the Oakland Hills to the cities along the easterly shores of San Francisco Bay. This transportation corridor is fast becoming of greater importance in accommodating commute traffic between the Northern San Joaquin Valley and the Bay Area, and in its emerging role in moving people and goods by various modes of regional transit. As highway traffic becomes more congested during peak hours, the extension of regional transit capability from the Valley to and from the Bay Area is becoming an imperative.

Local Conditions

Primary transportation and circulation facilities connecting the West Lathrop Planning Area with the region include Interstate 5, Interstate 205, S.R. 120 and S.R. 99. [see Figure III-2] Both the Southern Pacific and Union Pacific railroads, which provide only freight service, pass through the eastern reaches of Stewart Tract. The Southern Pacific also cuts across the southern corner of Mossdale Village. Freeway access to Mossdale Village is provided by the Louise Avenue/I-5 interchange; freeway access to Stewart Tract is provided by the Mossdale Road interchange between its connections with I-205 and S.R. 120 freeways. This two mile section of I-5 is often referred to as the "merge".

The planning area is served by Louise Avenue, Manthey Road, Mossdale Road, Stewart Road and Paradise Road, which are developed as 2-lane rural facilities within the planning area. East of I-5, Louise Avenue is a 2-4 lane arterial street extending to Lathrop's east City limits and beyond to Manteca. Manthey Road serves as a frontage road along I-5, connecting the Louise Avenue and Mossdale Road interchanges within the planning area. It also extends north of Louise Avenue, providing access to the Lathrop Road and Roth Road interchanges with I-5 within Lathrop and interchanges farther north into the Stockton area. Stewart Road and Paradise Road provide access to farms within the Stewart Tract. Paradise Road crosses south over I-205 west of the planning area. Existing traffic volumes on these roadways are low and operate at acceptable levels.

The Stockton Metropolitan Airport is classified for all classes of commercial jet passenger and air freight services and for general aviation activities. Flight activities associated with the airport located within the boundaries of the Sharpe Depot involve mostly helicopter flights, with fixed wing operations involving only a small percentage of total traffic. The San Joaquin River is a navigable waterway under the jurisdiction of the Corps of Engineers. Considerable recreational boating activity occurs along the river between Lathrop and Stockton, but bridges along the river prevent the use of large boats or sailing vessels.

Existing Traffic Volume (1993)

Interstate 5 has an annual ADT (average daily traffic volume) of about 62,000 through the center of Lathrop and a peak month ADT of about 69,000. Where I-5 merges with I-205 southwest of town at Mossdale Road, annual ADT is closer to 95,000 with a monthly peak close to 107,000. State Route 120

has an annual ADT of about 45,000 west of the Yosemite Avenue undercrossing. Annual ADT on I-205 is 65,000 just west of I-5. Overall, traffic on the freeway system has been increasing at an annual rate of about 5%.

Existing (summer, 1993) weekday and Saturday peak hour traffic volumea are shown on Figures III-3, -4 and -5 at various locations along the freeway and local surface street system. Figures III-3-A, -B and -C show weekday AM peak hour volumes; Figures III-4-A, -B and -C show PM Friday peak hour volumes; and Figures III-5-A, -B, and -C show Saturday peak hour volumes. Figure III-5-D shows unacceptable levels of service for weekday and Saturday peak hour volumes. Table III-0 indicates existing intersection level of service. This data provides a firm basis for determining the impacts of projected traffic volumes under the Specific Plan as described in Part V.

Based upon Caltrans historical count data and expected peak traffic hours of the Project, the following highest traffic hours of the day adjacent to the Project site were selected for purposes of analysis:

- Weekday AM peak hour 7:00-8:00
- Weekday PM peak hour 4:00-5:00
- Saturday AM peak hour 11:00-Noon

Traffic counts were conducted by Crane Transportation Group (CTG) in May/June 1993 at interchanges and intersections serving the Project site for all three of the above time periods. Freeway volumes and weave movements were also counted along the I-5 "merge" to determine weaving patterns between the freeway-to-freeway connections with S.R. 120 and I-205. This data has been supplied to Caltrans. CTG freeway volume counts were factored upward (based on Caltrans count information) to reflect peak operating months of the Project theme parks. PM counts were factored to reflect Friday afternoon conditions as PM volumes on this day of the week are typically highest.

Intersection Operation

Intersections, rather than roadway segments between intersections, are almost always the capacity-controlling locations for any circulation system. Signalized intersection operation is graded based upon two different scales. The first scale employs a grading system called Level of Service (LOS) which ranges from Level A, (indicating uncongested flow and minimum delay to drivers, down to Level F, (indicating significant congestion and delay on most or all intersection approaches. The LOS scale is also associated with a Volume-to-Capacity (V/C) ratio.[1] The V/C ratio has a minimum 0.10 change for each service level change. The V/C ratio designations allow a more detailed examination of the impacts of a particular project. Greater detail about signalized analysis methodologies is provided in Appendix B.

Unsignalized intersection operation is graded using the LOS A through F scale. All-way stop intersections receive one letter designation reflecting operation of the entire intersection. However, no V/C values are calculated. Intersections with side streets only stop-sign controlled also are evaluated using the LOS scale. However, unlike signalized or all-way stop analysis where the LOS designations pertain to the entire intersection, LOS designations for side street stop sign control analysis are computed for individual turn and through movements rather than for the entire intersection. [See Appendix B for greater detail on methodologies]

The City of Lathrop uses LOS D as the poorest acceptable operation at signalized intersections. It has no minimum standard for all-way stop sign controlled locations. Typically, all-way stop standards are the

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[1] Transportation Research Board Circular 212.

same as signalized. The minimum LOS recommended for side street stop sign controlled intersections is LOS E.

Table III-0 presents existing levels of service at intersections in close proximity to the Project site. Currently, all intersections operate acceptably during all peak time periods (weekday AM and PM peak hours, and Saturday AM peak hour).

TABLE III-0

EXISTING INTERSECTION LEVEL OF SERVICE
[1993]

Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour
Louise Avenue I-5 Northbound Ramps (off-ramp stop sign controlled)	A[1]	C	C
Louise Avenue I-5 Southbound Ramps (off-ramp stop sign controlled)	A[2]	C	C
Yosemite Avenue/S.R. 120 Eastbound Ramps (off-ramp stop sign controlled)	A[3]	B	A
Yosemite Avenue/S.R. 120 Westbound Ramps (off-ramp stop sign controlled)	A[4]	A	A
Louise Avenue/Manthey Road (Louise Avenue stop sign controlled)	A	A	A

[1] Unsignalized level of service - westbound left turn
[2] Unsignalized level of service - southbound left turn
[3] Unsignalized level of service - eastbound left turn
[4] Unsignalized level of service - northbound left turn

Source: Crane Transportation Group

Existing Freeway Operation

Per Caltrans standards, the poorest acceptable operation is LOS D. With an assumed capacity @ LOS D = 1,850 vehicles per lane per hour,[2] the locations that currently have unacceptable operation are presented in Figure III-5-D for the following time periods:

- Weekday AM peak hour
- Weekday PM peak hour.
- Saturday AM peak hour

The only unacceptable freeway operation occurs during the weekday PM peak hour on eastbound I-205 from west of the MacArthur interchange to I-5, and on eastbound S.R. 120 to the east of the Yosemite Avenue interchange.

[2] **Highway Capacity Manual**, Transportation Research Board Special Report 209, 70 mph design speed.

Signalization Needs

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major roadway where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e., increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are 11 possible tests for determining if a traffic signal is warranted. These tests, called "warrants", consider criteria such as actual traffic volume, pedestrian volume, presence of school children and accident history. Usually, two or more warrants must be met before a signal is installed. In this report, the test for peak hour volumes (Warrant #11) has been applied. When Warrant 11 is met there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate. These rigorous analyses are described in Appendix D of the Caltrans Traffic Manual, while Warrant 11 is presented in Appendix B of this report.

Currently, no unsignalized intersections that could provide primary access to the Project site have volumes meeting or exceeding peak hour signal warrant criteria.

Planned Roadway Improvements

Caltrans:[3]

The S.R. 120 freeway between I-5 and S.R. 99 is currently being widened from a 3-lane facility up to a 4-lane facility (two lanes in each direction). As part of this construction, two new ramps are being added to the Yosemite Avenue interchange (westbound off and eastbound on) and a new interchange is being provided at Union Road in Manteca. Construction is expected to be completed by the end of 1995.

I-205 is projected to be widened from 4-lanes up to 6-lanes from Tracy west to I-580 between the years 2000 and 20005. Widening from four to six lanes between Tracy and I-5 is tentatively programmed between 2005 and 2010.

City of Lathrop:[4]

Stage I improvements at the Louise Avenue/I-5 interchange are planned for the summer of 1995. Improvements will include signalizing both ramp intersections and widening both the northbound and southbound off-ramps to 2- lanes at their surface street intersections with Louise Avenue. Louise Avenue will be widened to 4-lanes in its underpass of the I-5 freeway to include back-to-back left turn lanes on the approaches to each on-ramp as well as two eastbound travel lanes. Additional pavement widening will also be provided at each intersection to facilitate truck turn movements.

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3 Conversation with Mr. Matt Bailey, Caltrans District 10 Engineer.

4 Conversation with Mr. Glenn Gebhardt, Lathrop City Engineer

FIGURE III-3-A

EXISTING AM PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES

Along I-5 North of SR 120 and SR 120

(Weekday, 7:00 - 8:00 AM)

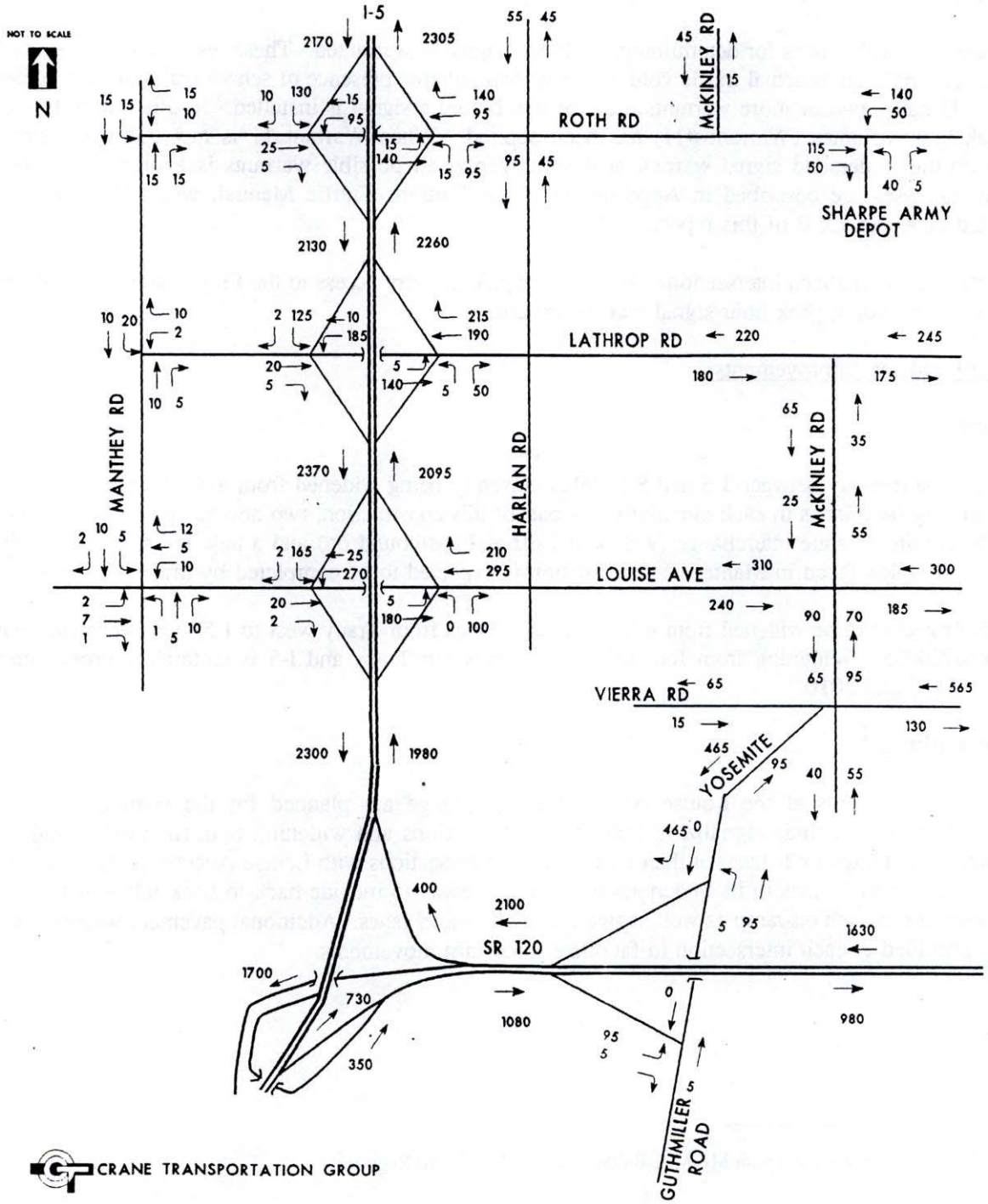


FIGURE III-3-B

EXISTING AM PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES
Along I-5 from I-205 to SR 120 Including Manthey and Mossdale Ramps
(Weekday, 7:00 - 8:00 AM)

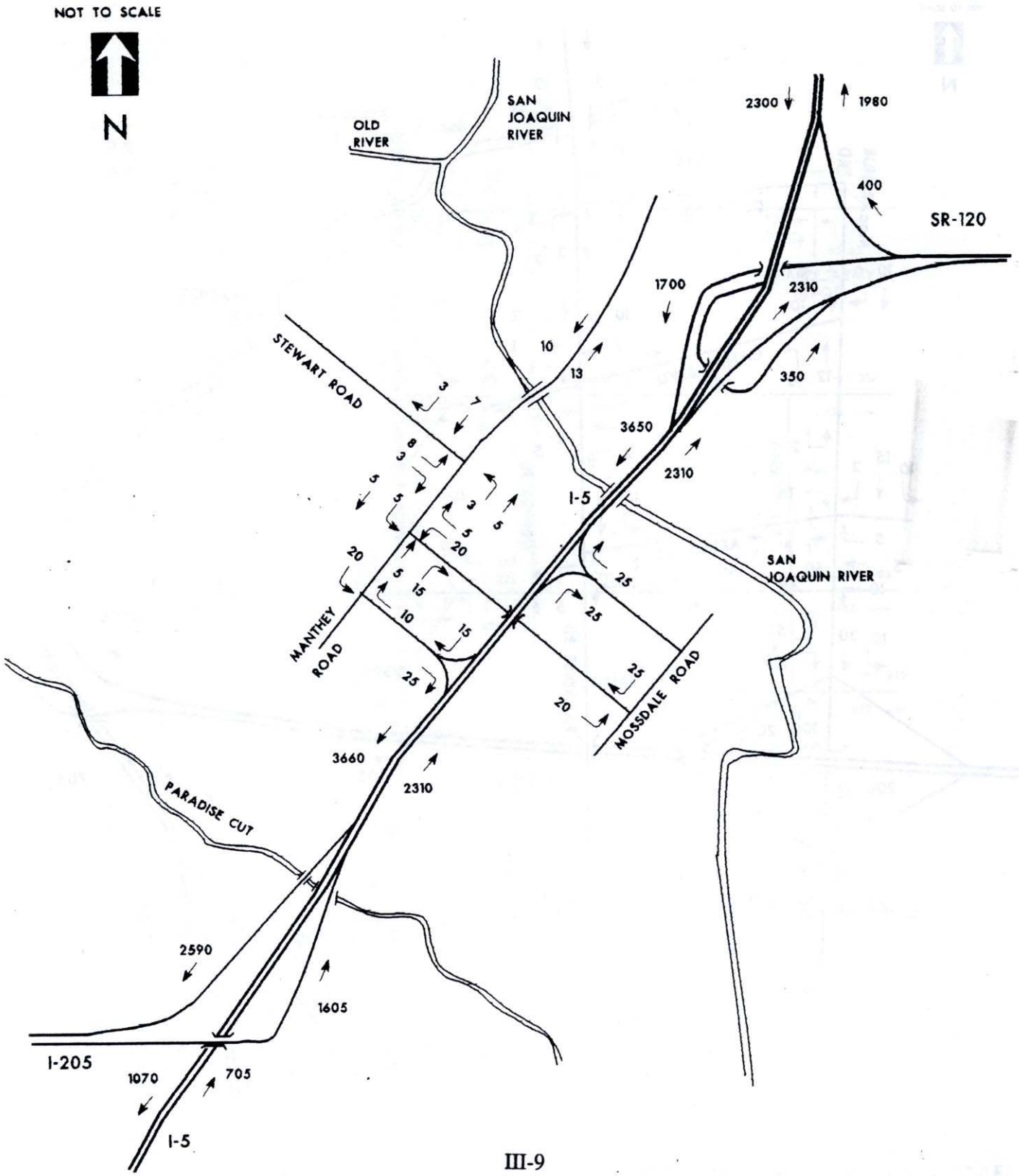
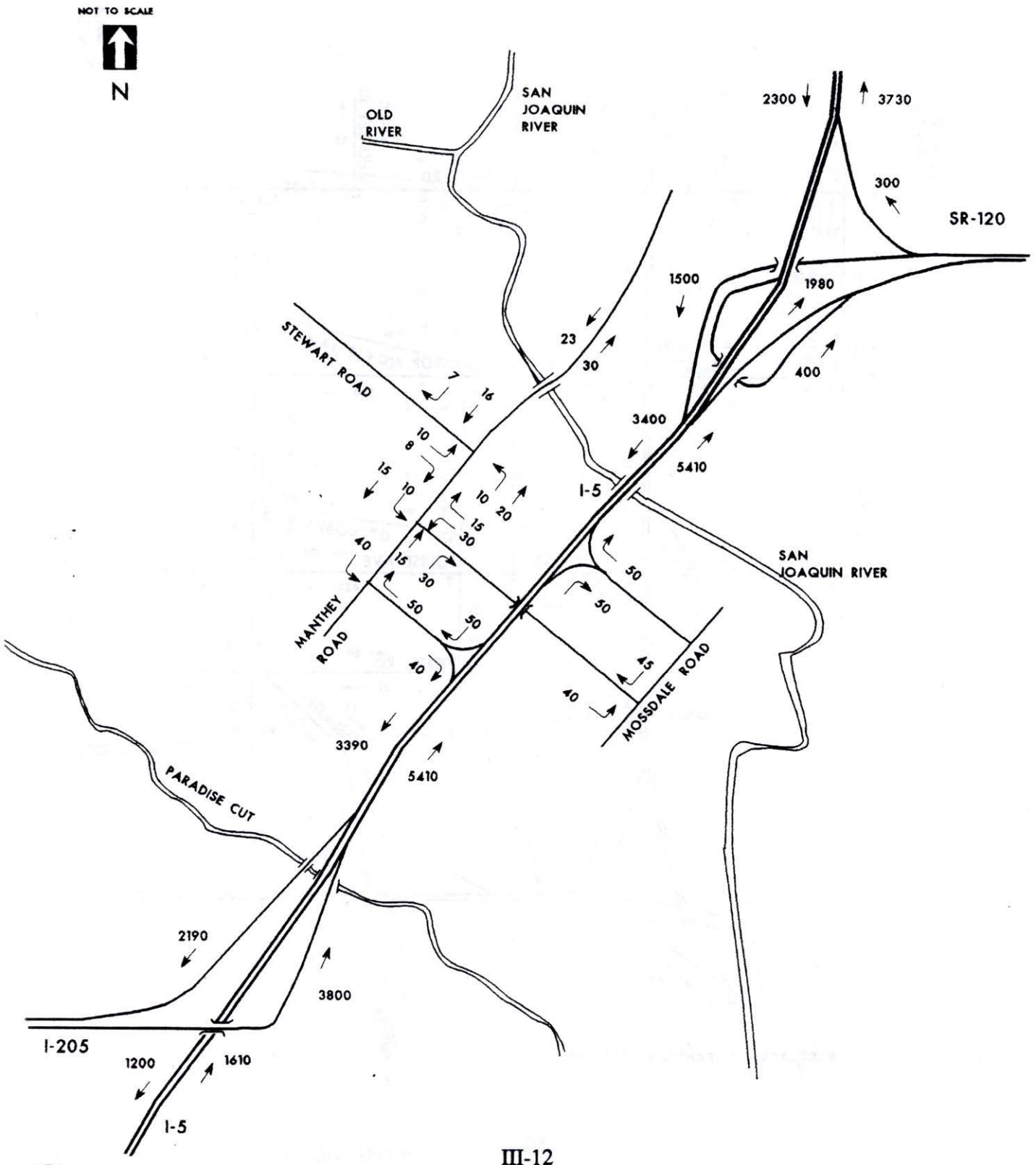


FIGURE III-4-B

EXISTING PM PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES

Along I-5 From I-205 To SR 120, Including Manthey and Mossdale Ramps
(Friday, 4:00 - 5:00 PM)



CRANE TRANSPORTATION GROUP

FIGURE III-4-C

EXISTING AM PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES

Along I-205 West of I-5 and I-5 South of I-205

(Friday, 4:00 - 5:00 PM)

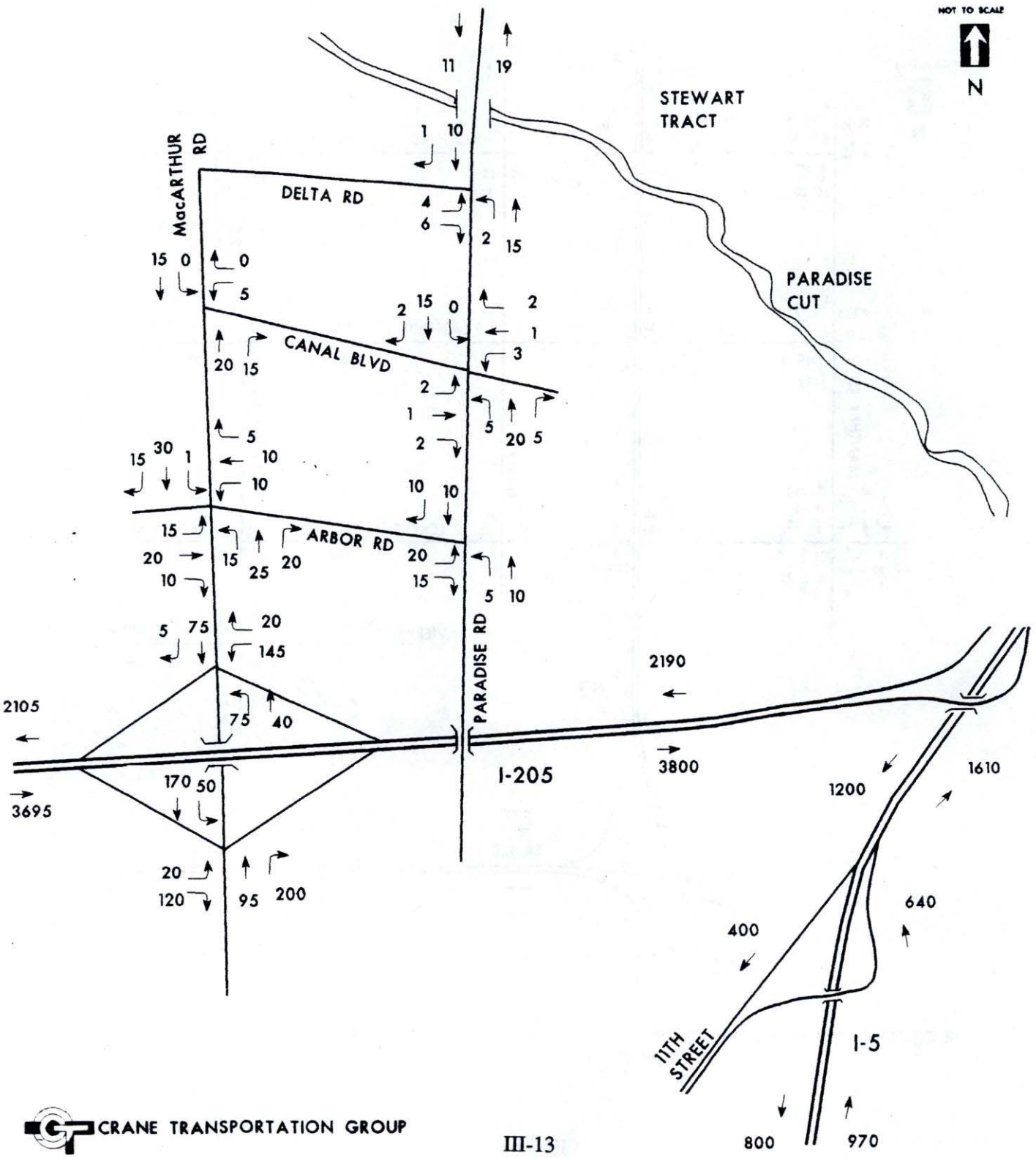


FIGURE III-5-A

EXISTING SATURDAY PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES

Along I-5 North of SR 120 and SR 120

(11:00 AM - 12:00 PM)

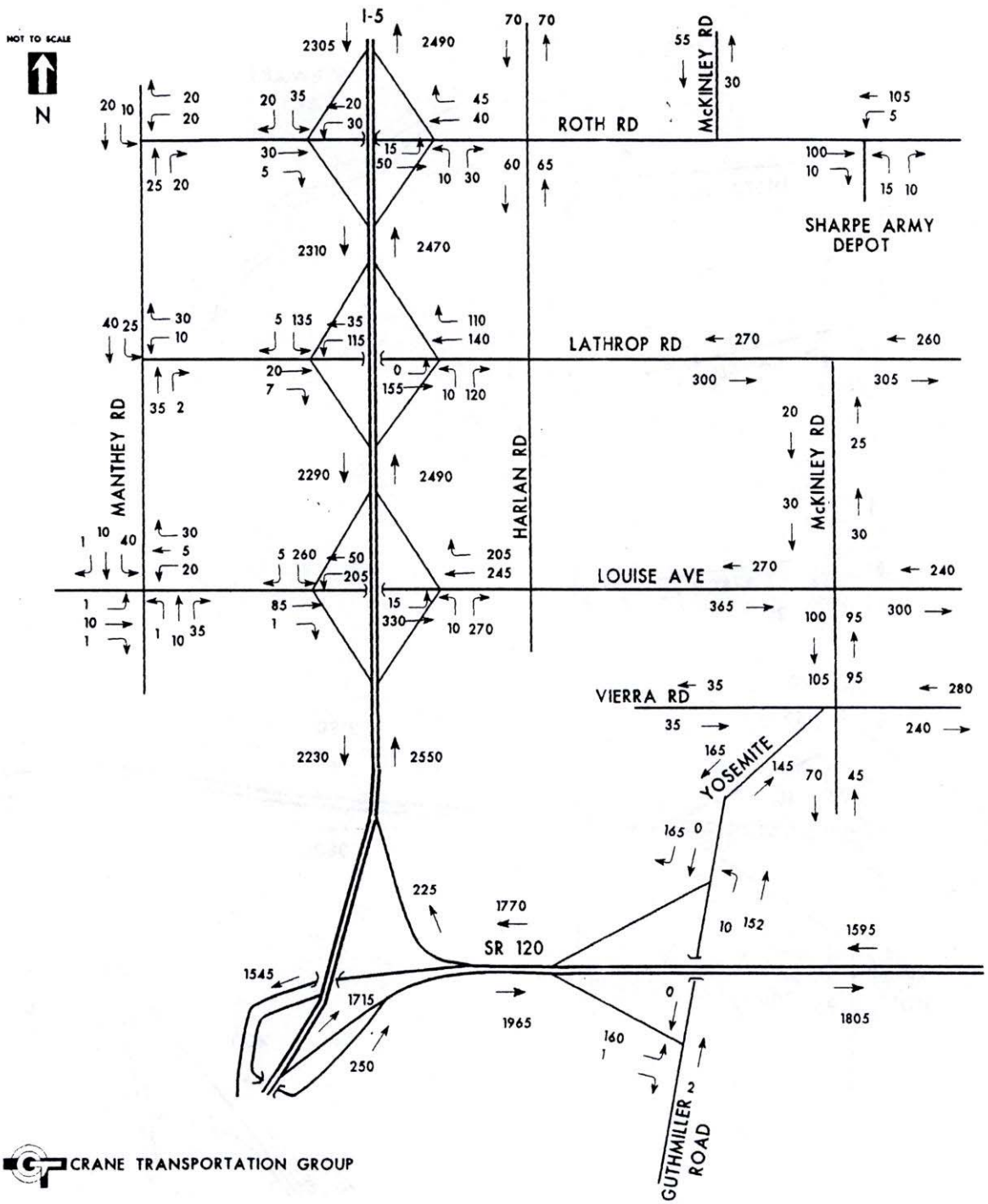


FIGURE III-5-B

EXISTING SATURDAY PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES

Along I-5 from SR 205 to SR 120, Including Manthey and Mossdale Ramps

(11:00 AM - 12:00 PM)

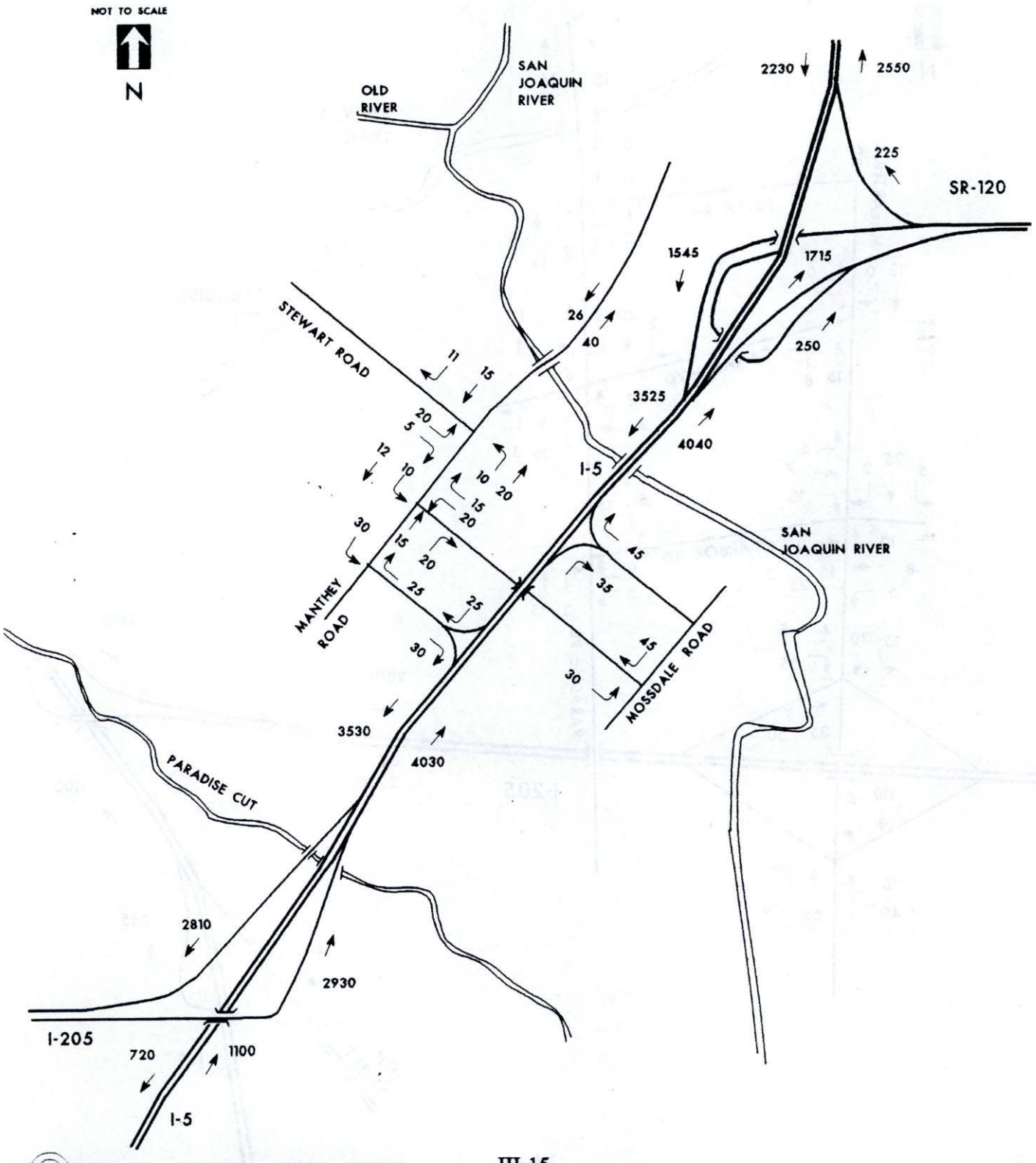
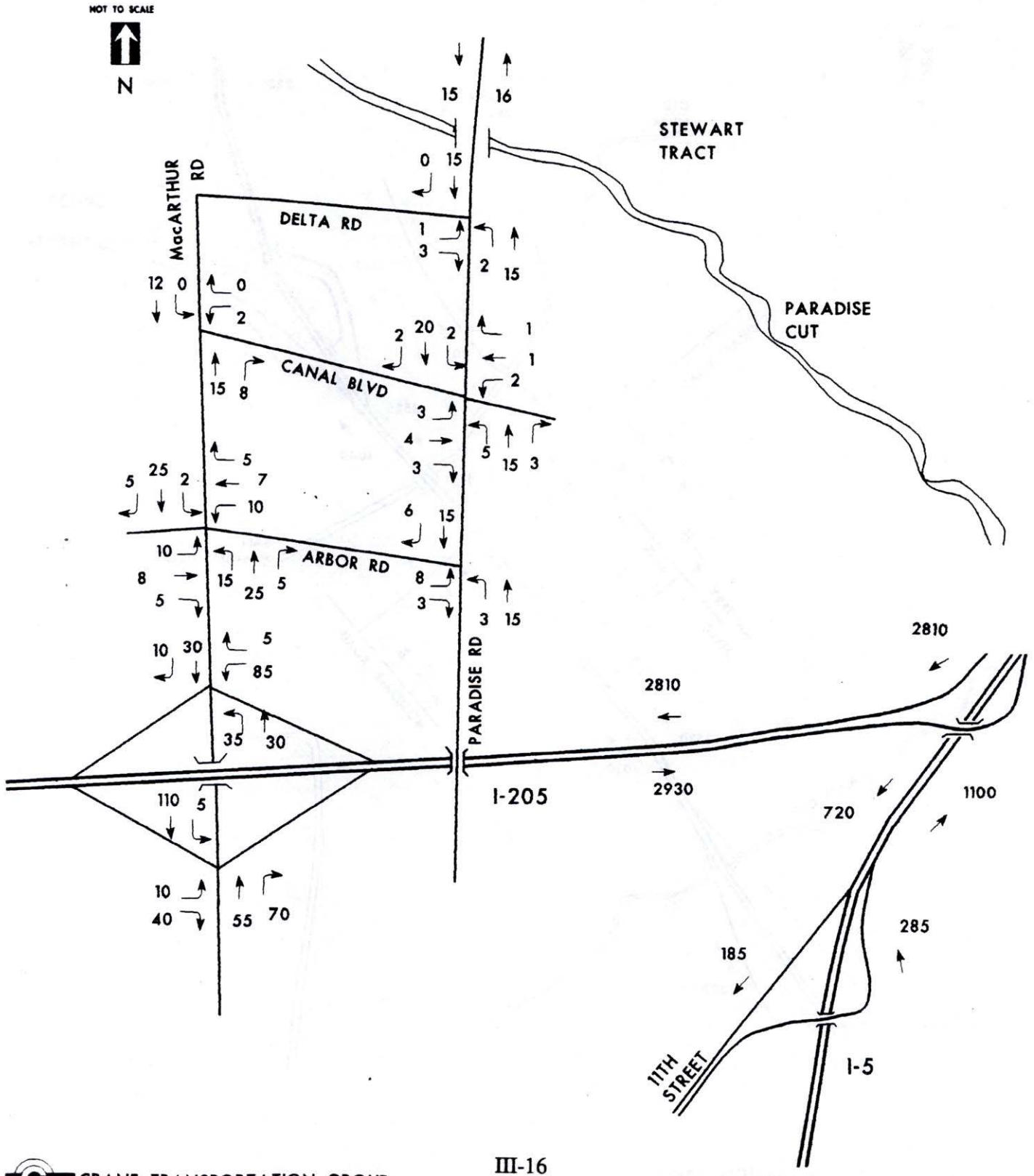


FIGURE III-5-C

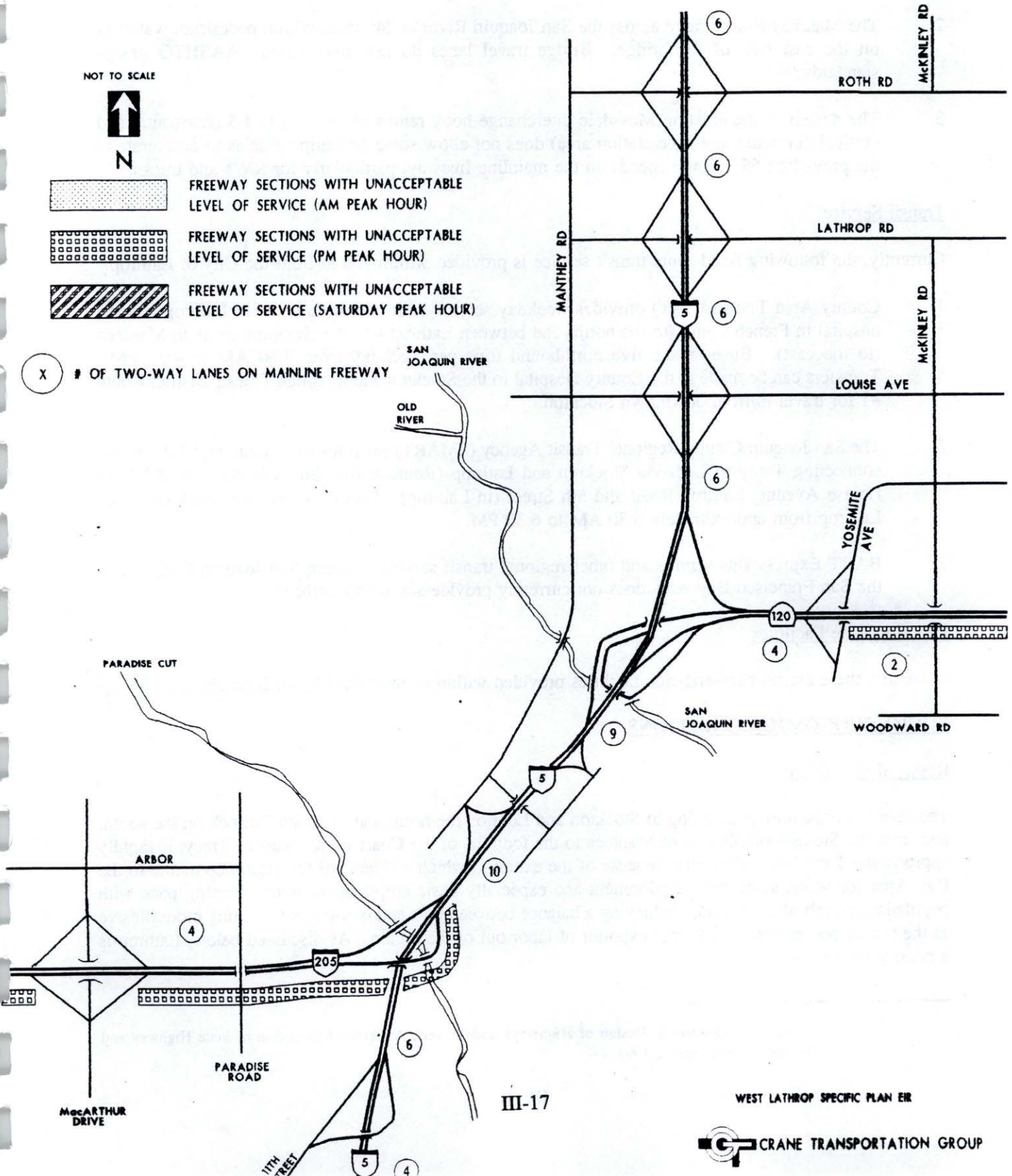
EXISTING SATURDAY PEAK HOUR SUMMER, 1993, TRAFFIC VOLUMES
Along SR 205 West of I-5 and I-5 South of SR 205
(Saturday 11:00 AM - 12:00 PM)



CRANE TRANSPORTATION GROUP

FIGURE III-5-D

EXISTING UNACCEPTABLE LEVEL OF SERVICE
WEEKDAY AND SATURDAY AM/PM PEAK HOUR VOLUMES



Existing Circulation System Concerns

1. The roadway system on Stewart Tract has poor pavement condition in may locations. Road widths are minimal and shoulder areas non-existent in most areas. Many roadway curves have minimal radii of curvature, requiring vehicles to slow to 10-20 mph.

2. The Manthey Road bridge across the San Joaquin River is 24' wide, with a pedestrian walkway on the east side of the bridge. Bridge travel lanes do not meet current AASHTO design standards.[5]

3. The design of the existing Mossdale interchange hook ramps connecting to I-5 (horizontal and vertical curvature and acceleration area) does not allow some on-ramp vehicles to accelerate to the prevailing 65-70 mph speeds on the mainline freeway, particularly for RV's and trucks.

Transit Service

Currently, the following fixed route transit service is provided within and to/from the City of Lathrop:

1. County Area Transit (CAT) provides weekday service with one route between Lathrop and the hospital in French Camp (to the north) and between Lathrop and the shopping areas in Manteca (to the east). Buses make five northbound trips per weekday from 7:00 AM to 4:30 PM. Transfers can be made at the County Hospital to the Stockton Metropolitan Transit District Route #1 for travel to/from downtown Stockton.

2. The San Joaquin County Regional Transit Agency (SMART) provides fixed route regional service connecting Tracy to Lodi via Stockton and Lathrop (Route #20). Buses travel east of I-5 on Louise Avenue, Lathrop Road and 5th Street (in Lathrop). Eleven buses each weekday serve Lathrop from approximately 6:30 AM to 6:30 PM.

3. BART Express Bus service and other regional transit service between San Joaquin County and the San Francisco Bay Area does not currently provide service to Lathrop.

Park-and-Ride Facilities

Currently, there are no park-and-ride facilities provided within or near the City of Lathrop.

SOCIO-ECONOMIC CONDITIONS

Regional Conditions

The regional population, extending to Stockton and Lodi on the north and Modesto-Turlock on the south, and from the Sierra foothills east of Manteca to the foothills of the Coast Range west of Tracy, is rapidly approaching 1 million. However, because of the extent to which residents of the region commute to the Bay Area for work, economic development and especially basic employment is not keeping pace with population growth of the region. Achieving a balance between jobs and housing is becoming more illusive as the region becomes more of a net exporter of labor out of the region. As discussed below, Lathrop is a notable exception.

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5 **A Policy on Geometric Design of Highways and Streets**, American Association of State Highway and Transportation Officials, 1994.

Existing Population and Households

The City had a January, 1995 population of approximately 8,735 [State Department of Finance], with 2,445 households and 2,615 housing units. The population reported for April, 1990 by the Census Bureau was 6,841, with 1,927 households and 2,040 housing units. The ratio of single-family to multi-family units is about 3:1, with single-family units comprising 75% of the total.

Economic Characteristics

Total employment in 1990 was approximately 5,600, with 2,720 in services, 100 in retail and 2,780 in industries. The ratio of employment to population continues to be high (@ .80 jobs per capita), indicating that Lathrop continues to be a net importer of employees to local industries and services. Lathrop's jobs/housing balance is lop-sided in favor of the community, with a ratio of 2.85 jobs for every housing unit. By comparison, the jobs/housing ration for San Joaquin County is about 1.13 jobs/housing unit. The main private industrial uses are the Libby Owens Ford (LOF) auto glass manufacturing facility, the Simplot fertilizer and pesticide manufacturing plant, and the E.R. Carpenter plant. New facilities recently constructed include WestPac and Nestle's. The major public employer is the Sharpe Depot which stores and distributes military supplies.

LAND RESOURCES

Agricultural Land, Slope and Soils

Land resources surrounding the urban area have been devoted to the diversified production of field crops, vegetables, pasture and some deciduous nuts and fruits on prime and near-prime agricultural soils. Most of the agricultural lands within Mossdale Village and Stewart Tract which are proposed for urbanization under the General Plan and Specific Plan are under Williamson Act contracts with San Joaquin County (see Figure III-6). The terrain is relatively flat, with slopes falling gently to the north at a gradient averaging less than one percent (1%) in the area between Interstate 5 and the San Joaquin River.

Soils within the planning area are of two basic class/associations, as follows:

- East of the San Joaquin River, soils are mostly alluvial fan/terraces of the Delhi-Veritas-Tinnin Associations.

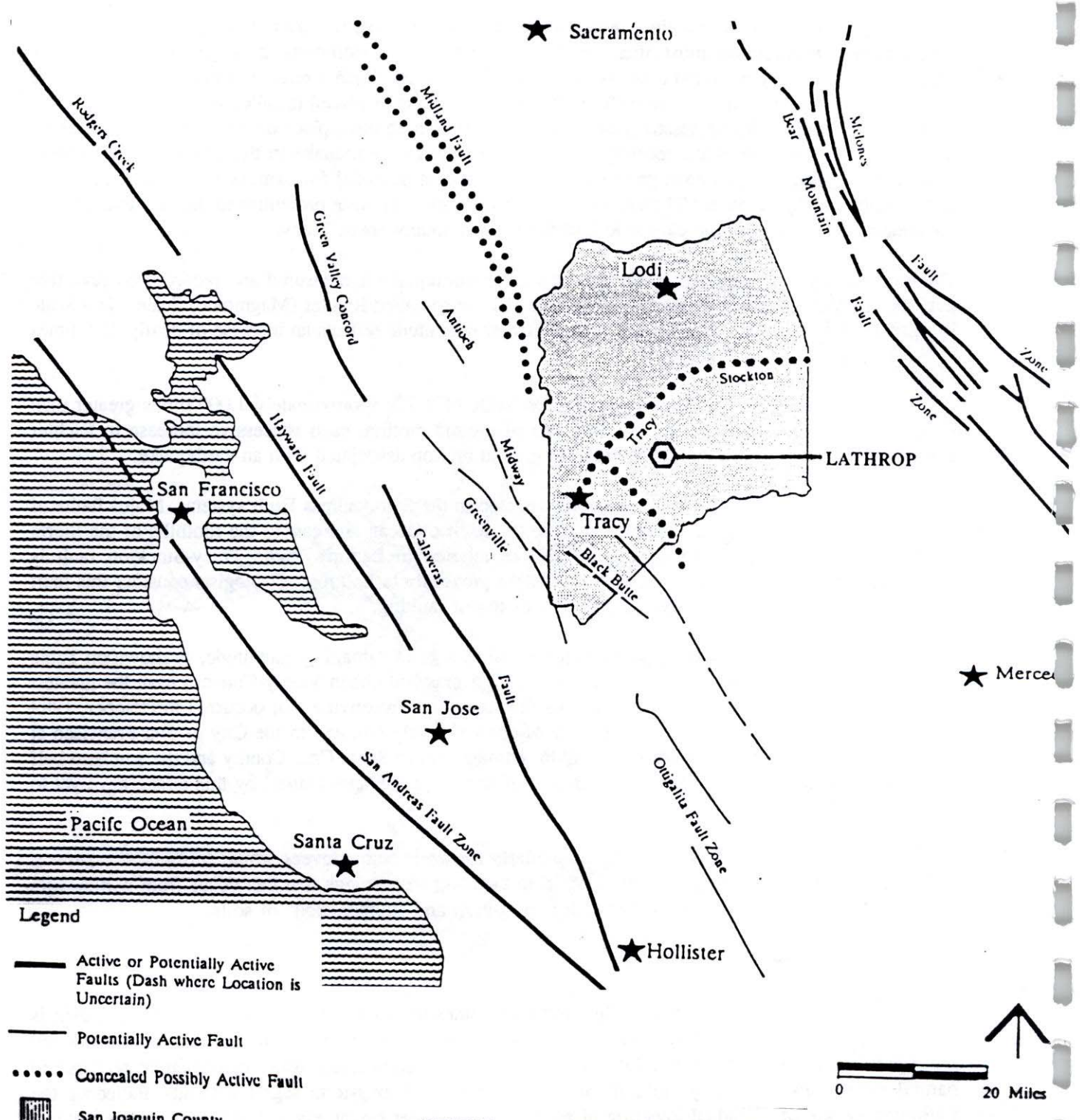
- West of the River for most of the Stewart Tract, soils are mostly delta/floodplain of the Merritt-Grangeville-Columbia Associations, with Peltier-Egbert Associations appearing in the westerly part of the Tract.

Soils of the alluvial and fan terrace classification comprise sand and silty clay. They drain moderately well with slow to rapid permeability. Shrink-swell potential is low to moderate; water erosion potential is moderate; and, limitation for on-site sewage systems is considered moderate to severe. All soils of this class and association are subject to high wind erosion.

Soils of the delta flood plain classification have a dominant texture of silty clay or sandy clay. They drain poorly with slow permeability, and are deeply developed organic soils. Their shrink-swell potential is moderate (Merritt-Grangeville-Columbia) and moderate to high (Peltier-Egbert); water erosion potential is low to moderate; soils are subject to a high water table; and, limitation for on-site sewage systems is severe. All soils of the class may contain hydric components (capability of supporting wetlands habitat).

FIGURE III-7

REGIONAL FAULTS OF NORTH-CENTRAL CALIFORNIA



SOURCE: From Figure 4.37, **Draft EIR, San Joaquin County Comprehensiv Planning Program**, Baseline Environmental Consulting, June, 1990

TABLE III-1

MAJOR FAULTS POTENTIALLY AFFECTING THE LATHROP PLANNING AREA

FAULT	Distance From Stockton (Miles)	Maximum Probable Quake[6]	Maximum Credible Quake[7]	Recurr. Interval (Years)	Maximum Intensity of Max Cred. Eartquake [local]	Years of Historic Damaging Quakes[8]
San Andreas Zone	66	7.8-8.5	8.25-8.5	300, 140	VIII-IX	1838 1906 1989
Calaveras	42	6.75	6.75-7.3	150	VIII-IX	1861
Hayward	48	7.25	7.0-7.5	264	VIII-IX	1836 1868
Green Valley-Concord	44	6.70	6.5-7.25	319	VII-VIII	1955
Antioch	30	6.60	5.75-6.6	--	VII-VIII	1889? 1965
Greenville	30	6.80	6.90	>10,000	VI-VIII	1980
Midway	24	6.30	6.30	2,651	VII-VIII	None Known
Ortigalita	32	6.70	6.70	10,000	VII-VIII	None Known
San Joaquin	32	6.60	Unknown	1,083	Unknown	None Known
Foothills Zone	13	6.80	6.00	>10,000	VIII-IX	1975
Midland	19	--	7.00	Unknown	VIII-IX	1889?

SOURCE: From Table 4.38, **Draft EIR, San Joaquin County Comprehensive Planning Program,** Baseline Environmental Consulting, June, 1990

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[6] Maximum probable earthquake is the maximum earthquake that appears to be reasonably expected within the next 100-year period.

[7] The maximum credible earthquake is the maximum earthquake that might reasonably occur under the conditions presently known.

[8] Those years followed by question marks (?) are estimated.

table. Before extensive pumping began in the area, groundwater from east of the Lathrop area moved generally westward from the Sierra Nevada toward the San Joaquin River. Now, groundwater in the unconfined aquifer also moves toward local pumping depressions. Isolated cones of depression are found near areas of high pumping which lay east of Stockton and Manteca.

The regional overdraft of groundwater supplies countywide is estimated at about 71,000 acre-feet per year.[9] Between 1947 and 1984, the rate of groundwater lowering has been about 1.7 feet per year. As a consequence of the removal of fresh groundwater, saline waters have migrated as a front eastward from the Delta at a rate of about 140-150 feet per year. Saline waters have become noticeable in Delta lands only a few miles northwesterly of Lathrop. With continued pumping, this currently "safe" distance could be expected to dimish gradually over the decades ahead. Depth to groundwater in the Lathrop planning area (measured in spring, 1988) was in the range of 10' to 20' east of the San Joaquin River, and from 5' to 8' within Stewart Tract.

The construction of upstream dams on tributaries to the San Joaquin River, and levee reinforcement along the east side of the San Joaquin River in the area between Lathrop and Stockton has substantially reduced many flood problems and has virtually eliminated the potential for flooding within the planning area east of the San Joaquin River. However, the potential for flooding remains on the Stewart Tract due to a combination of conditions, including weak levees, loose soils, a high water table, and generally low surface elevations. The entire Tract lays within the 100-year floodplain.

Several potential sources of potable water needed to supply Stewart Tract and Mossdale Village were identified by the Lathrop General Plan. Recognizing limits to the long-term availability of a reliable groundwater source, the City is actively pursuing participation with the South San Joaquin Irrigation District (SSJID) for surface water delivery. Studies have demonstrated the merit of SSJID becoming a major supplier of treated water to several communities, including Lathrop. A detailed study completed in February, 1994, further confirms the potential availability of SSJID water to the City of Lathrop, requiring a new treatment plant. This topic is discussed in greater detail in Part V of this report.

CLIMATE AND AIR QUALITY

Climate:

The climate of California is dominated by the Pacific Ocean and the presence of a large-scale atmospheric high pressure cell (commonly known as the Pacific High) over the Pacific's eastern reaches. Because of the marine influence, coastal areas of the State experience mild winters, cool summers, small daily and seasonal temperature ranges, and high relative humidity. Interior regions, including the Project area, experience more extreme variations of daily and seasonal temperatures and generally lower relative humidity.

While the climate of Lathrop and of San Joaquin County is semi-arid, it is not typical of most of the San Joaquin Valley where summer temperatures are known to exceed 100 degrees F. for more than 30 days at a time. The Lathrop area is heavily influenced seasonally by marine breezes which flow through the Carquinez Strait and generally follow the course of the San Joaquin River in the Delta, and which are also released through Altamont Pass west of Tracy. Average annual rainfall varies considerably between less than seven inches during drought years to over 14 inches during wet years. Afternoon humidity averages

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[9] **Draft EIR, San Joaquin County Comprehensive Planning Program**, Chapter 4: Hydrology and Water Quality, Baseline Environmental Consulting, June, 1990.

58% for the year and 34% in July. Average maximum temperatures are 78.1 degrees for the year, 90.4 degrees in July and 53.4 degrees in January.

Important climatic influences accrue from the seasonal mobility of the Pacific High. Moving northward in the summer, it diverts westward-moving storm fronts far north of the State. Thus, California receives little or no precipitation during this period. In winter, the Pacific High retreats southward, permitting storms to swing into and across the State. These storms bring widespread moderate precipitation, typically over a period of from 2 to 5 days, followed by from 7 to 14 days of dry weather.

The Pacific High also has an important effect on the vertical motion of the air over California. During the late spring, summer, and early fall, descending warm air from the Pacific High blankets a cooler layer of air closer to the ground. This large-scale temperature inversion inhibits upward mixing from the atmosphere's surface layers. Although this overall behavior is much less pronounced in winter, smaller-scale inversions commonly form when surface layers of air are cooled by contact with the ground (valley floors in mountainous areas of the State are especially susceptible to this regime). Temperature inversions play a major role in inhibiting the dispersion of air pollutants, and induce periods of heavy fog in winter.

Regulations Governing Air Pollutants:

Criteria Pollutants. The 1970 Clean Air Act gave the U.S. Environmental Protection Agency (EPA) the authority to set federal ambient air quality standards to protect public health and welfare. It also required that these federal standards be designed to protect people most susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by illness, and persons engaged in strenuous work or exercise (all termed "sensitive receptors"). Pollutants subject to federal ambient standards are referred to as criteria pollutants because the EPA publishes criteria documents to justify the choice of standards.

Currently, most of the effort to improve air quality in the United States is directed toward the control of five criteria pollutants: photochemical oxidants (ozone), carbon monoxide (CO), suspended particulate matter[10], nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Fifteen years ago, suspended particulate lead would have been included in this list but today the widespread availability and use of unleaded gasoline has effectively eliminated lead as a pollutant of concern.

The federal and State standards (the latter established in California starting in 1969, pursuant to the Mulford-Carrell Act), shown in Table III-2, are thought to provide sensitive receptors with adequate protection during the given exposure times from the adverse health effects detailed in Table III-3.

The 1977 Clean Air Act Amendments (passed after many states failed to meet the Clean Air Act's five-year deadline for achieving the federal standards) required that each state identify areas within its borders that did not meet federal standards (termed non-attainment areas) and devise a State Implementation Plan (SIP), subject to EPA approval, which would guarantee attainment no later than the end of 1987. The Clean Air Act Amendments did not specify what course of action should be undertaken by the EPA if states failed to meet the 1987 attainment deadline.

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[10] The standard for particulate matter was originally applied to particulates of any diameter, termed "total suspended particulates" or TSP. The standard has been changed recently to apply only to particulates less than 10 microns in diameter, termed PM_{10}.

TABLE III-2

FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	Averaging Time	Federal Primary Standard	Federal Secondary Standard	California Standard
Ozone	1-hour	0.12 ppm[10]	0.12 ppm	0.09 ppm
Carbon Monoxide	1-hour 8-hour	35.0 ppm 9.0 ppm	35.0 ppm 9.0 ppm	20.0 ppm 9.0 ppm
Nitrogen Dioxide	1-hour Annual	--- 0.03 ppm	--- 0.05 ppm	0.25 ppm ---
Sulfur Dioxide	1-hour 24-hour Annual	--- 0.14 ppm 0.03 ppm	--- --- ---	0.25 ppm 0.05 ppm ---
Suspended Particulates[11]	24-hour Annual	150 ug/m^3 [12] 50 ug/m^3	--- ---	30 ug/m^3 30 ug/m^3

[10] ppm = parts per million

[11] State and Federal standards are for particulate material less than 10 microns in diameter.

[12] ug/m^3 = micrograms per cubic meter

TABLE III-3

HEALTH EFFECTS SUMMARY OF THE CRITERIA AIR POLLUTANTS

POLLUTANT	Adverse Effects
Ozone	- eye irritation; - respiratory function impairment
Carbon Monoxide	- impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin - aggravation of cardiovascular disease - impairment of central nervous system function - fatigue, headache, confusion, dizziness - can be fatal in the case of very high concentrations in enclosed places
Sulfur Dioxide	- aggravation of chronic obstructive lung disease - increased risk of acute and chronic respiratory illness
Nitrogen Oxide	- risk of acute and chronic respiratory disease
Suspended Particulates	- increased risk of chronic respiratory disease with long exposure - altered lung function in children - with SO_2, may produce acute illness - particulate matter 10 microns or less in size may lodge in and/or irritate the lungs

Many states did not meet the 1987 deadline and continue to experience violations of federal air quality standards. After 1987, the EPA could have imposed sanctions in non-attainment areas, but chose to wait for Congress to amend the Clean Air aCT.

The 1990 Clean Air Act Amendments represent a major revision of the original statute. They specify new strategies for attaining federal air quality standards including: mandatory 3% annual reductions of air pollutant emissions in areas exceeding federal standards, the requirement that new stationary sources of air pollutants must more than offset their emissions (1.2 tons of offsets for every ton of pollutant emitted), the scheduled introduction of low-emitting cars and trucks into the motor vehicle fleet, and the development of alternatives to the private automobile as the primary means of transportation.

The California Clean Air Act (CCAA), which became effective January 1, 1989, provided a planning framework for attainment of the California ambient air quality standards (CAAQS). Non-attainment areas in the State were required to prepare plans for attaining the CAAQS. The CCAA provided for the classification of regions within the State into four classes: moderate; serious; severe; and extreme. Regional classifications are determined by monitoring data taken during the 1989-1991 baseline period. The monitoring criteria were set as follows:

For Ozone:

Classification	Highest One-Hour Level
Moderate	0.09 ppm to 0.12 ppm
Serious	0.13 ppm to 0.15 ppm
Severe	0.16 ppm to 0.20 ppm
Extreme	> 0.20 ppm

For Carbon Monoxide:

Moderate	9.0 to 12.7 ppm
Serious	> 12.7 ppm

For areas classified as severe, the CCAA specified the following attainment strategies:

- Reduce non-attainment pollutant emissions by 5% per year (relative to 1987 baseline emissions) until either all CAAQs are attained or every feasible emission control measure has been implemented.
- Allow no new net increase in pollutant emissions from stationary sources.
- Reduce motor vehicle trips, use and miles traveled.
- Increase average motor vehicle ridership to 1.5 persons per vehicle during commute hours by January 1, 1999.
- Reduce population exposure to non-attainment pollutants by 25%, by December 31, 1994.
- Establish Best Available Retrofit Control Technology (BARCT) requirements for existing stationary sources by December 31, 1993.

- Develop emission control programs for indirect and area sources.

Toxic Air Pollutants. In addition to the major criteria air pollutants, many other substances are known or suspected to be highly injurious to human health. Their adverse health effects can manifest themselves either as acute, debilitating symptoms after a short-term heavy dose or by the development of various cancers after long-term low-level exposure. The EPA has established a list of over 400 "extremely hazardous" substances and has promulgated emission standards (known as National Emissions Standards for Hazardous Air Pollutants or NESHAPS) for nine of these compounds (i.e., arsenic, asbestos, benzene, beryllium, cadmium, coke oven emissions, mercury, radionuclides, and vinyl chloride). California has designated several substances as "toxic air contaminants" (i.e., asbestos, benzene, cadmium, chromium, dioxin, ethylene dichloride, and ethylene dibromide) and is reviewing about 40 others under the process established by the State Legislature.

Although no federal or State ambient air quality standards have been set for toxic air pollutants, the Air Toxics "Hot Spot" Information and Assessment Act of 1987 (AB 2588) requires the gathering of information on airborne compounds that may pose an acute or chronic threat to public health. The Act specifies that each local Air Pollution Control District determine which facilities must prepare a health risk assessment. This assessment must include a comprehensive analysis of the dispersion of hazardous substances in the environment, the potential for human exposure, and a quantitative assessment of both individual and population-wide health risks associated with those levels of exposure.

Regional and Local Air Quality Problems

Air quality does not presently meet state or federal standards for ozone and Carbon Monoxide (CO) for the regional air basin for several days during the period May through October. San Joaquin County is also not in attainment for standards of fine particulate as adopted by EPA. California's one-hour ozone standard is 0.10 ppm (parts per million, by volume), not to be equaled or exceeded. The Federal standard for ozone is 0.12 ppm, not to be exceeded more than three times in any three year period. Ozone standards now are typically exceeded about six times per year at most monitoring stations. CO standards typically are violated only a few times per year, and then primarily because of mobile source emissions associated with vehicle traffic along the freeway corridors. To a significant extent, local air quality is adversely affected by ozone and CO emissions resulting from inter-regional transfer of pollutants from the San Francisco Bay Area. Standards for particulates small enough to be inhaled and which can cause lung damage (PM_{10}) are violated more frequently than other standards because of the amount of fine peat-based particles that are carried by winds from the Delta to the more urbanized parts of the County.

Periods of air pollution are heightened during the fall months when the temperature inversion common to the San Joaquin Valley traps pollutants within a warm air mass below a layer of cool air. In the winter, this inversion pattern reverses, trapping cool air below the warm air mass and creating conditions favorable to frequent heavy fog conditions. The seasonal periods of heavy fog are particularly impacting on the Lathrop area, with the heaviest occurrences during the months of December and January.

Regional. Ozone is the most severe air quality problem in the State. Unlike many other air pollutants, ozone is not emitted directly into the atmosphere, but is produced therein by sunlight-enhanced reactions between hydrocarbons (HC) and nitrogen oxides (NO_x). Large areas of the San Joaquin Valley suffer from high ozone levels. Population, industrial, and agricultural centers in the Valley emit ozone precursors in great quantities and dispersion is limited by surrounding mountain ranges and strong summertime temperature inversions.

Carbon monoxide (CO) is a non-reactive pollutant with one major source, motor vehicles. Thus, ambient CO distributions closely follow the spatial and temporal distributions of vehicular traffic. CO levels are highest in the State's urban areas during the winter months, when nocturnal temperature inversions limit dispersion during peak commute hours. Interior areas are more susceptible to the formation of winter inversions than coastal areas. CO standard violations are not uncommon in many cities of the San Joaquin Valley because of the high concentration of motor vehicle traffic. In contrast, CO levels in rural areas are invariably much lower because traffic volumes are lower.

Problems with suspended particulates are widespread in California. Many rural areas have a high natural particulate background as a result of soil particles carried by the wind. Human activities can add significant amounts of particulates to the air through plowing and the burning of field waste in rural areas, and through fuel combustion and the suspension of dust by motor vehicles and construction equipment in urban areas. Ambient particulate concentrations in the San Joaquin Valley are frequently high enough to violate State standards and reduce visibility.

Nitrogen dioxide (NO_2) is the most abundant form of ambient NO_x. The major sources of NO_x, compounds which have an important role in the formation of ozone, are vehicular, residential, and commercial fuel combustion. The NO_2 standard is currently being met throughout the San Joaquin Valley. The refining of high sulfur oil or the burning of high sulfur fuels are the major sources of ambient SO_2. The SO_2 standard is currently being met throughout the State.

Local. Table III-4 summarizes the highest measured criteria pollutant concentrations and the frequency of standard violations at monitoring stations in San Joaquin County. Ozone data from Stockton clearly illustrates the degree to which the Valley suffers from ozone. Experience has shown that areas affected by high ozone concentrations are typically many square miles in extent. Therefore, the Lathrop planning area should be exposed to about the same levels of ozone as recorded in Stockton.

Stockton, San Joaquin County's largest city, clearly experiences occasional violations of the eight-hour CO standard. But the problem can be expected to be much less severe in more rural areas of the County. CO levels should be lower in outlying areas near Lathrop.

State PM_{10} standard violations have been recorded in Stockton. Since the Lathrop planning area is located in an area which experiences a dry climate, naturally produced particulates, when added to anthropogenic emissions from nearby cities and roadways, probably contribute to a generally high PM_{10} levels. Pesticides sprayed in agricultural areas in the vicinity of the project also can be considered local sources of air pollution.

State and Local Air Quality Control

The California Air Resources Board (CARB) has ultimate jurisdiction over all air pollution control programs in California. The CARB monitors air quality throughout the State, limits allowable emissions from vehicular sources, and serves as the official liaison with the federal government. The CARB has divided the State into many air basins (i.e., areas which share similar pollutant problems and climatic conditions) and has delegated significant authority for air quality control within them to local Air Pollution Control Districts (APCDs) or multi-county Air Quality Management Districts (AQMDs).

In recognition of the common topographical and meteorological factors which link air quality problems of the eight Valley counties (in north-to-south order: San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern), the eight counties have joined together as the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). Until late 1992, the District's main instrument of air quality

TABLE III-4

STOCKTON AIR POLLUTANT DATA SUMMARY[14]

Hazleton (STKH), Claremont (STKC) and E. Mariposa St. (STKM) Monitoring Stations

POLLUTANT	1991			1992			1993		
	STKH	STKC	STKM	STKH	STKC	STKM	STKH	STKC	STKM
OZONE									
Highest 1-hour	0.11	NM[15]	0.12	0.11	NM	0.11	0.11	NM	0.13
Days > 0.12 ppm	0	NM	0	0	NM	0	0	NM	1
Days > 0.09 ppm	10	NM	22	7	NM	18	7	NM	11
CARBON MONOXIDE									
Highest 1-hour	14.0	15.0	NM	11.0	11.0	NM	10.0	10.0	NM
Days > 35.0 ppm	0	0	NM	0	0	NM	0	0	NM
Days > 20.0 ppm	0	0	NM	0	0	NM	0	0	NM
Highest 8-hour	11.4	11.0	NM	7.4	8.3	NM	6.3	6.9	NM
Days > 9 ppm	1	2	NM	1	0	NM	0	0	NM
NITROGEN DIOXIDE									
Highest 1-hour	0.11	NM	NM	0.19	NM	NM	0.16	NM	NM
Days > 0.25 ppm	0	NM	NM	0	NM	NM	0	NM	NM
SULPHUR DIOXIDE									
Highest 24-hour	NM	NM	NM	NM	NM	NM	NM	NM	NM
Days > 0.05 ppm	NM	NM	NM	NM	NM	NM	NM	NM	NM
PARTICULATES (PM_{10})									
Highest 24-hour	251	NM	NM	140	NM	NM	104	NM	NM
Days > 50 ug/m^3	22	NM	NM	21	NM	NM	13	NM	NM
Annual average	43.3	NM	NM	43.0	NM	NM	32.9	NM	NM
Years > 30 ug/m^3	Yes	NM	NM	Yes	NM	NM	Yes	NM	NM

14 **California Air Quality Data,** Air Resources Board, Annual Summaries, 1991-1993

10 NM = Not Monitored

control was the requirement that all significant stationary sources (as defined in their rules and regulations) operate under APCD-issued permits. However, in December, 1992, the APCD completed a Valley-wide Air Quality Attainment Plan (AQAP), as mandated by the California Clean Air Act. This Plan gives the APCD significant new powers to limit the growth of emissions from transportation sources.

As a "severe" non-attainment area, the San Joaquin Valley is subject to the most stringent requirements of the California Clean Air Act, and must apply all feasible measures to reduce emissions. [Note: the measures which apply to the West Lathrop Specific Plan are described in Part V.]

Air quality problems in the San Joaquin Valley have been classified as "severe" because attainment and maintenance of the ozone and CO standards could not be predicted by the end of 1977. With this classification, the California Clean Air Act requires the implementation of all feasible measures to reduce emissions. Ozone precursor emissions are to be reduced by 5% per year, based on 1987 emission levels. The State's Plan presents specific county-by-county targets for CO emissions reduction based on the 5% per year reduction requirement and linear rollback, as appropriate. Despite the number of specific emissions reduction measures of the Plan, the measures are not predicted to achieve the goal and the Plan calls for additional emissions control measures at State and Federal levels.

Air Quality Planning and Control in the San Joaquin Valley

Planning for the attainment and maintenance of NAAQS/CCAA standards in the San Joaquin Valley is the responsibility of the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). To make all deliberate progress toward attainment of CAAQS (as mandated by the CCAA), the District finalized an Air Quality Attainment Plan (AQAP) in January, 1992. The AQAP includes all feasible emission control measures which are under the jurisdiction of the District to implement. However, the AQAP does not (and cannot) achieve the 5% per year reductions called for by the CCAA, nor does it project specific attainment dates for any of the pollutants which currently exceed CAAQS. The District currently is developing a regional air quality modeling system which it hopes will be available for use as a planning tool when the AQAP is updated in 1994.

The AQAP has implemented 46 "retrofit" control measures to reduce emissions from existing stationary sources, and has revised the New Source Review to achieve no net increase in emissions from new or modified stationary sources. All new stationary sources will require Best Available Control Technology (BACT) and offsets for any emissions of non-attainment pollutants; an Emission Reduction Credit Banking system has been established to facilitate offset transfers.

The AQAP has also implemented new controls on mobile sources; indirect source controls (i.e., facilities that generate or attract motor vehicles) include the following:

- Enhanced SJVUAPCD review of and comment on new projects selected during the CEQA process.

- Promotion of the inclusion of Air Quality Elements in city and county General Plans.

- Development of a New and Modified Indirect Source Review Rule. This Rule would require project applicants to mitigate or offset emissions of ozone precursors from indirect sources by one or more of the following strategies:

- Site design or location that encourages alternative transit modes and/or reduces vehicle miles traveled.
- On-site/off-site mitigation of emissions.
- Payment of a mitigation fee to fund emission reduction programs.
- Air quality permit prior to construction or operation for "larger" projects.

Transportation control measures (TCMs) include the following:

- *Traffic flow improvements* which increase traffic flow speed through signalization and increased traffic capacity.

- *Public transit* which increases the proportion of people to whom transit service is available by expanding routes, schedules and equipment.

- *Passenger rail and support facilities* which increase inter-city ridership and provide for multi-modal stations linking public and private transit systems.

- *Ridership programs* which increase the use of carpools/vanpools.

- *Park and ride lots* which provide parking lots at strategic locations to facilitate rideshare and transit connections.

- *Bicycling programs* to accommodate the use of bicycles as an alternative to motorized transport by establishing bikeways.

- *Trip reduction programs* which require employers to reduce vehicle trips through flexible work hours, ridesharing and similar programs.

- *Parking management* to remove existing spaces, reduce parking space requirements for new developments, and/or set aside preferential space for carpools/vanpools.

- *Telecommunications* to reduce travel through the use of electronic communication systems.

- *Fleet operator alternative fuels programs* to begin replacing gasoline or diesel trucks with low-emitting fuel models. This would apply initially to fleet operators with more than fifty vehicles and eventually to operators with more than 20 vehicles.

The SJVUAPCD estimates that even with the projected increases in population and employment for San Joaquin County over the next eight years (i.e., 29% growth in population from 2.77 million to 3.58 million and 35% increase in employment from 1.04 million to 1.41 million jobs), emissions would be reduced by the amounts shown in Table III-5 if all the control measures proposed by the AQAP were fully implemented.

While the AQAP does not specifically address PM_{10} control, it is expected that control measures which reduce ROG and NO_x emissions will have a beneficial impact on levels of fine particulate. Future air quality plans will deal more directly with PM_{10} problems.

TABLE III-5

SAN JOAQUIN VALLEY AIR POLLUTANT EMISSION ESTIMATES[16]

POLLUTANT	Emissions (tons/day)			
	1987	1994	1997	2000
ROG (SJV)				
Without AQAP	750	662	672	679
With AQAP	-0-	635	549	539
% Reduction (from 1987)	-0-	15%	27%	28%
NO_x (SJV)				
Without AQAP	586	531	523	530
With AQAP	-0-	432	415	418
% Reduction (from 1987)	-0-	18%	29%	29%
CO (Fresno)				
Without AQAP	418	363	337	315
With AQAP	-0-	350	319	297
% Reduction (from 1987)	-0-	16%	24%	29%
CO (Bakersfield)				
Without AQAP	425	395	377	361
With AQAP	-0-	386	364	346
% Reduction (from 1987)	-0-	9%	14%	19%
CO (Stockton)				
Without AQAP	370	311	294	278
With AQAP	-0-	302	281	273
% Reduction (from 1987)	-0-	18%	24%	26%
CO (Modesto)				
Without AQAP	252	215	203	193
With AQAP	-0-	207	194	188
% Reduction (from 1987)	-0-	18%	23%	25%

16 Emission estimates taken from the 1991 Air Quality Attainment Plan, San Joaquin Valley Unified Air Pollution Control District, 1992.

Significance Criteria

The SJVUAPCD has established the following criteria for judging the significance of air quality impacts:

- Air pollution emissions from stationary sources regulated under APCD permit powers are significant if they exceed Best Available Control Technology (BACT) thresholds and must be reduced to the maximum extent that current control technology allows. Furthermore, if those emissions surpass an "offset" threshold, emissions from existing sources within the air basin must be reduced so that no new net increase in air pollution emissions occurs. The following BACT and Offset thresholds have been established:

Pollutant	BACT Threshold	Offset Threshold
CO	550 lbs/day	550 lbs/day
TOG	0 lbs/day	0 lbs/day
NO_x	0 lbs/day	0 lbs/day
SO_x	0 lbs/day	0 lbs/day
PM_{10}	0 lbs/day	80 lbs/day

BIOLOGICAL RESOURCES

Literature Search and Consultations

Information on the biology, distribution, taxonomy, legal status, and other aspects of the special-status species was obtained from documents on file in the library of Sycamore Environmental Consultants, and from data furnished by the U.S. Fish and Wildlife Service in a letter dated August 16, 1993. Standard references used for the biology and taxonomy of plants included Abrams (1923-1960); Hickman (1993); Mason (1957); and Munz (1959). Standard references used for the biology and taxonomy of wildlife included Behler (1979); Ingles (1965); Peterson (1941, 1961, 1990); Stebbins (1966); Udvardy (1977); Verner and Boss (1980); and Whitaker (1980).

A computerized search of the California Natural Diversity Data Base (RareFind, 1993), was conducted for the Lathrop and Union Island U.S.G.S. topographic quads. This was done to determine if there were any known occurrences of state- or federal-listed species recorded from the project area that could be affected by the proposed facilities. Additional surrounding quads were searched as part of special studies conducted for the San Joaquin Kit Fox Biological Assessment. The Biological Assessment for the kit fox is a separate document that will be submitted to the FWS for review.

Consultations were conducted with the California Department of Fish and Game (DFG) regarding special-status species and mitigation issues. Discussions with DFG included Swainson's hawk, Riparian brush rabbit, Riparian woodrat, California black rail, Western yellow-billed cuckoo, and Giant garter snake. DFG specifically requested in a meeting with the Region 2 Environmental Services Supervisor, that surveys be conducted for the California black rail, Western yellow-billed cuckoo, and Giant garter snake. Discussions were conducted with the U.S. Fish and Wildlife Service (FWS) regarding San Joaquin kit fox study protocol and related issues, and with the Army Corps of Engineers (Corps) regarding wetland issues.

Pre-Application Interagency Meeting

To assist in identifying issues of concern to the regulatory agencies, Sycamore Environmental Consultants arranged and attended a Pre-Application Interagency Meeting at the Corps on 2 September 1993. In attendance were representatives from the Corps, DFG, U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the City of Lathrop, and Gold Rush City.

Biological Field Surveys

Detailed biological field surveys of the Gold Rush City and Mossdale study areas began in April 1993 and continued into July 1993. Work was conducted by R. John Little, Ph.D., and was assisted by Jeffery Little and Damon Reische of Sycamore Environmental Consultants. Surveys were conducted to identify the major plant communities and to determine wildlife species inhabiting or transiting the study area. Surveys were also conducted to determine if any sensitive wildlife or plant species occur within the study area that are not mentioned in the RareFind printout.

Checklists were made of all plant and wildlife species encountered that were identified. Table III-6 presents a list of plant species recorded from the study areas. Wildlife or their sign observed in the study area are listed in Table III-7.

Wetland Delineation

A jurisdictional wetland delineation was conducted between May and August, 1993. Observations were made in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual (USCOE, 1987). The results are described in the Wetland Delineation Report for Stewart Tract Project, San Joaquin County, California (Little, 1993).

Wetlands: Waters of the U.S. and Jurisdictional Wetlands

Waters of the U.S. and jurisdictional wetlands subject to Section 404 of the Clean Water Act (CWA), are regulated by the U.S. Army Corps of Engineers. The types of waters of the U.S. and jurisdictional wetlands in the study area include drainage channels, ponds, rivers, and wetlands. Channelized creeks and rivers are subject to regulation as waters of the U.S. Wetlands in the study area are represented by tidal and non-tidal wetland habitats.

A total of 347.5 acres of jurisdictional wetlands occur within the project study area, composed of approximately 136.86 acres of palustrine and 210.64 acres of riverine habitats involving three natural bodies of open water -- the San Joaquin River, Old River, and Paradise Cut. Most of these areas would not be affected by construction of the project. A total of 121.7 acres of palustrine wetlands are found in the Stewart Tract project area, mostly within Paradise Cut. A total of 15.16 acres of palustrine wetlands are found in the Mossdale Village project area.

Special-Status Species and Communities Evaluated

Special-status species and communities occurring on the RareFind printout for Lathrop and Union Island quads are discussed below. In addition to the RareFind printout, Sycamore Environmental reviewed the current list of Special Animals prepared by the California Department of Fish and Game Natural Diversity Data Base (DFG, 1992); and the current list of State and Federal Endangered and Threatened Animals of California (DFG, 1993). Special-status plant and wildlife species evaluated for the DEIR are listed in Table III-7. Biological resources of the planning area are shown on Figure III-8.

TABLE III-6

PLANT SPECIES OBSERVED AT STEWART TRACT AND MOSSDALE VILLAGE STUDY AREAS

1993-1994.

FAMILY/Scientific Name	Common Name
MONOCOTS	
CYPERACEAE	
Cyperus esculentus	Nutsedge
Scirpus acutus var. occidentalis	Tule
Scirpus pungens	Common threesquare
JUNCACEAE	
Juncus balticus	Baltic rush
POACEAE	
Arundo donax	Giant reed
Avena barbata	Slender wild oats
Bromus diandrus	Ripgut grass
Cynodon dactylon	Bermuda grass
Elymus glaucus	Blue wild rye
Hordeum murinum ssp. leporinum	Barley
Leymus triticoides	none
Phalaris minor	Canary grass
Polypogon monspeliensis	Annual beard grass
Sorghum halepense	Johnson grass
Spartina sp.	Cord grass
Sporobolus airoides	Alkali sacaton
TYPHACEAE	
Typha angustifolia	Narrow-leaved cattail
DICOTS	
ACERACEAE	
Acer negundo	Box elder
AMARANTHACEAE	
Amaranthus albus	Tumbleweed
Amaranthus powellii	Amaranth
APIACEAE	
Anthriscus caucalis	Bur-chervil
Berula erecta	Cutleaf water parsnip
Conium maculatum	Poison hemlock
Foeniculum vulgare	Sweet fennel
ASTERACEAE	
Anthemis cotula	Mayweed
Artemisia douglasiana	Mugwort
Baccharis salicifolia	Mulefat
Carduus pycnocephalus	Italian thistle
Centaurea iberica	Iberian thistle
Centaurea solstitialis	Yellow star thistle
Cirsium occidentale	Thistle
Cirsium vulgare	Bull thistle
Conyza canadensis	Horseweed

Table III-6, Continued

Cynara cardunculus	Cardoon
Gnaphalium palustre	Cudweed
Grindelia camporum	Gumplant
Helenium puberulum	Sneezeweed
Helenium annuus	Common sunflower
Xanthium strumarium	Cocklebur
BORAGINACEAE	
Amsinckia intermedia	Fiddleneck
Heliotropium curassavicum	Heliotrope
BRASSICACEAE	
Brassica napus	Rapeseed
Brassica nigra	Black mustard
Capsella bursa-pastoris	Shepherd's purse
Erysimum sp.	Wallflower
Lepidium latifolium	Peppergrass
Rorippa palustris	Watercress
CAPRIFOLIACEAE	
Sambucus mexicana	Mexican elderberry
CARYOPHYLLACEAE	
Spergularia bocconii	Sand-spurrey
CHENOPODIACEAE	
Atriplex sp.	Saltbush
Atriplex phyllostegia	Arrowscale
Chenopodium album	Pigweed
Salsola tragus	Russian thistle
FABACEAE	
Lathyrus sp. (not L. jepsonii)	Wild pea
Lotus sp.	Trefoil
Lupinus benthamii	Spider lupine
Lupinus sp.	Lupine
Melilotus alba	Sourclover
Robinia pseudoacacia	Black locust
FAGACEAE	
Quercus lobata	Valley Oak
GERANIACEAE	
Erodium botrys	Storksbill
JUGLANDACEAE	
Juglans californica var. hindsii	Northern Calif. black walnut
MALVACEAE	
Malva nicaeensis	Cheeseweed
Sida rhombifolia	False mallow
POLYGONACEAE	
Rumex crispus	Curly dock
Rumex salicifolius	Willow dock
Eriogonum sp.	Buckwheat
ROSACEAE	
Rosa californica	California rose
Rubus discolor	Himalayan blackberry
RUBIACEAE	
Cephalanthus occidentalis var. californicus	California button willow
SALICACEAE	
Populus fremontii	Fremont cottonwood

Table III-6, Continued

SALICACEAE	
Salix exigua	Narrow-leaved willow
Salix gooddingii	Goodding's black willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
SOLANACEAE.	
Datura stramonium.	Jimson weed.
Nicotiana glauca.	Tree tobacco.
Solanum umbelliferum.	Nightshade.
URTICACEAE.	
Urtica urens	Dwarf nettle

TABLE III-7

WILDLIFE SPECIES RECORDED FROM STEWART TRACT AND MOSSDALE VILLAGE AREAS

Scientific Name	Common Name
AVIAN	
Agelaius phoeniceus	Blackbird, Red-winged
Euphagus cyanocephalus	Blackbird, Brewer's
Psaltriparus minimus	Bushtit, Common
Fulica americana	Coot, American
Phalacrocorax auritus	Cormorant, Double-crested
Molothrus ater	Cowbird, Brown-headed
Corvus brachyrhynchos	Crow, Common
Numenius americanus	Curlew, Long-billed
Zenaida macroura	Dove, Mourning
Columba livia	Dove, Rock
Casmerodius albus	Egret, Great
Carpodacus mexicanus	Finch, House
Colaptes cafer	Flicker, Northern
Myiodynastes luteiventris	Flycatcher, Ash-throated
Carduelis tristis	Goldfinch, American
Podilymbus podiceps	Grebe, Pied-billed
Guiraca caerulea	Grosbeak, Blue
Circus cyaneus	Harrier, Northern
Accipiter cooperii	Hawk, Cooper's
Buteo jamaicensis	Hawk, Red-tailed
Accipiter striatus	Hawk, Sharp-shinned
Buteo swainsoni	Hawk, Swainson's
Nycticorax nycticorax	Heron, Black-crowned Night
Ardea herodias	Heron, Great Blue
Butorides striatus	Heron, Green-backed
Calypte anna	Hummingbird, Anna's
Aphelocoma coerulescens	Jay, Scrub
Falco sparverius	Kestrel, American
Charadrius wilsonia	Killdeer
Tyrannus verticalis	Kingbird, Western
Ceryle alcyon	Kingfisher, Belted
Pica nuttalli	Magpie Yellow-billed
Anas platyrhynchos	Mallard
Sturnella neglecta	Meadowlark, Western
Mimus polyglottos	Mockingbird, Northern
Gallinula chlorupus	Moorhen, Common
Icterus galbula	Oriole, Northern
Tyto alba	Owl, Barn
Bubo virginianus	Owl, Great Horned
Contopus sordidulus	Pewee, Western Wood
Phasianus colchicus	Pheasant, Ring-necked
Sayornis nigricans	Phoebe, Black

Callipepla californica	Quail, California
Turdus migratorius	Robin, American
Lanius ludovicianus	Shrike, Loggerhead

Table III-7, Continued

Zonotrichia albicollis	Sparrow, White-throated
Zonotrichia atricapilla	Sparrow, Golden-crowned
Passer domesticus	Sparrow, House
Melospiza melodia	Sparrow, Song
Sturnus vulgaris	Starling, European
Hirundo rustica	Swallow, Barn
Hirundo pyrrhonota	Swallow, Cliff
Stelgidopteryx serripennis	Swallow, North Rough-winged
Tachycineta bicolor	Swallow, Tree
Piranga olivacea	Tanager, Western
Sterna caspia	Tern, Caspian
Sterna forsteri	Tern, Forester's
Toxostoma redivivum	Thrasher, California
Catharus guttatus	Thrush, Hermit
Parus inornatus	Titmouse, Plain
Pipilo fuscus	Towhee, California
Pipilo erythrophthalmus	Towhee, Rufous-sided
Cathartes aura	Vulture, Turkey
Melanerpes formicivorus	Woodpecker, Acorn
Picoides pubescens	Woodpecker, Downy
Picoides nuttallii	Woodpecker, Nuttall's
Thryomanes bewickii	Wren, Bewick's
Troglodytes aedon	Wren, House
Chamaea fasciata	Wrentit

REPTILES

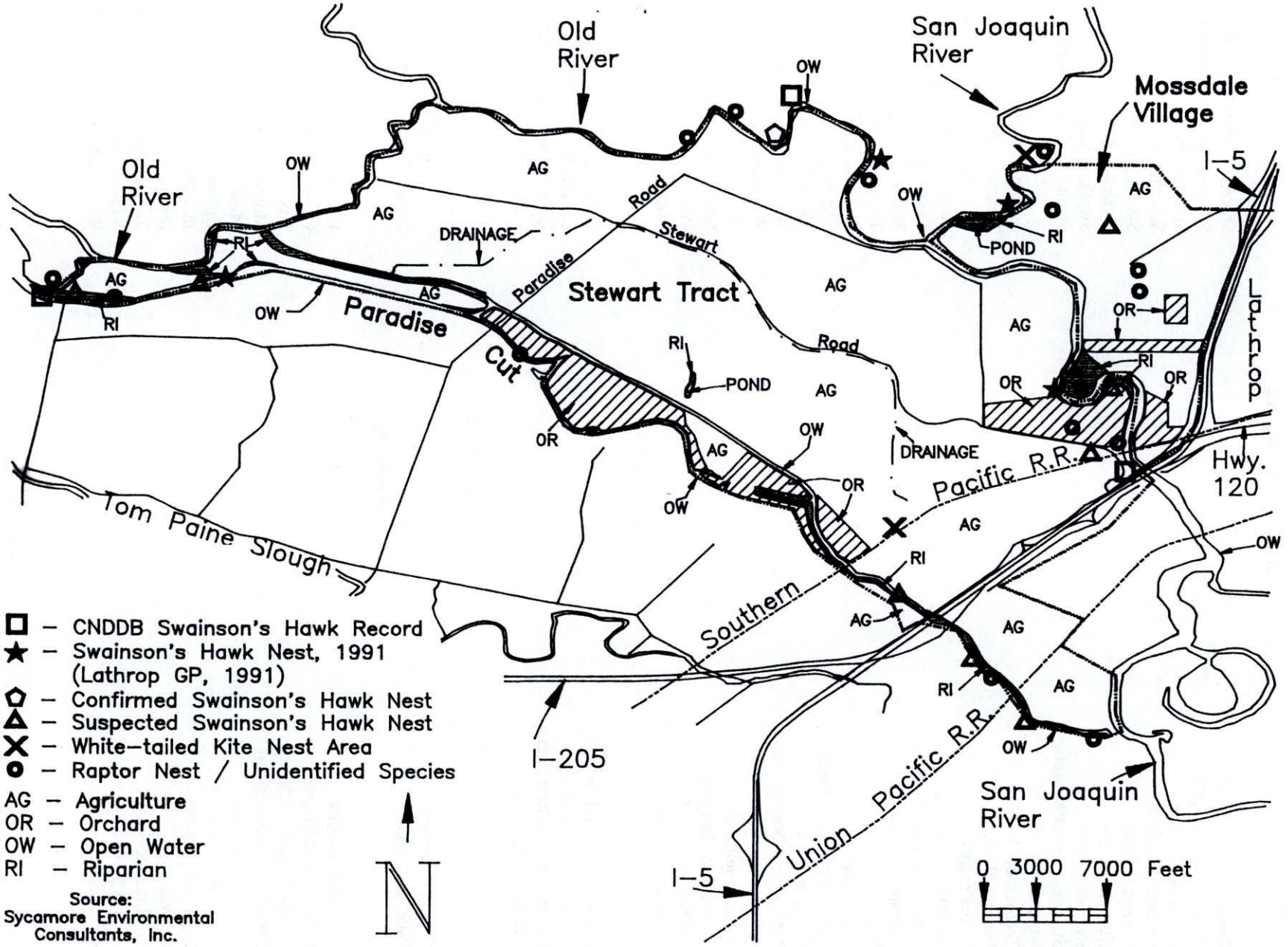
Pituophis melanoleucus	Snake, Gopher
Sceloporus occidentalis	Lizard, Western Fence
Gerrhonotus multicarinatus	Lizard, Southern Alligator
Clemmys marmorata	Turtle, Western Pond

AMPHIBIANS

Rana catesbeiana	Bullfrog
Psuedacris regilla	Pacific Chorus Frog

MAMMALS

Castor canadensis	Beaver
Sylvilagus audubonii	Cottontail, Desert
Urocyon cinereoargenteus	Fox, Gray
Peromyscus maniculatus	Mouse, Deer
Ondatra zibethicus	Muskrat
Didelphis virginiana	Opossum
Lepus californicus	Jackrabbit
Procyon lotor	Raccoon
Mephitis mephitis	Skunk, Striped
Sciurus griseus	Squirrel, Western Grey
Rattus rattus	Rat, Black



BIOLOGICAL RESOURCES OF THE PLANNING AREA

FIGURE III-8

Sensitive Plant Communities:

The RareFind printout for the Union Island quad lists the Great Valley Valley Oak Riparian Forest as a sensitive community occurring along Paradise Cut. Valley oaks are a widespread species, but threatened due to the loss of riparian habitat in the Central Valley (CNPS, 1988). No other sensitive communities are noted for either the Lathrop or Union Island quads.

Special Status Plant Communities Evaluated:

The RareFind printout for the Lathrop quad lists Delta button celery, and the Union Island quad lists Caper-fruited tropidocarpum as special-status plant species. Also evaluated were three plant species described in the FWS letter of August 16, 1993. Surveys were conducted for these species within the project boundaries, however, none were found. Special-status plant species evaluated are listed in Table III-8.

Special-Status Wildlife Species Evaluated:

The RareFind printout for the Lathrop quad lists Swainson's hawk and Tricolored blackbird, and the Union Island quad lists Swainson's hawk, Tricolored blackbird, and San Joaquin pocket mouse as special-status plant species. Also evaluated were 16 wildlife species described in the FWS letter of August 16, 1993. General surveys were conducted for these species or their habitat within the project boundaries. Of these, only Swainson's hawk and Western pond turtle were found. Swainson's hawk was previously known to inhabit the project vicinity. Special-status wildlife species evaluated for the DEIR are listed in Table III-7.

Specialized surveys that involved written or suggested protocol were conducted for Valley elderberry longhorn beetle, Giant garter snake, California black rail, San Joaquin kit fox, Riparian brush rabbit, and San Joaquin Valley woodrat. However, none were found in either the Stewart Tract or the Mossdale Village project areas. These surveys have been published as Technical Appendixes to the EIR.

Stewart Tract Project Area

Vegetation

The major plant community and wildlife habitat types occurring in the Stewart Tract study area include irrigated agriculture (field and row crops and alfalfa), orchards, riparian habitat, open water (rivers), and canals. Stewart Tract is intensively managed for agriculture. Typical crops include alfalfa, safflower, and corn. Most of Paradise Cut is planted in walnuts. The remaining acreage rotates between safflower, sugar beets, and corn. Most vegetation along the levees surrounding Stewart Tract is cut down and/or burned, apparently in accordance with levee maintenance requirements of the U.S. Army Corps of Engineers. Frequently, the burns also encroach into the riparian vegetation adjacent to the levees along Paradise Cut. As a result, all habitats within the study area have been greatly modified by human activities; there are no natural or undisturbed vegetative communities on the island. The vegetative communities of the Stewart Tract study area are shown on Figure III-8.

TABLE III-8

WILDLIFE AND PLANT SPECIES EVALUATED

LISTED SPECIES	COMMON NAME	STATE STATUS	FEDERAL STATUS	POTENTIAL HABITAT PRESENT?	SEEN?	FOCUSED SURVEYS CONDUCTED
Invertebrates						
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	--	T	Yes	No	Yes
Fish						
Hypomesus transpacificus	Delta smelt	T	T	Yes	No	Yes
Reptiles						
Thamnophis gigas	Giant garter snake	T	T	Yes	No	Yes
Birds						
Branta canadensis leucopareia	Aleutian Canada goose	--	T	Marginal	No	--
Buteo swainsoni	Swainson's hawk	T	--	Yes	Yes	Yes
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	E	--	Marginal	No	Yes
Laterallus jamaicensis coturniculus	California black rail	T	C2	Marginal	No	Yes
Mammals						
Vulpes macrotis mutica	San Joaquin kit fox	T	E	No	No	Yes
Plants						
Eryngium racemosum	Delta button celery	E	C1	Marginal	No	Yes
Lilaeopsis masonii	Mason's lilaeopsis	R	C2	Marginal	No	Yes
CANDIDATE & PROPOSED SPECIES & SPECIES OF SPECIAL CONCERN						
Invertebrates						
Lytta moesta	Moestan blister beetle	--	C2	Yes	No	--
Fish						
Pogonichthys macrolepidotus	Sacramento splittail	CSC	PT	Yes	No	Yes
Spirinchus thaleichthys	Longfin smelt	--	C2	Yes	No	Yes
Amphibians						
Ambystoma californiense	California tiger salamander	CSC	C2	No	No	--
Rana aurora draytonii	California red-legged frog	CSC	PE	Marginal	No	--
Scaphiopus hammondi hammondi	Western spadefoot toad	CSC	2R	Yes	No	--
Reptiles						
Clemmys marmorata marmorata	Northwestern pond turtle	CSC	C2	Yes	Yes	--
Clemmys marmorata pallida	Southwestern pond turtle	CSC	C2	Yes	Yes	--
Birds						
Accipiter cooperi	Cooper's hawk	CSC (nesting)	--	Yes (foraging)	Yes	--
Accipiter striatus	Sharp-shinned hawk	CSC (nesting)	--	Yes (foraging)	Yes	--
Agelaius tricolor	Tri-colored blackbird	CSC	C2	Marginal	No	--
Ardea herodius	Great blue heron	* (rookery)	--	Yes	Yes	--
Athene cunicularia	Burrowing owl	CSC (burrow sites)	--	Yes	No	--

Table III-8, Continued

CANDIDATE & PROPOSED SPECIES & SPECIES OF SPECIAL CONCERN						
Casmerodius albus	Great egret	* (rookery)	--	Yes	Yes	--
Charadrius montanus	Mountain plover	CSC	C2	Marginal	No	--
Circus cyaneus	Northern harrier	CSC (nesting)	--	Yes	Yes	--
Elanus caeruleus	White-tailed kite	* (nesting)	--	Yes	Yes	--
Lanius ludovicianus	Loggerhead shrike	--	C2	Yes	Yes	--
Numenius americanus	Long-billed curlew	CSC	--	Yes	Yes	--
Nycticorax nycticorax	Black-crowned night heron	* (rookery)	--	Yes	Yes	--
Phalacrocorax auratus	Double-crested comorant	CSC (nesting)	--	Yes	Yes	--
Sterna caspia	Caspian tern	* (nesting colony)	--	Marginal	Yes	--
Sterna forsteri	Forster's tern	* (nesting colony)	--	Yes	Yes	--
Mammals						--
Perognathus inornatus inornatus	San Joaquin pocket mouse	CSC	--	No	No	--
Plecotus townsendii townsendii	Pacific western big-eared bat	CSC	C2	No	No	--
Sylvilagus bachmani riparius	Riparian brush rabbit	SCE	C1	Marginal	No	Yes
Neotoma fuscipes riparia	San Joaquin Valley woodrat	CSC	C1	Marginal	No	Yes
Plants						
Cirsium crassicaule	Slough thistle	--	C2	Marginal	No	Yes
Hibiscus californicus	California hibiscus	--	C2	Marginal	No	Yes
Lathyrus jepsonii ssp. *jepsonii*	Delta tule-pea	--	C2	Marginal	No	Yes
Quercus lobata	Valley oak	--	--	Yes	Yes	Yes
Trichocoronis wrightii	Trichocoronis	--	--	No	No	Yes
Tropidocarpum capparideum	Caper-fruited tropidocarpum	--	C2	No	No	Yes
Sensitive Communities						
	Great Valley valley oak riparian forest	--	--	Yes	Yes	--

[1]Status Categories

E = Endangered
R = Rare
T = Threatened
P = Proposed
SCE = California candidate for listing as endangered
CSC=DFG Species of Special Concern.
C1 = Category 1: Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.
C2 = Category 2: Taxa for which existing information may warrant listing, but for which substantial biological information to support a proposed rule is lacking.
C3C = Category 3C: Taxa that are widespread or too common to list
2R = Recommended for Category 2 status
* = DFG "Special Animal"

Riparian habitat occurs around most of Stewart Tract along the San Joaquin River, Paradise Cut and Old River, but the primary concentration occurs within Paradise Cut. This riparian corridor continues to be substantially disturbed due to the clearing of brush from canal edges. The existing plant communities that occur in Paradise Cut consist of palustrine emergent, palustrine forested, and palustrine scrub-shrub, in accordance with the terminology of Cowardin (1979). Under the Cowardin classification, Riverine Systems are defined as "all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and with water containing ocean-derived salts in excess of 0.5%." In addition, water is usually, but not always flowing in the Riverine System.

The dominant overstory vegetation in Paradise Cut interbreeds among three remnant riparian community types: Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, and Great Valley Oak Riparian Forest (Holland, 1986). The dominant tree species include Fremont cottonwood, Valley oak, and Goodding's black willow, and shrubs such as willows (Salix sp.), and California button willow (Cephalanthus occidentalis var. californicus).

Fallow ground and edges of fields in the study areas contain primarily introduced, herbaceous species. Common annual species include Black mustard, Yellow star thistle, Rapeseed, Filaree, and bromes. Common herbaceous perennials include Johnsongrass, Bermuda grass, and Curly dock.

Wildlife

Prominent wildlife habitat features in the study area include agricultural fields and orchards, and the riparian and wetland habitats along the San Joaquin River, Paradise Cut and Old River. Wildlife in the study area consists of mammals, numerous bird, and various reptile species. Common wildlife species observed in the Stewart Tract study area include Desert Cottontail, Opossum, Jackrabbit, and Striped Skunk. [see Tables III-6 and 7, and Figure III-8]

Swainson's hawk, a state-listed threatened species was previously known to occur in the area (Grunwald & Associates, 1993), and was observed during the DEIR studies.

Fallow ground can provide nesting and foraging habitat for burrowing animals and other terrestrial wildlife. Grasslands also provide foraging habitat for birds such as raptors (birds of prey), yellow-billed magpies, mourning doves, scrub jays, ring-necked pheasants, and blackbirds.

Wetlands

The types of waters of the U.S. and jurisdictional wetlands in the study area include drainage channels, ponds, rivers, and wetlands (Little, 1993). Specific wetland features in the Stewart Tract study area include the San Joaquin River, Paradise Cut and Old River, a large permanent pond, and an intermittent drainage canal adjacent to Stewart Road. Stewart Tract, on which the Stewart Tract project is located, is surrounded by river and slough wetland systems. Wetland habitats in the study area can be divided into two major types: riverine and palustrine, in accordance with the terminology of Cowardin, et. al. (1979).

The western section of Paradise Cut is tidally influenced via connections with Old River. Water flow in other portions of Paradise Cut is influenced by farm operations which pump water into and out of the channels of the Cut. A rock dam (called Paradise Dam) has been constructed at the easterly end of Paradise Cut at the intersection of the Cut and the San Joaquin River. During the spring and summer, water is normally pumped from the San Joaquin River into Paradise Cut to support farm operations on

Stewart Tract. Paradise Dam normally prevents water from flowing into Paradise Cut from the San Joaquin River, except in high winter flows or flood stage events. However, there may be some influx of water into Paradise Cut from the San Joaquin River through Paradise Dam or via subsurface aquifers. Flood protection from the San Joaquin River and Old River on Stewart Tract is provided by levees constructed of dirt and rip-rap.

Mossdale Village Project Area

The major plant community and wildlife habitat types in the Mossdale Village study area include riparian habitat, a permanent pond, irrigated field and row crops, and orchards.

Vegetation

Fallow ground and edges of fields in the study areas contain primarily introduced, herbaceous species. Common annual species include Black mustard, Yellow star thistle, Rapeseed, Filaree, and bromes. Common herbaceous perennials include Johnsongrass, Bermuda grass, and Curly dock. The vegetative communities of the Mossdale Village study area are presented in Figure III-8.

A narrow band of riparian vegetation occurs along the San Joaquin River which separates the Mossdale Village site from Stewart Tract. The dominant vegetation types include various species of trees, such as Fremont cottonwood, Valley oak, and Goodding's black willow, and shrubs such as willows, and California button willow. The dominant overstory along the San Joaquin River consists of remnant Great Valley Cottonwood Riparian Forest.

Thirty-one acres of land owned by the Reclamation District adjacent to the San Joaquin River are designated as a Valley elderberry longhorn beetle mitigation site. This area has been planted in elderberry shrubs. The dominant overstory vegetation in this area consists of Fremont cottonwood and Valley oak. Since this area is owned by the Reclamation District, it is not part of the project impact area, but is nevertheless an important wildlife oasis because of the large number of mature trees.

Wildlife

Wildlife in the study area consists of various mammal, bird, and reptile species. Wildlife or their sign observed in the study area are listed in Table III-7. Common wildlife species observed in the Mossdale Village study area include Desert Cottontail, Opossum, Jackrabbit, and Striped Skunk. Swainson's hawk, a state-listed threatened species was previously known to occur in the area (Grunwald & Associates, 1993), and was observed during the DEIR studies.

Fallow ground can provide nesting and foraging habitat for burrowing animals and other terrestrial wildlife. Grasslands also provide foraging habitat for birds such as raptors (birds of prey), yellow-billed magpies, mourning doves, scrub jays, ring-necked pheasants, and blackbirds.

Wetlands

Wetland features in the Mossdale Village study area include the San Joaquin River and a permanent pond (Little, 1993). The Mossdale Village study area is intensively managed for agriculture. Typical crops include alfalfa, safflower, and corn. Most vegetation along the levees is cut down and/or burned, apparently in accordance with levee maintenance requirements of the U.S. Army Corps of Engineers. Flood protection from the San Joaquin River is provided by levees constructed of dirt and rip-rap.

Fisheries

Taken together, the Sacramento and San Joaquin Rivers form one of the largest and most important estuaries in the world. This estuary provides important habitat for a diverse assemblage of fishes, including anadromous and resident, freshwater, marine and brackish water species. Numerous human-induced and natural events have contributed to changes in populations, diversity, distribution and habitat conditions for the fishery resources in the estuary. Many of the changes began over 100 years ago, with hydraulic mining having destroyed large salmon runs. Other events which have led to declining fish stocks include: dams and water diversions for domestic, agriculture, industrial, and power-generation uses; flood control projects; drought conditions; commercial fishing; and, the introduction of non-native fish species.

In an attempt to restore declining fish stocks in the Sacramento-San Joaquin estuary, state and federal agencies have been conducting numerous studies and analyses, including:

1. Fish salvage operations at the state and federal water pumping facilities.

2. Implementation of temporary barriers, one of which is located on Upper Old River near the San Joaquin River, adjacent to the project site.

3. Fishery resources data collection throughout the estuary; and

4. Integration of information, via Bay-Delta hearings, in an attempt to identify critical habitat, water quality, water temperature and flow requirements for fish species of *special concern.*

The long-term objective of these studies is to augment declining stocks, in general, and to double the runs of the chinook salmon by the year 2000, in particular.

Several distinct ecological fish zones throughout the estuary have been recognized, which are shown on Figure III-9. In the vicinity of the proposed project, the San Joaquin River provides a habitat rich in fish diversity. At least 22 fish species from 22 families have been recorded from trawl, seine, and fyke net surveys (see Table III-8). When viewed from a fishery resources management perspective, the list includes fish species of *special concern.*

Species of special concern include those which are state- and/or federally-listed as *endangered, threatened,* or *rare;* or are *Category 1 or 2 Candidates* for federal listing. A Category 1 species is one which the U.S. Fish and Wildlife Service (USFWS) has substantial evidence to support a proposal for listing as endangered or threatened. A Category 2 species is one in which available information indicates that a proposal for listing is possibly inappropriate, but that the data available are not conclusive. In addition, a species may be treated as "rare or endangered", even if it is not on one of the official lists, if it meets any of the following criteria:

1. Its survival and reproduction in the wild are in immediate jeopardy;
2. If the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; and
3. If it seems to conform to the state or federal definitions of a threatened or endangered species.

In addition to the species of special concern, the Striped Bass (Morone saxatilis) is important, both as a food web organism and as a recreational species.

The *special status* fish species which have either been collected in the vicinity of or may inhabit the project area include the fall-run chinook salmon, the Delta smelt, the Sacramento splittail, and the longfin smelt [see Table III-9]. In addition, the striped bass is an important recreational species. And, although the *threatened* (USFWS) winter-run chinook salmon does not use the San Joaquin River watershed, many are lost through pumping operations at State Water project and Federal Central Valley Project facilities. Any water withdrawals from either or both of these systems could affect this race of chinook salmon.

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Although not on any state or federal list, the fall-run chinook salmon meets the requirements for a *threatened* or *endangered* species (Moyle, 1992). The Delta smelt has been listed as *threatened* by the USFWS. Both the longfin smelt and the Sacramento splittail are listed as Candidate Species by the USFWS. The USFWS is recommending that the longfin smelt be a Category 2 Candidate species. The splittail is a Category 2 species.

Literature Cited

Abrams, LeRoy. 1923, 1944, 1951, 1960. Illustrated Flora of the Pacific States. Stanford University Press, Stanford, CA.

Behler, John L. and Wayne King. 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. Alfred Knopf, New York, New York.

California Department of Fish and Game (DFG). December, 1992. Special Animals. Natural Diversity Data Base, Sacramento, CA.

California Department of Fish and Game (DFG). January, 1993. State and Federal Endangered and Threatened Animals of California.

California Native Plant Society. 1988. Inventory of rare and endangered vascular plants of California. Fourth Edition.

California Natural Diversity Data Base. 1993. RareFind data base printout. California Department of Fish and Game, Sacramento, CA.

Cowardin, M. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service (FWS/OBS-79/31). Washington, D.C.

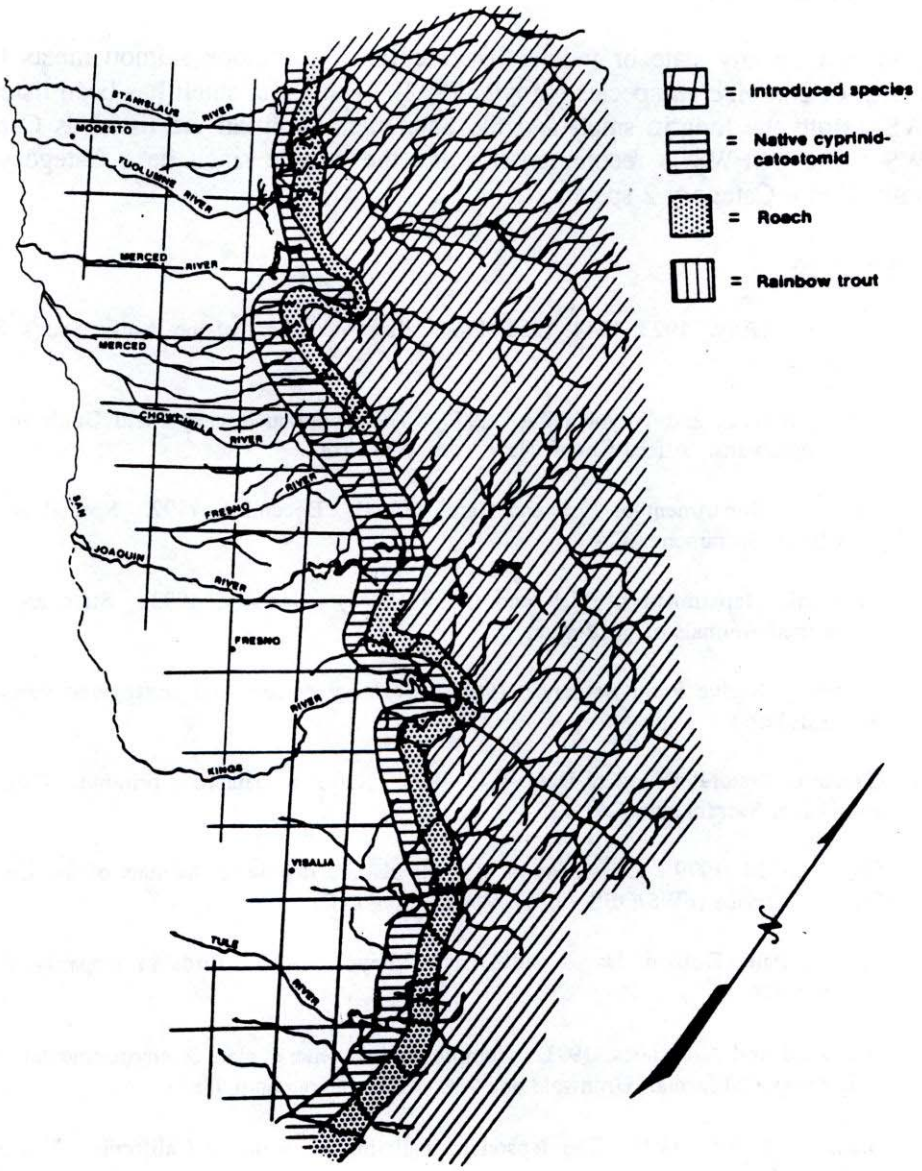
Ehrlich, Paul, Dobkin, David and Darryl Wheye. 1992. Birds in jeopardy. Stanford University Press, Stanford, CA.

Grunwald and Associates. 1991. Comprehensive general plan & environmental impact report for the City of Lathrop, California. Grunwald and Associates. Sacramento, Ca.

Hickman, J., ed. 1993. The Jepson manual: higher plants of California. University of California Press, Berkeley, CA.

FIGURE III-9

FISH ZONES OF THE SAN JOAQUIIN RIVER SYSTEM



A.A. RICH AND ASSOCIATES

TABLE III-9A

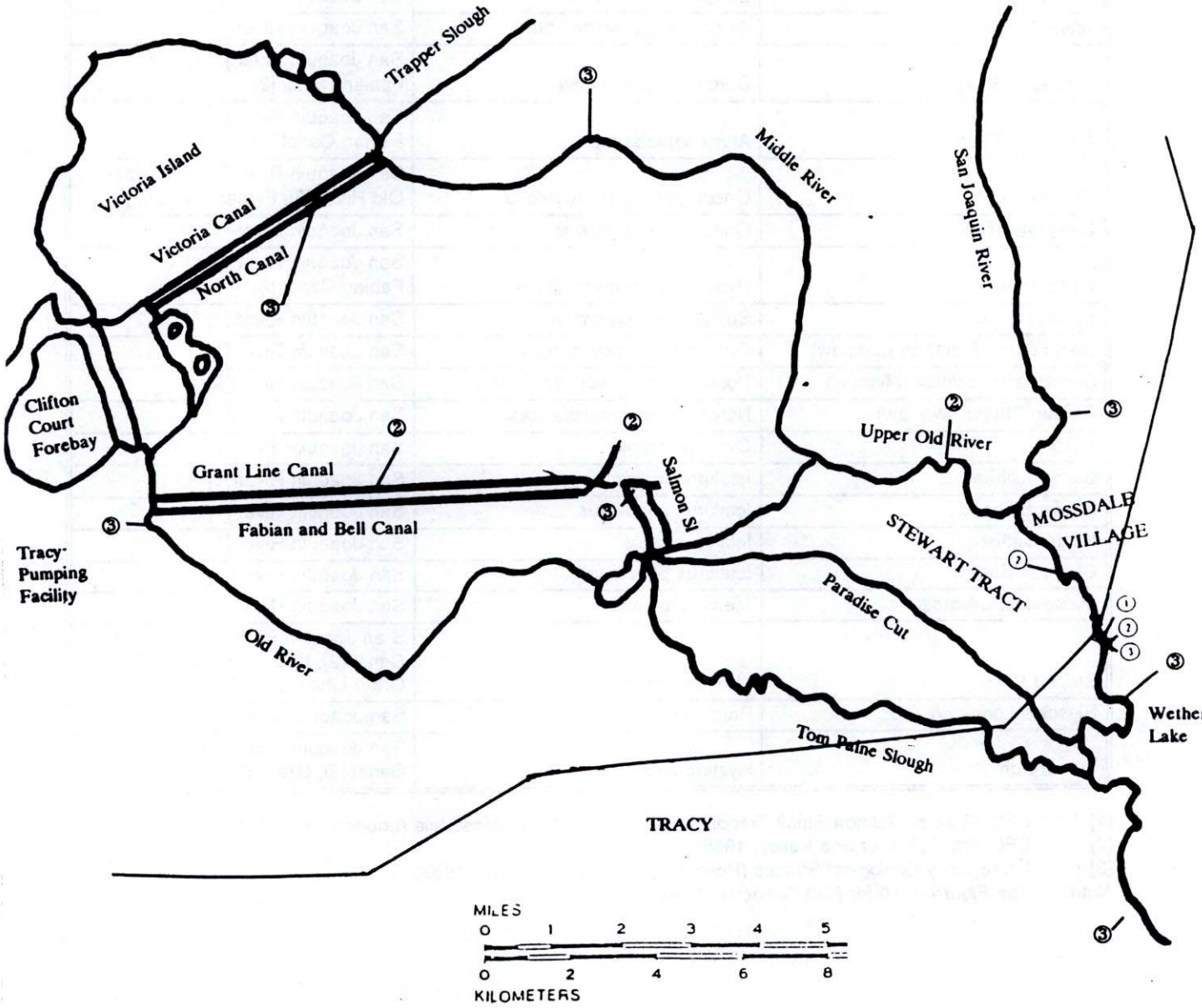
FISH SPECIES WHICH HAVE BEEN COLLECTED IN THE VICINITY OF THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCALE [See also #s on Figure III-11]
Pacific Lamprey	Lampetra tridentatus	San Joaquin River [1]
White Sturgeon	Acipenser transmontanus	San Joaquin River [1]
Threadfin Shad	Dorosoma petenense	San Joaquin River [1,2] Fabian Canal [2]
American Shad	Alosa sapidissima	San Joaquin River [2] Fabian Canal [2]
Chinook Salmon	Oncorhynchus tshawytscha	San Joaquin River [1,2,3], Upper Old River [2], Fabian Canal [2]
Steelhead Trout	Oncorhynchus mykiss	San Joaquin River [1]
Delta Smelt	Hypomesus transpacificus	San Joaquin River [2] Fabian Canal [2]
Longfin Smelt	Spirinchus thaleichthys	San Joaquin River [2]
Sacramento Blackfish (Minnow)	Orthodon microlepidontus	San Joaquin River [1]
Sacramento Splittail (Minnow)	Pogonichthys macrolepidontus	San Joaquin River [1]
Golden Shiner (Minnow)	Notemigonus chrysoleucas	San Joaquin River [1]
Carp	Cyprinus carpio	San Joaquin River [1]
Black Bullhead	Ictalurus melas	San Joaquin River [1]
Brown Bulhead	Ictalurus nebulosus	San Joaquin River [1]
White Catfish	Ictalurus catus	San Joaquin River [1]
Channel Catfish	Ictalurus punctatys	San Joaquin River [1]
Mississippi Silverside	Menidia audens	San Joaquin River [1]
Striped Bass	Morone saxatilus	S an Joaquin River [1,2], Fabian Canal [2], Upper Old River [2], Grant Line Canal [2]
Bigscale Logperch	Percina macrolepida	San Joaquin River [1]
Tule Perch	Hysterocarpus traski	San Joaquin River [1,2], Fabian Canal [2], Grant Canal [2]

[1] CFG Chinook Salmon Smolt Trapping, San Joaquin River, Mossdale (Loudermilk, 1994)
[2] CFG Trawl (Turner and Kelley, 1966)
[3] Interagency Ecological Studies (Hovecamp, 1994; Herrgesell, 1993)
Note: See Figure III-10 for Fish Collection Sites

FIGURE III-10

FISH SPECIES COLLECTED IN THE VICINITY OF THE PROPOSED PROJECT AREA



A.A. RICH AND ASSOCIATES

Holland, Robert. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Sacramento, CA.

Little, R. John. 1993. Wetland delineation report for Stewart Tract project, San Joaquin County, California. Sycamore Environmental Consultants, Sacramento, CA, under contract to City of Lathrop, CA.

Mason, Herbert. 1957. A flora of the marshes of California. University of California Press, Berkeley, CA.

Munz, Philip. 1959. A California flora. University of California Press, Berkeley, CA.

Peterson, Roger T. 1941, 1961, 1990. A field guide to western birds. Houghton Mifflin Company, Boston, MA.

Stebbins, Robert C. 1966. A field guide to western reptiles and amphibians. Houghton Mifflin Company, Boston, MA.

Udvardy, Miklos. 1977. The Audubon Society field guide to North American birds. Alfred Knopf, New York, New York.

U.S. Army Corps of Engineers (COE). 1987. Wetlands delineation manual.

U.S. Fish and Wildlife Service. 1991. The distribution, habitat and status of the valley elderberry longhorn beetle. USFWS Sacramento, CA. 133 pp.

U.S. Fish and Wildlife Service. 1993. Letter from Mr. Wayne S. White: Species list for the proposed Stewart Tract development and list of listed and proposed endangered and threatened species and candidate species that may occur in the area of the proposed Stewart Tract Development, City of Lathrop, San Joaquin County, California. USFWS Sacramento, CA.

Verner, Jared and Allan Boss. 1980. California wildlife and their habitats: western Sierra Nevada. Gen. Tech. Rep. PSW-37. Pacific Southwest Forest and Range Exp. Station, Forest Service, USDA, Berkeley, CA.

Whitaker, Jr. John. 1980. The Audubon Society field guide to North American mammals. Alfred Knopf, New York, New York.

ENERGY RESOURCES

There are no direct sources of energy within the planning area except those resulting from privately owned solar power generating units. All energy sources (other than wood burning) are provided by the Pacific Gas & Electric Company. [see Part V for further discussion]

ARCHAEOLOGICAL AND CULTURAL RESOURCES

Record Searches

Record searches of the planning area were conducted in 1991 and 1993, and field studies were completed in 1993. The precise location of mapped sites researched in 1991 by Western Ecological Services Company of Novato, CA., and in 1993 by Far Western Anthropological Research Group of Davis, CA., is being kept confidential to prevent vandalism or other damage as required by terms of agreements with the Central California Information Center at California State University, Turlock. The 1991 record search indicated that the mapped sites collectively involve the following cultural resources: a major Yokuts Indian village; various collections of Indian artifacts; and, several burial sites. The Village was reported as containing manos and metates, large bowl mortars and interments that ranged from 3500 B.C. to possibly as late as the 1830's. The malarial outbreak of the 1830's is

believed to have caused abandonment of the Village. The Village was completely destroyed in 1972 when excavated for fill dirt in the construction of Interstate 5.

The 1993 records search revealed that several intensive archaeological surveys have occurred in the vicinity of the study area. Napton (1991) examined 200 acres for a proposed gravel quarry at the southeastern corner of Stewart Tract without finding cultural resources. Werner (1984) conducted record searches and field examination of several parcels on Stewart Tract, involving 1,473 acres, without recording any new archaeological sites. Further studies by Napton (1988) and by West and Scot (1990) have confirmed the widespread disturbance and destruction of archaeological sites along the San Joaquin River.

The 1993 records search also revealed that two archaeological sites are recorded within the planning area. Site SJO-3 was recorded as a large occupation mound with human burials, mortars, pestles, and metates, located within the Mossdale Village site east of the river. SJO-19 is recorded as being close to SJO-3. It was recorded as a possible prehistoric cemetery location, with no signs of midden. The record search and literature review indicate that archaeological sites in this area tend to be located on high ground to avoid seasonal floods. Natural levees would have been the preferred site location, but these are now incorporated into the enhanced levees constructed since Euroamerican settlement. The Mossdale Village area is considered to be particularly sensitive, given previously recorded sites.

Field Surveys

There have been seven cultural resource surveys made within the Planning Area between 1986 and 1993. Four cultural resources have also been recorded within a one mile radius of the Planning Area boundaries. The Information Center has also checked the National Register of Historic Places, Points of Historic Interest files, the California Inventory of Historic Resources (1976) and the California Historic Landmarks files (1990).

The most recent field studies are those commissioned as part of the West Lathrop Specific Plan program. An archaeological reconnaissance of Stewart Tract and Mossdale Village was performed by Far Western Anthropological Research Group in the fall of 1993. The results of this survey have been published as a confidential report to the City of Lathrop, on file with the Community Development Department.[17] The sampling strategy incorporated a sensitivity model with practical considerations involved in surveying active agricultural lands and private residential properties. All levees and areas within 50 meters of watercourses on the Stewart Tract were examined. Since Napton (1988) surveyed all levees east of the San Joaquin River (Mossdale Village area), they were not reexamined. Areas targeted for intensive examination included vicinities of previously recorded sites. During the course of field work, an area reported by local residents to have been the former location of a prehistoric habitation mound was intensively examined, including shovel probes.

Sample coverage of lower elevation areas under cultivation was done in large blocks, corresponding to particular field conditions and crops. Emphasis on Stewart Tract was given to areas which appeared to be relatively undisturbed. Special attention was also given to drainages and depressions shown on the U.S.G.S. 1914 and 1915 Lathrop and Union Island topographic sheets. Fields in dense crops (e.g., sugar beets, corn) were not examined due to lack of ground visibility. Fortunately, relatively little land contained such crops at the time of the survey.

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[17] Far Western Anthropological Research Group, **A Cultural Resource Survey of the Stewart Tract and Mossdale Areas of the West Lathrop Specific Plan, San Joaquin County, California**, January, 1994.

The survey was conducted using 6-person crews spaced at 25 meter intervals. All prehistoric and historic resources were recorded to the standards outlined by the California Department of Parks and Recreation Handbook (DIR 422 A-I, 1989). No artifacts were collected, but two pestles in the possession of local residents were loaned for documentation.

A total of 2,790 acres was examined, with 2,290 acres on Stewart Tract and 500 acres within Mossdale Village. Eight miles of levees were surveyed on Stewart Tract; all remaining levees were examined during the block survey of parcels adjacent to levees. All sensitive areas were examined with the exception of the Silveira property (about 20 acres) east of the San Joaquin River for which access was denied by the owner. Consequently, this area must be examined by a professional archaeologist before any development under the Specific Plan can be allowed to occur by the City of Lathrop.

Three archaeological sites and six isolated finds were recorded during the survey. Site ST-1 was identified by area residents as a former location of an occupation mound. These reports are considered very reliable since the location was designated independently by separate individuals. Materials described as former contents include human bone and bowl mortars, clearly indicating that a major occupation and/or burial site once stood in that location. Informants report that the site was leveled more than 40 years ago, presumably to be used as fill for depressions which once pockmarked Stewart Tract. Reconnaissance at the location of the former mound revealed four artifacts dispersed over an area of about 400 x 375 meters. From shovel probes conducted at the site, it appears that no intact portion of the former mound remains. It also appears that if the alleged prehistoric mound ever existed, it has since been removed and used for fill at another location.

Site SJO-19 was located and re-recorded during the survey. While originally recorded as a possible prehistoric cemetery lacking midden deposit (Bennyhoff 1958), current evidence indicates the presence of a midden deposit, abundant shellfish and faunal remains, many pieces of disarticulated human bone, and numerous artifacts.

Site MD-1 is an unusual archaeological site in that it is composed almost entirely of small fragments of freshwater shellfish. It is conceivable that the remains are not of prehistoric or historic age, but of modern cultural or even non-cultural origin.

Isolated finds were made at six locations, with one being historic and the others prehistoric. Isolate 1 consists of horse drawn cutters, rakes and wagons. Two of the prehistoric isolates (3 and 4) are clustered on Stewart Tract, with two well-made pestles reputed to have been found there by farm laborers.

Built resources found within the study area date from the historic period, prior to 1945, and preliminarily have been classified into the three categories of residential structures, agricultural structures and facilities, and transportation facilities. Built resources have not been evaluated, and await the expertise of a qualified architectural historian.

SCENIC RESOURCES

The scenic resources that exist within the planning area consist of farmland, stands of Valley Oaks, the San Joaquin River and its tributaries surrounding Stewart Tract, riparian vegetation along waterways, old farm structures, and the Southern Pacific Railroad Bridge and the old Highway 50 bridge which cross the San Joaquin River parallel to and along the alignment of Manthey Road, respectively. The visual accessibility of these scenic resources is related to their distance from transportation corridors

and from areas of open space where they can be observed. Principal views within the planning area are provided by the freeway corridors and by County roads west of Interstate 5 which extend to the San Joaquin River and onto the Stewart Tract.

Because of their general elevation above adjacent lands, views from the freeway corridors provide both middleground and background views of the agricultural areas to the west and south, and to the Coast Range of mountains to the west. Views of the Sierra Nevada are more restricted than are views of the Coast Range because of atmospheric conditions. Views of the San Joaquin River are wholly restricted except at bridges or on the top of bordering levees because of the height of the levee system. Views of remaining stands of Valley Oaks within Mossdale Village are clearly visible from traffic along I-5, north of SR 120. Views of remaining riparian vegetation within Paradise Cut and along the San Joaquin River are limited primarily from the levees which border the Cut and the River, but which are not open to public access.

THE NOISE ENVIRONMENT

Introduction

Potentially significant noise sources within the West Lathrop planning area are intermittent railroad operations along the Southern Pacific and Union Pacific Railroads, and steady vehicle traffic along I-205, I-5 and State Route 120. Along the railroad rights-of-way, noise generated by a single event of through railroad freight traffic may exceed 95 dBA. Lesser noise levels of 65 dBA are generated by occasional trucks along Louise Avenue, Manthey Road and Stewart Road. Farm equipment can generate noise levels similar to that generated by trucks. There are no noise sensitive uses such as schools, hospitals, convalescent homes and housing for the elderly currently located within the planning area..

Noise is often described as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers have generally agreed that A-weighted sound pressure levels (sound levels) are well correlated with subjective reaction to noise. The unit of sound level measurement is the decibel (dB), sometimes expressed as dBA. Variations in sound levels over time are represented by statistical descriptors, and by time-weighted composite noise metrics such as Day-Night Average Level (L_{da}). Throughout the description which follows, A-weighted sound pressure levels are used to describe environmental noise unless otherwise indicated.

Existing Noise Environment

The West Lathrop Specific Plan area is generally flat, bounded primarily by water courses to the north, west and south, and by Interstate 5 to the east. Most of the planning area is currently used for agricultural purposes, but residential uses and a marina are also present. The greatest concentration of residential use is located along and near Manthey Road, north of the junction of I-5 and SR-120. The existing noise environment is defined primarily by freeway traffic and railroad operations. The effects of these noise sources are limited mostly to the eastern portion of the planning area.

The planning area is not significantly affected by aircraft operations from Stockton Metropolitan Airport, or helicopter training activities associated with Sharpe Army Depot northeast of the planning area. No significant noise-producing commercial or industrial uses were identified within the immediate vicinity of the planning area, although the use of farm equipment results in localized short-term increases in ambient noise levels within agricultural portions of the planning area.

Traffic Noise Levels

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was employed for the prediction of surface traffic noise levels. The FHWA model is the analytical method currently favored for traffic noise prediction by most state and federal agencies, including Caltrans. The model is based on the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the day/night distribution of traffic, and adjust the traffic volume data to yield an equivalent hourly traffic volume.

Inputs to the noise prediction model include average daily traffic volume (ADT), the day/nighttime traffic distribution, medium and heavy truck percentages and vehicle speed. The ADT's for all roadways were obtained from the Crane Transportation Group which serves as the traffic consultant in preparation of this EIR. The day/night traffic distribution, truck mix assumptions, and average vehicle speeds were obtained from Brown-Buntin Associates file data and Caltrans traffic counts. Noise due to traffic on I-5 was measured at the locations shown on Figure III-11 on May 4, 1994, at 10:15 am. A concurrent count of I-5 traffic was conducted, which was projected to obtain an hourly traffic volume. Because the planning area is so predominantly affected by I-5 traffic, no traffic noise level measurements were conducted for other roadways in the planning area.[18]

The purpose of traffic noise level measurements was to determine the accuracy of the FHWA model in describing the existing I-5 noise environment. Noise measurement results were compared to the model results by entering the observed traffic volumes, speed and distance as inputs to the model. The results of this comparison are shown in Table III-9.

TABLE III-9B

COMPARISON OF FHWA MODEL TO MEASURED NOISE LEVELS
Interstate 5 at Lathrop, May 5, 1994

Highway Position	Vehicles/Hour			Estimated Speed	Distance (feet)	Measured L_{eq} dB	Modeled[19] L_{eq} dB
	Autos	Med.Truck	Hvy. Truck				
At Grade	2136	100	672	65	100	76.5	75.7
Elevated	2136	100	672	65	100	66.1	75.7

18 Instrumentation used in developing noise measurements consisted of a Larson-Davis Laboratories (LDL) Model 700 and 820 integrating sound level meters which were calibrated before use with a LDL Type CA-250 acoustical calibrator. The equipment used meets all pertinent specifications of the American National Standards Institute for precision sound level measurement systems.

19 Acoustically "soft" site assumed.

FIGURE III-11

NOISE MEASUREMENT LOCATIONS
West Lathrop Planning Area

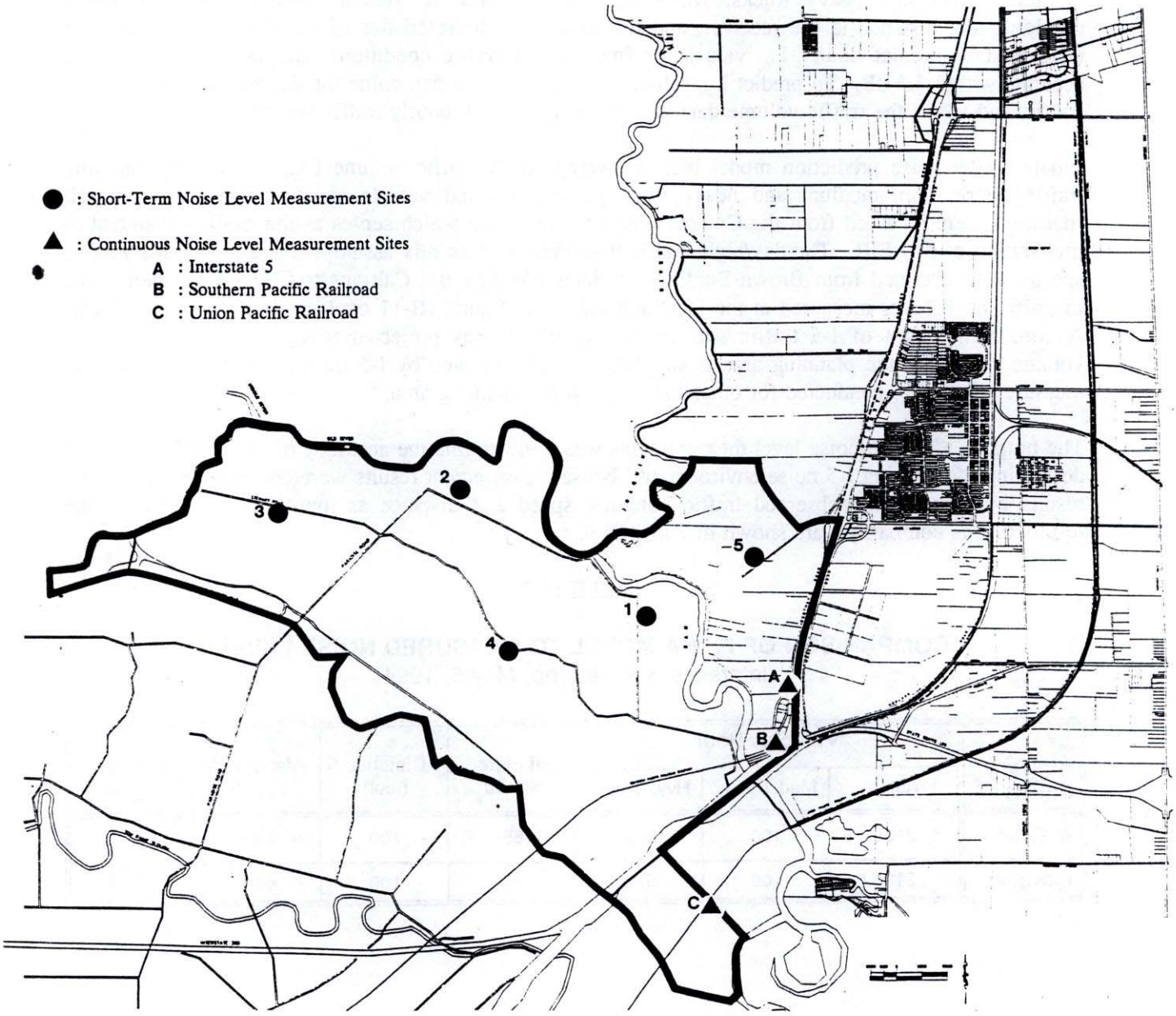

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TABLE III-10

FHWA TRAFFIC NOISE PREDICTION MODEL INPUTS
West Lathrop Planning Area

ROADWAY/SEGMENT	ADT		Day/Nite %	% Medium Trucks	% Heavy Trucks	Speed (mph)
	Existing Weekday	Existing Saturday				
Interstate 5:						
1. Roth Rd. to Lathrop Rd.	43,900	47,800	70/30	3.0	16.9	65
2. Lathrop Rd. to Louise Ave.	42,900	47,800	70/30	3.0	16.9	65
3. Louise to SR 120	42,800	47,800	70/30	3.0	16.9	65
4. SR 120 to I-205	59,700	75,600	70/30	2.7	13.6	65
5. South of I-205	17,750	18,200	70/30	3.7	19.3	65
State Route 120:						
6. Yosemite Ave. to I-5	31,800	37,350	70/30	2.9	15.5	60
Interstate 205:						
7. I-5 to MacArthur Rd.	41,950	57,400	70/30	3.2	14.9	60
Lathrop Road:						
8. Manthey Rd. to I-5	370	670	83/17	2.0	3.0	30
9. East of I-5	5,950	5,250	83/17	2.0	3.0	35
Louise Avenue:						
10. Manthey to I-5	490	1,400	83/17	2.0	3.0	30
11. East of I-5	7,850	10,500	83/17	2.0	3.0	35
Manthey Road:						
12. Roth to Lathrop	550	750	83/17	2.0	3.0	40
13. Lathrop to Louise	270	370	83/17	2.0	3.0	40
14. Louise to Stewart Rd.	350	770	83/17	2.0	3.0	40
15. South of Stewart Rd.	230	500	83/17	2.0	3.0	40
Paradise Road:						
16. Delta to Canal	170	350	83/17	2.0	3.0	45
17. Canal to Arbor	230	480	83/17	2.0	3.0	45
18. Arbor to I-5	150	360	83/17	2.0	3.0	45
Roth Road:						
19. Manthey to I-5	550	700	83/17	2.0	3.0	30
20. East of I-5	4,700	1,650	83/17	2.0	3.0	35
Stewart Road:						
21. West of Manthey	170	410	83/17	2.0	3.0	

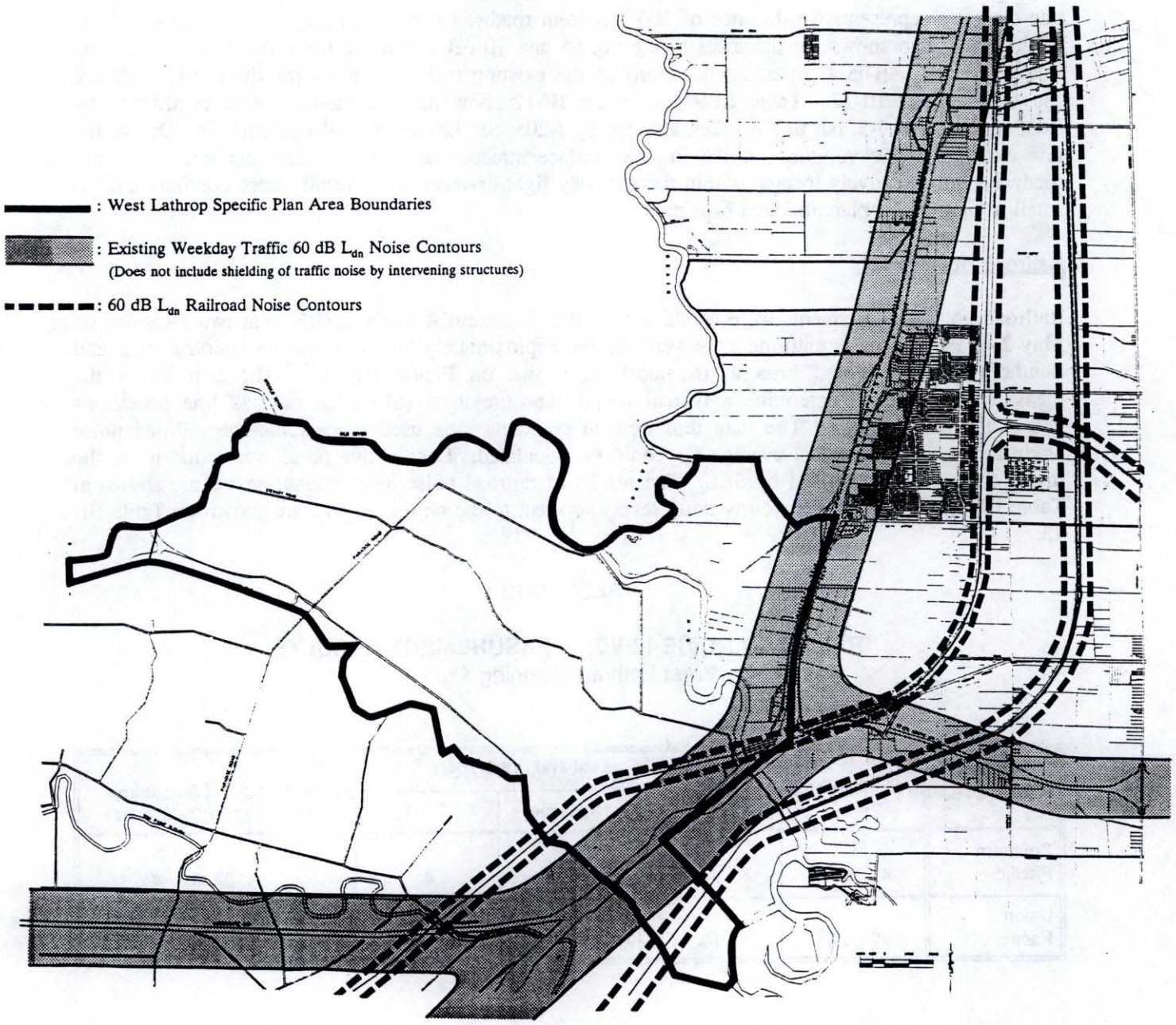
TABLE III-11

EXISTING TRAFFIC NOISE LEVELS
West Lathrop Planning Area

ROADWAY	L_{dn} dB @ 100' from Roadway Centerline		Distance to L_{dn} Noise Contours (ft.) for Existing Weekday Traffic		
	Existing Weekday	Existing Saturday	70dB	65dB	60dB
Interstate 5:					
Roth Rd. to Lathrop Rd.	79	49	371	799	1721
Lathrop to Louise Ave.	78	49	367	787	1695
Louise to SR 120	78	49	365	786	1692
SR-120 to I-205	79	80	420	906	1951
	75	75	214	462	996
SR-120:					
Yosemite Ave. to I-5	76	77	266	573	1234
I-205:					
I-5 to MacArthur	78	79	316	681	1466
Lathrop Road:					
Manthey Rd. to I-5	47	50	3	7	14
East of I-5	60	59	20	44	95
Louise Avenue:					
Manthey to I-5	49	53	4	8	17
East of I-5	61	62	25	53	114
Manthey Road:					
Roth to Lathrop	51	52	5	11	23
Lathrop to Louise	47	49	3	7	14
Louise to Stewart Rd.	49	52	4	8	17
South of Stewart	47	50	3	6	13
Paradise Road:					
Delta to Canal	46	50	3	6	12
Canal to Arbor	48	51	2	7	15
Arbor to I-205	46	50	2	5	11
Roth Road:					
Manthey to I-5	49	50	4	9	18
East of I-5	59	54	18	38	81
Stewart Road:					
West of Manthey	46	50	3	6	12

FIGURE III-12

EXISTING WEEKDAY HIGHWAY AND RAIL TRAFFIC NOISE CONTOURS
[@ 60 dB L_{dn}]



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The data from Table III-9 indicate that the model reasonably predicted I-5 traffic noise levels at the noise measurement location which was at grade with the roadway. At the elevated location (SPRR crossing), the model over-predicted I-5 noise levels by approximately 10dB. Therefore, the FHWA model was used without adjustment to predict existing and future I-5 traffic noise levels within the planning area vicinity where I-5 is relatively at grade with the planning area. At the elevated locations, the model was calibrated to account for shielding provided by the elevated roadway.

The input data used with the FHWA model are shown in Table III-10, and the results of analysis using this data at a representative distance of 100 feet from roadway centerlines are shown in Table III-11. Table III-11 also shows the distances to the 60, 65 and 70 dB L_{dn} traffic noise contours for existing weekday traffic. The approximate locations of the existing traffic contours for these dB levels are shown on Figure III-12. Table III-9 and Figure III-12 show that the planning area is affected by existing traffic on I-5, but that it is not affected by I-205, SR-120 or internal street traffic. Due to the low existing traffic volumes on the internal surface streets, the existing noise contours for those roadways are effectively located within the roadway right-of-way. As a result, those contours are too small to plot on the planning area base map.

Railroad Noise Levels

Railroad noise measurements were conducted by Brown-Buntin Associates (BBA) at two locations on May 2-4, 1994. The monitoring sites were located approximately 50 feet from the Union Pacific and Southern Pacific railroad lines at the locations shown on Figure III-12.[20] The purpose of the measurements was to determine a typical sound exposure level (SEL) for railroad line operations within the planing area. The data thus derived could then be used to describe the railroad noise environment, and an annual average L_{dn} could be calculated. Locomotive noise was found to be the major contributor as defined by SEL. The results of railroad noise level measurements are shown in Table III-12. The measured hourly noise levels adjacent to the railroad tracks are shown on Table III-13.

TABLE III-12

RAILROAD NOISE LEVEL MEASUREMENT RESULTS
West Lathrop Planning Area

RAILROAD	Monitoring Period	Number of Apparent Railroad Operations			Mean Sound Exposure Level (SEL) @ 50 feet
		Daytime	Nighttime	Total	
Southern Pacific	43 hours	4	0	4	103 dB
Union Pacific	42 hours	16	11	27	105 dB

20 Instrumentation consisted of LDL Model 820 and 700 precision integrating sound level meters which were calibrated before and after use to ensure the accuracy of measurements. The microphones were placed five feet above the ground, with an unobstructed view of the railroad tracks. The equipment used meets all pertinent specifications of the American National Standards Institute for precision sound level measurement systems.

TABLE III-13

RAILROAD NOISE LEVELS
West Lathrop Planning Area

RAILROAD	L_{dn} dB, 100 feet from tracks	Distance to Railroad L_{dn} Noise Contours [feet]		
		70 dB	65 dB	60 dB
Southern Pacific	63	63	136	293
Union Pacific	70	100	215	464

Railroad operational data were obtained from the Southern Pacific and Union Pacific Railroad dispatchers to determine existing and predicted future rail traffic volumes. Existing operations include eight Union Pacific and five Southern Pacific trains per day, on an unscheduled basis. No estimates of future rail activity were available. However, discussions with Amtrak and San Joaquin County staff indicate that plans are underway for adding passenger service on the UP line, with an initial service of two trains per day, with ultimate service dependent on demand. Amtrak/commuter operations generally are expected to occur during the daytime period.

Based on the data contained in Table III-11, approximately 15 railroad operations per 24-hour period occurred on the Union Pacific line, while only two operations per 24-hour period occurred on the SP line. For a conservative estimate of existing railroad noise exposure, it was assumed that 15 daily operations occur on the UP line rather than the eight operations reported by UP officials. Similarly, five daily operations were assumed for the SP line as compared to the two operations observed.

Using the SEL values reported in Table III-11, and the assumed number of daily operations described above, the L_{dn} contribution of each train type may be calculated as follows:

$$L_{dn} = \overline{SEL} + 10 \log N_{eq} - 49.4 \text{ dB, where:}^{21}$$

The results of this analysis are shown in Table III-12. The approximate distances to the 60, 65 and 70 dB L_{dn} railroad noise contours are also shown in Table III-12. The approximate location of the 60 dB L_{dn} railroad noise contour is shown on Figure III-12.

Aircraft Noise Levels

The West Lathrop planning area is located well south of the Stockton Metropolitan Airport. Airport noise exposure contours have been prepared recently for this airport for the FAR Part 150 Airport Noise Compatibility program. According to those noise exposure maps, the planning area is located well beyond both the existing and projected future 60 dN CNEL noise contours.

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21 SEL is the mean SEL of the train passage, N_{eq} is the sum of the number of daytime events (7:00 am to 10:00 pm) per day plus 10 times the number of nighttime events (10:00 pm to 7:00 am) per day, and 49.4 is 10 times the logarithm of the number of seconds per day.

An analysis of helicopter operations associated with the Sharpe Army Depot has been prepared recently for the Valley Haven residential/commercial development in northeast Lathrop. That analysis indicates that the worst-case noise generation of that facility occurs during seasonal helicopter training exercises, but that the West Lathrop planning area is located beyond the 60 dB CNEL noise contours generated under worst-case operations.

General Ambient Noise Levels

A short-term noise level measurement survey was conducted to describe the general ambient noise levels within the planning area at locations not affected by major highway vehicle traffic or railroad noise sources. The survey involved short-term ambient noise level measurements at five locations on May 4, 1994, as shown on Figure III-12. The results of the ambient noise level measurements are shown on Table III-13.

TABLE III-14

MEASURED AMBIENT NOISE LEVELS IN THE ABSENCE OF MAJOR NOISE SOURCES
West Lathrop Planning Area, May 4, 1994

SITE	Time	Measured Ambient Noise Level, dB[22]				Noise Source(s)
		L_{eq}	L_{max}	L_{50}	L_{90}	
1	11.05 am	47	67	38	36	Distant traffic
2	11:25 am	52	70	42	37	Birds
3	11:40 am	49	67	40	37	Local traffic
4	11:55 am	53	68	46	39	Distant traffic
5	12:10 pm	51	69	42	39	Farm equipment

PUBLIC SERVICES

Public services of importance to the purposes of the General Plan include the domestic water, sewerage and drainage systems, solid waste disposal, law enforcement, fire protection, parks and recreation and schools.

Sewer and Water Services

Sewer and water services are provided by the City of Lathrop after its having assumed responsibility for the operations of the Lathrop County Water District as of July 1, 1991. While the City maintains

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22 The L_{eq}, L_{max}, L_{50} and L_{90} descriptors refer to the average, maximum, median and background noise levels, respectively.

the sewage collection system, sewage treatment is provided by the Manteca Wastewater Treatment Facility which serves as a regional plant to serve Lathrop as well as Manteca. The City is entitled to about 14.7% of the Facility's design flow capacity. The City has also purchased a similar percentage of treatment capacity in the recently constructed Phase II expansion of the Manteca Treatment Facility, which allows urban expansion for only part of the acreage extending north of Lathrop Acres to the vicinity of Squires Road east of Interstate 5.

Sewage treatment capacity is also provided to the Kearney Ventures (Crossroads) industrial park, located east of I-5, west of the Southern Pacific Railroad and north of SR 120, by the construction of a separate treatment plant within the industrial park. There is no sewage treatment capacity currently available which could provide service to lands that would develop west of Interstate 5. The General Plan calls for one or more new plants to serve the West Lathrop planning area.

Water service is only available from wells which tap into groundwater aquifers. The City's water system consists of wells, a pump station, an elevated storage tank and water lines for distribution to system users. The annual safe groundwater yield available to Lathrop has been estimated at 3,078 acre feet per year for a 5-well system. Records indicate that the system provided about 1,289 acre feet of water in 1988. None of the existing water system facilities are capable of serving lands within the West Lathrop planning area.

Storm Water Drainage

Storm water drainage consists of surface runoff in new developments to detention ponds, with conveyance to the San Joaquin River by a 30" pipe. Drainage in older developed and partially developed areas of the City is either lacking or of marginal character because of the lack of capability for positive off-site disposal. All drainage lines are sized based on a 10 year intensity 48-hour storm. None of the existing drainage facilities are capable of serving lands within the West Lathrop planning area.

Solid Waste Removal Service

Solid waste removal is handled under a franchise agreement with a private disposal company. The franchise includes both residential and commercial sources of waste. Disposal has been either to a transfer station a mile northeast of town, or to the relatively new Foothill Landfill which is located about 35 miles northeast of Lathrop. The Contractor has sole discretion in selecting the solid waste facility to which waste is transported. The Foothill Landfill has a design capacity that is not expected to be reached until the middle to latter part of the next Century.

Law Enforcement

Police service is provided to the City under contract with the San Joaquin County Sheriff's Department. Since City incorporation, police service has been greatly expanded to where patrol units operate throughout a 24 hour period, providing routine patrol of the entire City. Additional assistance can also be summoned as needed under a mutual aid agreement with other cities of the County.

Fire Protection

About one-half of the Stewart Tract lays within the boundaries of the Tracy Rural Fire District, with the remainder being served by the City. Fire protection, suppression and first response emergency medical services within the City is provided by the Manteca-Lathrop Fire Protection District. The

District's fire fighting force consists of paid personnel and reserve call personnel. Major equipment includes pumpers, aerial ladder, rescue unit and water tender. Also provided to the community is the hurst-tool ("jaws of life"). All firefighting personnel are Emergency Medical Technicians (EMTs). The station is staffed 24 hrs. by a minimum of five personnel, including a Captain and Battalion Duty Chief. On duty during the 40 hour work schedule is a Fire Chief, Administrative Secretary, Fire Marshall and two Assigned Battalion Chiefs. Additional assistance is available from two outlying stations, and from surrounding cities, San Joaquin County and State Fire agencies upon call through mutual aid agreements. A Fire Facility Fee is charged to new development to off-set the cost of additional equipment and fire stations.

Public Schools

Lathrop, including Mossdale Village, is served by the Manteca Unified School District, while Stewart Tract is located entirely within the Banta Elementary and Tracy High School Districts. The Lathrop Elementary School serves grades K-8, and is the only school in Lathrop. Students are bused to the high school in Manteca. The District is badly in need of a second elementary school facility in Lathrop because of the substantial increase in elementary grade enrollment that has occurred from residential expansion in the last few years. A new K-8 school site has been provided in the Country Squires subdivision located north of Lathrop Acres and east of I-5. The District-wide increase in school child population has resulted in a multiplier of approximately 0.74 per residence for grades K-8 and 0.18 per residence for grades 9-12.

The Manteca District levies the maximum developer fees allowed by law to help finance classroom facilities, but the amount is inadequate for permanent classrooms and core facilities. To off-set the difference, the District requires developing areas to annex to a Mello-Roos special district.

Parks and Recreation

The City maintains a nine acre community park and community center building located on Fifth Street close to the Lathrop Elementary School. Outdoor facilities include two softball diamonds, basketball and volleyball courts, a tot lot, and picnic shelter. Indoor facilities include a gymnasium, multi-purpose rooms and an office. A neighborhood park is located northwest of the intersection of Fifth and Lathrop Road in a developing residential subdivision. Also, three storm drainage basins have been converted to use for outdoor recreation. Public boat landing facilities are located along the San Joaquin River at the west end of Dos Reis Road and at Mossdale Landing in the southern part of the planning area. These facilities are located outside of the City Limits, but will be important areas of recreation service as the community expands to the west.

Gas, Electric and Telephone Services

Gas and electric service is provided by the Pacific Gas & Electric Company. Because of Lathrop's proximity to major transmission lines and substation facilities serving south central San Joaquin County, facilities can be planned and constructed to serve current and anticipated growth. Telephone service to Lathrop is shared by the Pacific Bell Telephone Company and the Continental Telephone Company (CONTEL). CONTEL provides service to almost all of the area within the City Limits south of Lathrop Road, excepting a 500' wide strip along the east side of Interstate 5.

PART IV

IMPACTS MITIGATED BY PROJECT PROPOSALS

INTRODUCTION

Sources of Mitigation embodied in this EIR

In developing this EIR, relevant mitigation has been abstracted from the EIR prepared for the Lathrop General Plan, from baseline environmental studies conducted during preparation of the Specific Plan, and from proposals of the Specific Plan which have the effect of mitigating impacts. Additional mitigation is provided (see Part V) for impacts not mitigated to a level of less than significant by measures contained in Specific Plan proposals as described here in Part IV. Separate findings are required for those impacts that cannot be mitigated to a level of less than significant. The sources and relationships of relevant mitigation which combine as the final products of environmental analysis are shown in Figure IV-1.

Relationship to Mitigation Measures Required by the General Plan EIR

The discussion of impacts and mitigation measures provided in this Part IV of the EIR incorporates the impacts and mitigation measures discussed in the EIR for the Lathrop General Plan. This assures that relevant General Plan mitigation requirements are given appropriate attention by the Specific Plan.

Mitigation Required as the Result of Additional Baseline Environmental Studies

The discussion of mitigation in Parts IV and V of this EIR goes beyond the mitigation requirements of the General Plan EIR as the result of extensive environmental baseline studies conducted early during the Specific Plan formulation process. Of special importance are extensive studies of biological resources, archaeological and cultural resources, geotechnical analysis of surface and sub-surface conditions (including levees), analysis of the potential for flooding, and the "testing" of land use, transportation and circulation proposals on the ability of existing and proposed roadway systems to function at appropriate levels of service. Several baseline studies have been published separately as technical appendixes.

Self-Mitigating Proposals of the Specific Plan

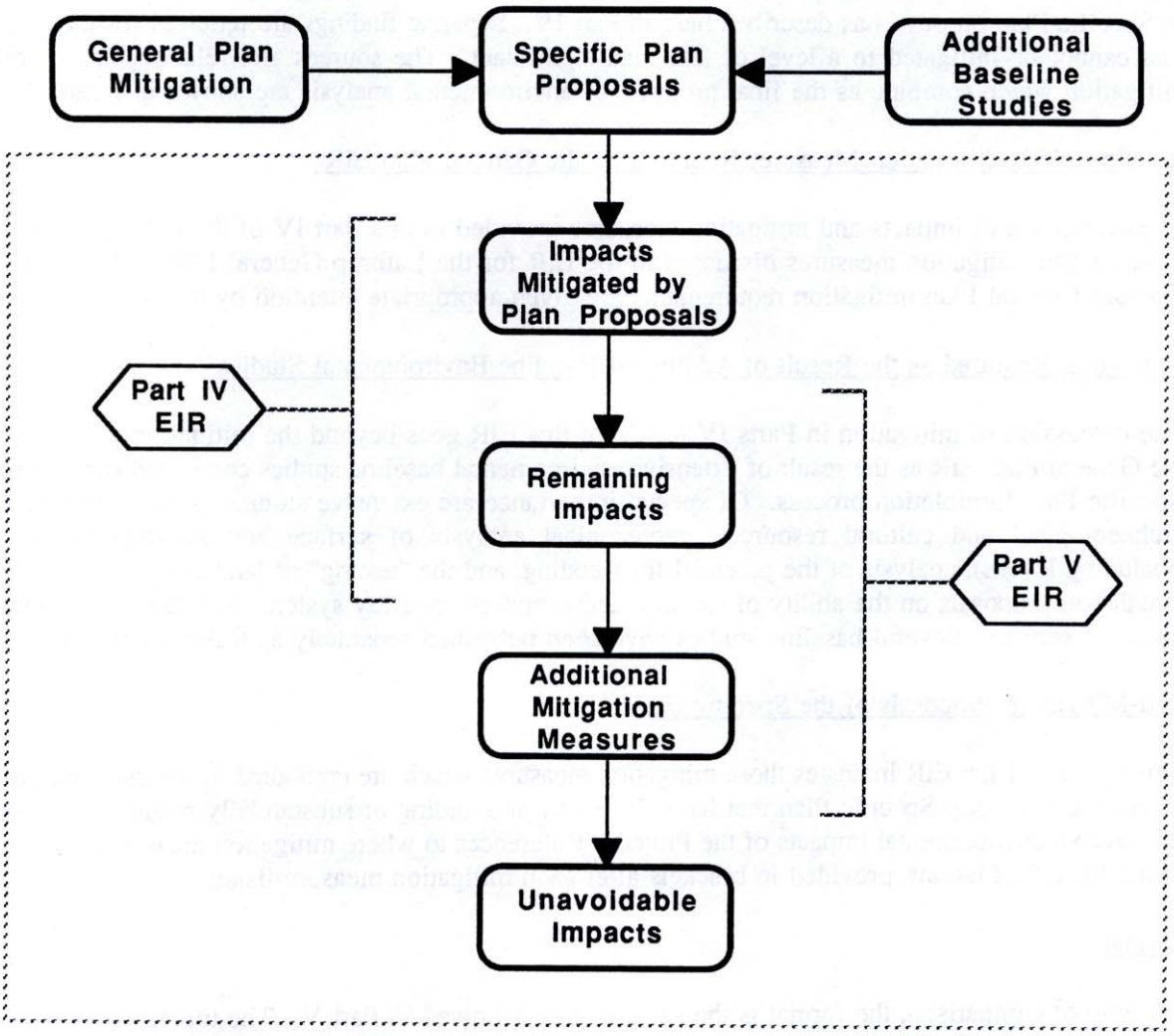
This Part IV of the EIR indicates those mitigation measures which are embodied in policies and proposals of the West Lathrop Specific Plan that have the effect of avoiding or substantially reducing the potential for adverse environmental impacts of the Project. References to where mitigation measures can be found in the Specific Plan are provided in brackets after each mitigation measure listed.

Format

For ease of comparison, the format is the same as that followed in Part V. The topical discussion often applies to both Mossdale Village and Stewart Tract. Where it applies to only one area, it is preceded by a notation in brackets of either [M] for Mossdale or [S] for Stewart Tract. Where the discussion applies to both areas, it is preceded by [B]. The relative importance of an impact within the CEQA definition of "significant effect" is indicated by brackets and bolding (e.g., [**significant**]). For each environmental topic, impacts that could occur are listed, followed by the mitigation measures that are embodied in policies and proposals of the Specific Plan. Discussion for each topic concludes with statements supporting the level to which impacts will be mitigated.

FIGURE IV-1

SOURCES AND RELATIONSHIPS OF MITIGATION TO PREPARATION OF THE EIR



Criteria for determining whether a particular type of environmental impact is "significant" are included in either Part IV or Part V of this EIR, as follows. Where an impact is mitigated to a level of less than significant solely by mitigation measures included in the Specific Plan proposals, and that impact is therefore discussed only in Part IV of this EIR, the significance criteria for that impact are included in Part IV. Where an impact is not fully mitigated in Part IV, and further discussion of the impact and relevant mitigation measures are contained in Part V, the significance criteria for that impact are included in Part V.

LAND RESOURCES

Compaction and Overcovering of the Soil

Significance Criteria:

Under CEQA Guidelines [Appendix G, (f), (g), (I) and (q)], a project would have a significant effect on the environment if it would substantially degrade water quality, contaminate a public water supply, substantially interfere with groundwater recharge, or cause substantial flooding, erosion or siltation.

Impacts:

[B] 1. Vacant and agricultural soils will be compacted for building construction and overcovered with exposed impervious surfaces such as roofs, driveways, streets and off-street parking areas. The extent of overcovering will be determined by site plans submitted for City approval for each separate construction project. The more extensive compaction and overcovering of soils that will occur will increase surface water runoff [**potentially significant**] and the potential for wind erosion during land grading and construction. [**potentially significant**]

[S] **Project Mitigation:**

[Note: Applicable project mitigation called for by the General Plan EIR which has relevance to the West Lathrop Specific Plan is shown in Table IV-1.]

[B] 1. a. Positive drainage will be required for each site consistent with overall master plans of drainage for Mossdale and Stewart Tract that will avoid adverse impacts on other properties. Specific drainage improvements for a given project would be determined at the time of Site Plan Review (or equivalent) under provisions of the Specific Plan or the City's Zoning and Subdivision Ordinances. [see Specific Plan (SP), pp. 72-79]

[B] 1. b. The design of surface water detention and conveyance facilities provides for multi-purpose recreational and wildlife habitat use of surface waters within recreation and other open space corridors. Detention reservoirs will be designed to control the rate of surface water runoff, and for the control of debris, sediment and contaminants. [see SP, pp 76-77]

[B] 1. c . Positive control of surface water runoff and sediment during wet weather is required for all types of construction activity. This includes requirements for trapping sediments and debris, prohibition of grading during periods of rainfall or when soil moisture is high, requirements for stockpiling and reuse of native (or agricultural) topsoil, and revegetation or temporary methods of controlling erosion of barren areas to avoid sedimentation of drainageways.

TABLE IV-1

SUMMARY OF MITIGATION MONITORING LISTED IN THE GENERAL PLAN EIR HAVING APPLICABILITY TO THE SPECIFIC PLAN

TOPIC	Applicable Specific Plan Policies	Applicable Specific Plan Mitigation	When Monitoring is Required	When Mitigation is Completed
Specific Plan Preparation & Adoption	All policies of the Specific Plan	Finer grained urban design and environmental analysis	Throughout Specific Plan preparation process	Upon adoption of the Specific Plan(s) by the City of Lathrop
Foundation Safety	Assure protection from effects of seismic hazards	Adequate foundation soils engineering	During preliminary project design stage	Upon submission to and approval of plans by City
Air Quality	Transit capability to be provided	Staged program of rail transit	At theme park opening	On-going staged program
	Protect air quality during project construct.	Fugitive dust control	During project construction	Completion of construction
	Reduce auto traffic	Trans. management	On-going	On-going
	Avoid stationary emissions	Emission control	On-going	On-going
Farmland Conversion	Reduce impacts of farm land conversion	Phased development	On-going	On-going
Water	Protection from flooding	Flood proofing	During project construction	Prior to occupancy
	Assure adequate water supply	Obtain entitlements	Prior to project construction	Prior to project construction
	Reduce water requirements	Construct staged facilities for reclamation reuse	First facility prior to development west of I-5	Prior to occupancy permits
	Provide positive surface drainage	Drainage collection & disposal	During project construction	Prior to occupancy
Biological Resources	Developers	Habitat replacement, enhancement & expansion	During or prior to project construction	Somewhat ongoing - when results are evident

TABLE IV-I cont.

TOPIC	Applicable Specific Plan Policies	Applicable Specific Plan Mitigation	When Monitoring is Required	When Mitigation to be Completed
Circulation & Traffic	Provide adequate traffic capacity for streets	On-site and off-site street improvements	During project construction	Prior to occupancy
	Provide adequate freeway and interchange capacity	Freeway & interchange improvements	On-going; & during Caltrans STIP	At completion of contract construction
	Improve capacity of existing streets	Improvements to exist. Arterial & Collector streets	During Capital Improvement Program	At completion of contract construction
Noise	Protection from adverse noise levels	Noise attenuation	Project approval & construction	Prior to occupancy
Energy Utilities	Provide adequate electrical service and energy conservation	Planning & installation of facilities	Specific Plan stage	Prior to occupancy
Human Health	Avoid industries with hazardous characteristics	Hazard./toxics; qualified process engineering	Project design & approval	Prior to occupancy
Aesthetics	Preserve & enhance visual environment	Protect views; achieve urban design and bldg. quality	Project design & approval	Prior to bldg. permit
Open space/-recreation	Meet outdoor recreation needs of the community	Park & open space improvements	Project design & approval	Prior to occupancy
Schools	Meet elementary and secondary education needs	School planning, fees & construction	Project construction, Capital Improve, Prog.	Project construction, on-going
Development Regulation	Development regulations consistent with Specific Plan	Development permits	Specific Plan, zoning & sub. ord. admin.	On-going

The Specific Plan provides that in both the Stewart Tract and Mossdale Village areas, provisions to meet anticipated National Pollution Discharge Elimination System (NPDES) requirements shall be made prior to stormwater being discharged to the San Joaquin River, Old River and Paradise Cut. [see SP, p 74] Further discussion of this mitigation is provided in Part V of this EIR.

[B] 1. d. Mitigation of particulates through the employment of dust control measures is described under the subsequent topic of Air Quality in Part IV of this EIR.

Effect of Project Mitigation:

The above described impacts of the Project on compaction and overcovering of the soil will be reduced by the above Project mitigation to a less than significant level. The Project mitigation will ensure that construction-related water quality impacts associated with building materials and wastes resulting from the Project will be minimized by developing and implementing a Storm Water Pollution Prevention Plan (SWPPP) as required by the NPDES program.. Post-construction runoff water quality impacts will also be minimized by implementation of a SWPPP, and the Project proponents will be responsible for the operation and maintenance of Best Management Practices to prevent water quality impacts.

Potential for Soil Liquefaction

Significance Criteria:

See discussion under Geology and Seismic Hazards contained in Part V/

[S] **Impacts:**

2. Soils within and under the levees surrounding Stewart Tract are subject to the potential for liquefaction and levee failure during a severe earthquake. **[potentially significant]** The potential for levee failure is increased if an earthquake were to occur during times of high flood conditions exceeding that created by a 100 year event. **[potentially significant]** Such a combination of hazardous events could seriously jeopardize the health and safety of thousands of people within Stewart Tract. **[potentially significant]**

Project Mitigation:

Mitigation of the potential for liquefaction involves extensive soils and foundation engineering and special construction techniques. Baseline studies conducted during formulation of the Specific Plan support the following policies that serve to mitigate project impacts: [see SP under Site Plan Review, p 150, and Part V of this EIR]

[S] 2. a. Soil compaction tests, and geotechnical analysis of soil conditions and behavior under seismic conditions are required of all subdivisions and of all commercial, industrial and institutional structures over 6,000 square feet in area (or in the case of institutional structures, those which hold 100 or more people).

[B] 2. b. A preliminary soils report is to be prepared by a registered geo-technical engineer for any residential development project, based upon field soil samples and laboratory tests. If the report indicates the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects, the developer shall provide for and submit the findings of a soil investigation of each housing site proposed. The soil investigation shall be prepared by a state-

registered civil engineer and shall recommend corrective action to prevent structural damage to each dwelling to be constructed. Prior to the issuance of a building permit, any recommended action approved by the Building Official shall be incorporated into the construction plans and specifications of each dwelling or structure.

[B] 2. c. A preliminary soils and geologic report, prepared by a state-certified engineering geologist and based on adequate test borings and laboratory investigations, shall be submitted to the Building Official for every subdivision, planned development or other residential project at the time of submitting a tentative map or other type of development application to the City.

[B] 2. d. If the preliminary geologic report indicates the presence of critically expansive soils or other soil problems (e.g., potential for liquefaction which if not corrected could lead to structural defects), the developer shall provide such additional soils investigation for each development site as may be requested by the Building Official. The geologic investigation shall be prepared by a state-certified engineering geologist and shall recommend further corrective action to prevent structural damage to dwelling units. Prior to the issuance of a building permit, any recommended action approved by the Building Official shall be incorporated into site preparation and the construction of each dwelling.

[B] 2. e. The provisions of policy nos. 2.a. - 2.d., above, shall be applicable to all commercial, industrial, institutional and public development projects.

[B] 2. f. Areas where building construction has been determined to be inappropriate because of hazardous conditions have been made a part of the recreation and open space systems.

[B] 2. g. Special measures required for flood control are described under the topic of Water Resources.

Effect of Project Mitigation:

The Project mitigation will partially mitigate impacts associated with potential soil liquefaction in the event of a severe earthquake by ensuring that building construction will be avoided where soils and geologic tests determine that such construction would be inappropriate because of hazardous conditions. Additional mitigation measures are discussed in Part V. As a practical matter, the unknown severity of future seismic events makes it infeasible to fully mitigate impacts associated with potential for soil liquefaction in the event of a severe earthquake. Consequently, a statement of overriding considerations will be required for Items 2.a through d, above prior to certification of the Project EIR.

Agricultural Land Conversion

Significance Criteria:

See discussion under Agricultural Land Conservation contained in Part V.

Impacts:

[B] 1. The eventual conversion of approximately 5,800 acres of productive agricultural land to urban use under the West Lathrop Specific Plan will be irreversible, since it is not reasonable to assume that later re-conversion to agricultural use will ever become economically feasible. [**significant**]

[B] 2. The cumulative loss of value of agricultural production that would occur at buildout would be in the order of $6.2 million (current dollars).[1] The annual loss of field crops at buildout would represent about 0.93% of current county-wide field crop value. For vegetables, the annual loss would be about 3.10% of current county-wide vegetable crop value; for fruit and nut crops, the annual loss would be about 0.35% of current county-wide fruit and nut crop value. [**significant**] The cumulative impact of these losses to the State's economy as a whole would be in the order of $24.8 million.[2] [**significant**]

[B] 3. Other potential impacts involve a shifting in the location where urban-agricultural conflicts may occur from the current interface between urban and agricultural lands to other locations where urban expansion occurs. [**potentially significant**]

[B] 4. The conversion of farm land to urban use will have some positive benefits, such as eliminating the use of agricultural pesticides, dust from plowing and discing operations and farm wastes. [**significant positive**]

Project Mitigation:

[B] Mitigation measures to minimize this impact are provided in Part V of the General Plan pertaining to Open Space for Managed Resource Production and Open Space for Shaping Urban Growth. They include the policy on phased development and maintaining a rate of population growth which will not exceed the ability of the City to provide needed urban services. The policy on phasing has been incorporated into the Specific Plan. [see SP, p 122, 3rd para.] It is important to note that the measures called for by the General Plan EIR can only postpone the irreversible loss and ease conditions during the interim. A new measure under the Specific Plan is to purchase land and dedicate conservation easements over agricultural land as permanent mitigation for the loss of Swainson's hawk foraging habitat. This topic is also discussed further in Part V of this EIR.

Effect of Project Mitigation:

The above Project mitigation will partially mitigate impacts associated with agricultural land conversion by avoiding the fracturing or fragmentation of the urban pattern, providing for the gradual outward conversion of agricultural lands, and assuring a rational and economically feasible and more efficient pattern of urban services. The mitigation measures are intended to minimize those impacts on agricultural operations that will be replaced gradually over the 20-30 year period required for Project buildout. Additional mitigation measures are discussed in Part V. The ultimate and irreversible loss of agricultural land to urban use will remain an unavoidable significant impact, and will require a statement of overriding considerations prior to certification of the project EIR.

Seismic Hazards

Significance Criteria: See discussion under Geology and Seismic Hazards contained in Part V.

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[1] Derived from the **San Joaquin County Agricultural Crop Report, 1990**, San Joaquin County Agricultural Commissioner's Office, and based on the average $ yield per acre for field crops, vegetables and fruit and nut crops representative of crop patterns in the Lathrop Planning Area.

[2] The California Crop and Livestock Reporting Service estimates that every farm dollar generates an additional three dollars in the State's economy.

Impacts:

[S] 1. The occurrence of an earthquake exceeding 6.5 on the Richter scale poses a potential for soil liquefaction and levee failure within Stewart Tract, particularly within extended periods of high water in adjacent watercourses, along with a consequent possibility for the loss of life and property due to flooding and structural failure. [**potentially significant**]

[S] **Project Mitigation**:

[B] 1. a. Flood control and drainage works construction will be designed to meet standards set by the U.S. Corps of Engineers, the Federal Emergency Management Agency (FEMA), the California Reclamation Board, and the California Department of Water Resources. [see SP, p32, Objective 8A, para. 3]

[S] 1. b. Levees along the San Joaquin River, Old River and Paradise Cut will be constructed to elevations that meet Project Levee Standards. The required increase in levee height at each location will be based on field mapping and soils investigations completed during preparation of the Specific Plan. [see SP, p150 Site Plan Review]

[S] 1. c. Areas of population concentration will be designated and designed to provide sufficient space above flood levels to provide "safe ground" until evacuation from affected sites becomes possible. [[see SP, p32, Objective 8A, para. 2]

[B] 1. d. The Specific Plan provides for the construction, equipping and manning of fire stations at appropriate locations to assure capability to deal effectively with emergency service demands resulting from natural or man-made disasters or other causes. [see SP, p32, Objective 7A]

Impacts:

[S] 2. A devastating earthquake has the potential for generating panic among thousands of participants at a theme park or similar recreation facility and among spectators at major sporting events, with the possibility of loss of life and personal injury. [**potentially significant**]

Project Mitigation:

[S] 2. a. An earthquake and flood protection plan will be prepared for the Stewart Tract to assure capabilities for evacuation and to deal effectively with crowd control so as to avoid panic at major activity centers and public events. The means and capability to assure swift emergency response by medical, police and fire protection services will be in place before the opening of any theme park or other major recreation commercial use on Stewart Tract. [see SP, p32, Objective 8A, para. 2] Further discussion of this topic is provided under the topics of Health and Safety in this part of the EIR and in Part V.

[S] 2. b. Flood control works are proposed by the Specific Plan which will assure capability to control flood waters from inundating all parts of Stewart Tract, and to confine floodwaters to the smallest possible areas of impact consistent with the extent of flooding involved. This includes providing works to protect areas from flooding due to levee breaks. [see SP, pp 72-79] Further discussion of this topic is also provided under the topics of Drainage and Flood Control in this part of the document.

Effect of Project Mitigation:

The above project will partially mitigate impacts associated with potential risk of damage caused by strong groundshaking and levee failure during seismic events by ensuring that flood control and drainage works, including levees, will be constructed to meet applicable Federal and State standards to reduce the potential for damage during seismically-induced groundshaking. They will further ensure that the areas of population concentration will be designed to provide "safe ground" until evacuation from affected areas becomes possible. However, the risks associated with groundshaking and liquefaction during earthquakes cannot be completely mitigated, and will remain a significant unavoidable impact. Additional mitigation measures are discussed in Part V.

WATER RESOURCES

Water Supply

Significance Criteria:

See discussion under Water Resources contained in Part V.

Impacts:

[B] 1. Dependence on expanding water supplies by drilling new wells will place the growing community in serious jeopardy as the quality of water from underground aquifers continues to deteriorate because of increased salinity. Failure to achieve an assured permanent supply of potable water from non-well sources will jeopardize the City's ability to supply needed water in the future. [**potentially significant**]

[S] 2. The conversion of agricultural water entitlements for the Stewart Tract to urban use has the potential for reducing or eliminating continuing entitlements that will be needed for agricultural use as phased urbanization occurs. The loss of entitlements necessary to assure continued agricultural use of non-urbanized lands could result in the premature commitment of lands to urban use. In the event that the level of urbanization envisioned for Gold Rush City does not materialize, loss of agricultural water entitlements could commit the entire Tract to some other forms of urbanization in the future. [**potentially significant**]

Project Mitigation:

[B] 1. The General Plan EIR requires that development within Stewart Tract and Mossdale Village be withheld until the extent of development to be approved is supported by assurance that a firm supply of water will be obtained commensurate with the amount of urbanization to be provided. The possible need for phasing-in urban water supplies is recognized. To meet this test, the City has been exploring several approaches singly, and in combination, including conversion of appropriative rights, riparian rights, well field expansion, and contracting for surface waters that would be provided by the South San Joaquin Irrigation District. [see SP, p 60, 2nd para.]

[S] 2. Any conversion of agricultural water entitlements for the Stewart Tract to urban use must assure the continued availability of water for on-going agricultural use until such time that phased conversion of lands to urban use is justified. [see SP, p 61, top para]

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate Project impacts on water resources by assuring that an adequate supply of potable water and water needed for agricultural irrigation will be available as phased development occurs. Additional mitigation meaures are discussed in Part V.

Wastewater Management

The Specific Plan document describes current efforts of the City to provided for long-term management of wastewater generated by the Project and by other urbanization anticipated under the Lathrop General Plan. The discussion covers the City's sewer system master plan, estimated rates of wastewater generation and peak flows, design assumptions, preliminary system design and a commitment to wastewater reclamation and reuse. [see SP, pp 66-72]

Because the approach to wastewater management for West Lathrop is embodied in the approach being examined for all of Lathrop's current and future urbanization, the reader is directed to the discusssion of this topic in Part Vfor a better understanding of how wastewater management proposals for West Lathrop fit and integrate with the larger perspective required.

Drainage and Flood Control

Significance Criteria:

See discussion under Drainage and Flood Control in Part V.

Impacts:

[B] 1. Within all areas covered by the Specific Plan, surface water drainage from streets and other paved surfaces will contain petroleum distillates, grease and chemicals that can degrade the quality of receiving waters of the San Joaquin River and its tributaries. These constituents of surface water drainage are picked up from paved surfaces that carry auto and truck traffic, from excessive use of water from landscape irrigation, and from outdoor washing of vehicles and building surfaces. Adverse impacts on fish and wildlife and on downstream users would occur. [**significant**]

[S] 2. Flooding of the Stewart Tract that occurs during periods of heavy rainfall, or that could occur from a break in the levee system, has the potential for serious damage to property and personal injury. [**potentially significant**]

Project Mitigation:

[B] 1. The Specific Plan calls for the capability to remove hydrocarbon and other contaminants from surface drainage water prior to disposal to off-site water courses. A capability for on-going monitoring of the system(s) is proposed as part of the mitigation monitoring program summarized in Part I of this document and described in a separate document to be approved by the City Council. [see SP, p74] This topic is also discussed further in Part V of this EIR.

[S] 2. a. The potential for flooding of the Stewart Tract requires that levees be reconstructed and strengthened to standards of the Corps of Engineers as has already been accomplished for the levee along the east bank of the San Joaquin River. Affected levees will be those along Old River, the west bank of the San Joaquin River and Paradise Cut, which eventually may require reconstruction

around the entire Tract to carry out land use proposals of the General Plan and Specific Plan. (see measure 3, below). [see SP, p 32, Objective 8A]

[S] 2. b. In connection with and in addition to Measure 2a, above, a variety of approaches to flood-proofing are covered by the Specific Plan to close the gap to floodwater that otherwise would exist between Old River and Paradise Cut west of the Southern Pacific Railroad. Ways have been devised during preparation of the Specific Plan to assure adequate flood-proofing as phased development occurs. They include elevation of roadways, the sites of major activities, and open space corridors, and the depression of recreation, lake and other open space areas to detain floodwaters during an emergency. [see SP, pp 72-79]

[S] 2. c. Other mitigation required to prevent loss of life and property during a natural or man-made disaster are described under the topics of Health and Safety in part IV of this document and in Part V..

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate impacts associated with drainage and flood control by assuring that contaminated stormwater will be removed before discharge to surrounding water courses, and that flood protection will be provided for at least a 100 year intensity event. Additional mitigation measures are discussed in Part V.

Lake Management

The Specific Plan describes generally the integration of the proposed system of lakes for Stewart Tract as an integral part of the stormwater drainage system for central and eastern portions of Stewart Tract. [see SP, pp 76-77] Standards of width, depth and fluctuation of surface levels for lakes and interconnecting canals are prescribed. However, the more specific aspects of lake management which have significance for avoiding adverse environmental effects are presented and discussed in Part V of this EIR.

BIOLOGICAL RESOURCES

Significance Criteria:

See discussion under Wildlife and Fisheries sections contained in Part V.

Fish and Wildlife

Impacts:

Information provided in Part III of this document indicates that both nesting and foraging areas of Swainson's Hawk habitat will be adversely affected by urban development proposed by the Specific Plan. Considerable acreage of foraging habitat will be converted to urban use, and nests will be encroached upon by urban use. Information on the existing fishery of the San Joaquin River and its tributaries in the immediate vicinity of the planning area also indicates a potential for adverse impact. Extensive field studies conducted during formulation of the Specific Plan indicates the absence of any other rare, endangered or threatened species of wildlife.

[B] 1. The principal impact on the Swainson's Hawk will be the loss of foraging and nesting habitat, and the potential abandonment of local nesting territories. **[significant]**

Project Mitigation:

[B] 1. Policies of the Lathrop General Plan and EIR, as well as a Stipulated Judgement on the General Plan/General Plan EIR, require that the City either adopt its own Habitat Management Plan Stockton. Other local jurisdictions are also in need of participation with Stockton, or other locally sponsored HMP (e.g., the San Joaquin County COG), including Lodi, Tracy and the County of San Joaquin. A multi-jurisdictional approach can allow for reasonable urban expansion while retaining the Swainson's hawk populations in perpetuity. Because Stockton's program has been postponed indefinitely and the COG program may not be in place for several years, the City is proceeding on its own, along with Stewart Tract and Mossdale Village proponents of the Specific Plan, to assure appropriate mitigation of Swainson's hawk impacts for the first phase of development for a period of approximately five years extending through the year 2000. This program involves identifying and assuring the availability of suitable foraging habitat into perpetuity, and to create new nesting habitat along watercourses in areas like Paradise Cut. [see SP, pp 129-132, and the Technical Appendix describing details of the Habitat Management Plan]

Impacts:

[B] 2. If suitable nesting territories are not available to support relocation in relation to other Swainson's hawk territories, then there could result a net loss in the hawk population which would further exacerbate the condition of the hawk as a threatened species. [**significant**]

[B] 3. The fishery of the San Joaquin River and its tributaries is threatened by the potential for contamination by urban runoff and up-stream agricultural drainage. [**significant**]

Project Mitigation: [see SP, pp 129-132, and the Technical Appendix describing details of the Habitat Management Plan]

[B] 2. a. Areas of foraging habitat replacement are being sought within the South Delta subpopulation of the Swainson's hawk which is bounded by lower Robert's Island, the City of Tracy, the San Joaquin River and Old River. Whether by land purchase or conservation easement, the quality of the habitat is being considered to include suitable nesting habitat as well as foraging habitat such as alfalfa.

[B] 2. b. Based on additional biological surveys conducted early in the Specific Plan formulation process, policies and proposals of the Specific Plan call for habitat retention and habitat enhancement to deal with known sensitive species of plants and animals.

[S] 2. c. Paradise Cut has been designated as the major area where habitat retention and enhancement is to be accomplished, to achieve the following:

- The integration of waterway habitat areas as part of the areawide system of open space.
- The preservation of all stands of vegetation along waterways which provide habitat, and achieving a standard of "no net loss of wetland acreage".
- The careful introduction of public and private recreation activities within habitat areas which will not disturb natural conditions either through intensity of operations, high levels of noise generation, or scarring of the landscape through development activity.
- The retention of hedgerows and other habitat areas within intensively farmed acreage which are compatible with agricultural operations.

- The protection of fisheries by preventing discharge of contaminated surface waters to waterways, or the discharge of waters containing significant Bio Chemical Demand (BOD) which could reduce the dissolved oxygen content of downstream receiving waters.

[M] 2. d. To the extent that they can feasibly be applied to the smaller acreage of Mossdale Village, the same objectives of habitat retention and enhancement listed under 2.c., above also apply to Mossdale Village.

[B] 2. e. The designation of new areas, including Paradise Cut and perhaps off-site areas for habitat enhancement by the Specific Plan provides a significant trade-off to the general environmental impacts on biological resources associated with development under the Plan. The objective of habitat enhancement is to enhance habitat that has been degraded and to create new habitat where feasible. Enhanced and new habitat will be created along recreation and open space corridors within Stewart Tract and Mossdale Village, including the following:

- The improvement of natural habitat along waterways.
- The creation of new habitat within multi-purpose open space area designated for reuse of treated wastewater, surface water drainage for wildlife management and recreation and lagoons and lakes intended as water features of development.
- Provision of habitat within parks, parkways and golf courses.

[B] 3. Fisheries will be protected by reducing the amount of chemicals, petroleum distillates, pesticides and fertilizers contained in urban runoff through extraction, and by the design of waterway projects to protect fish populations. [see also previous discussion under topics of drainage and flood control]

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate impacts on fish and wildlife. These mitigation measures will both protect and enhance fish and wildlife resources of the planning area in accordance with plans and proposals which, as they were being developed, have stood the tests of scrutiny and review by state and federal agencies having jurisdiction. This process has taken more than two years of extensive field survey, analysis, report preparation and discussion to complete. Additional mitigation measures are discussed in Part V.

Riparian Vegetation, Wetlands and Watercourses

Significance Criteria:

See discussion under Vegetation and Wetlands sections contained in Part V.

Impacts:

[B] 1. There is a potential for damage to existing riparian vegetation, wetlands and watercourses due to urban development. **[potentially significant]**

Project Mitigation:

[B] 1.a. General Plan policies call for the protection of all existing riparian vegetation, wetlands and watercourses. Policies and proposals listed under Item 2., above, provide for the protection and enhancement of vegetation.

[S] 1.b. The Project applicant must mitigate the impacts of development that could destroy or have the potential for destroying wetlands by providing a comparable or superior quantity and quality of habitat to compensate for the loss.

[B] 1.c. The on-going mitigation monitoring program provides for the monitoring of habitat restoration and enhancement projects to assure the prospects for project success.

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate impacts on riparian vegetation, wetlands and watercourses by ensuring that such vegetation will be protected where feasible, and requiring impacts on wetlands to be compensated by providing a comparable or superior quantity and quality of habitat. Additional mitigation measures are discussed in Part V.

NOISE

Significance Criteria:

See discussion under Noise contained in Part V.

Impacts:

[M] 1. Noise effects of development proposals for Mossdale Village on Mossdale Village do not pose problems for land use within the Village or in other parts of the community. **[less than significant]** The principal concern is for the effects of freeway-generated noise on residential development within Mossdale Village. Noise levels from freeway traffic are high, and are expected to continue as freeway traffic increases. **[potentially significant]**

[M] 2. The noise effects of commercial recreation development proposals for Stewart Tract on Mossdale Village have the potential for adverse impacts on the Mossdale Village residential environment close to the San Joaquin River. **[potentially significant]**

[S] 3. The noise effects of commercial recreation development proposals for Stewart Tract have the potential for adverse impacts on recreation residential and lodging areas proposed for Stewart Tract. **[potentially significant]**

Project Mitigation:

[M] 1. Policies of the Specific Plan for Mossdale Village require the placement of service commercial structures along Manthey Road, between I-5 and proposed residential areas of the Village so as to block the transmission of freeway noise to residential areas. [see SP, p33, Objective 9B]

[B] 2. Land use proposals for Stewart Tract provide a wide spatial buffer of golf course development and lodging areas to adequately attenuate noise effects of theme park and related activities. [see SP, p. 33, Objective 9A]

[S] 3. Residential areas of Stewart Tract will be kept far enough away from theme park activities as to attenuate sound by distance. Aesthetically designed walls and landscaping will further attenuate sound emanating from commercial recreation activities surrounding the theme parks. [see SP, p.33, Objective 9A]

[S] **Effect of Project Mitigation:**

The above Project mitigation measures will partially mitigate Project impacts associated with Noise by arranging the land uses to block or at least reduce the transmission of freeway noise to residential areas. Additional mitigation measures are discussed in Part V.

LIGHT AND GLARE

Significance Criteria:

Under CEQA Guidelines [Appendix G, (b)], a project would have a significant effect on the environment it would have a substantial, demonstrable negative aesthetic effect. For purposes of this section, impacts on light and glare are considered to be significant if the Project would increase substantially the ambient light levels for adjoining areas.

Impacts:

[S] 1. Views of the night sky will be diminished and perhaps totally obscured by the glare from night-time commercial operations. **[significant]**

[S] 2. A related impact would be the adverse effects of neon and area lighting of Stewart Tract commercial recreation centers on residential development within Stewart Tract and directly east of the San Joaquin River within Mossdale Village. **[potentially significant]**

[M] 3. A potential exists for adverse effects of lights from vehicle traffic on residential areas adjacent to Gold Valley Parkway and Gold Rush Boulevard through Mossdale Village. **[potentially significant]**

Project Mitigation:

[S] 1. The key aspect of reducing the effects of light and glare in Mossdale Village from large-scale commercial operations on Stewart Tract is the buffer zone provided between the major theme park and related commercial areas and the San Joaquin River. However, full mitigation of this impact will not be possible.

[S] 2. Mitigation of direct off-site glare is to be achieved by the width of open space corridors along the river and westerly of recreation commercial centers on Stewart Tract, and by hooding and directing of exterior commercial lighting away from residential areas. Special attention will be given to the hooding and/or direction of lighting mounted high on building walls, poles, roofs, equipment and other facilities. [see SP, p91, 1st para.]

[M] 3. The potential for glare from vehicle traffic on residential areas will be mitigated by the construction of aesthetically designed walls and installation of landscaping along the perimeter of expressways in order to screen views of traffic from residential areas. [see SP, p88, 1st para.]

Effect of Project Mitigation:

The above Project mitigation measures will mitigate Project impacts associated with light and glare to the maximum extent feasible. All impacts will be reduced to a level of less than significant, except for the incremental increase in the amount of long-term sky glare as development within the entire community, and especially on Stewart Tract, occurs, which will remain an unavoidable significant impact.

PUBLIC, MUNICIPAL UTILITY AND ENERGY SERVICES

Significance Criteria:

See discussion under Public, Municipal Utility and Energy Services contained in Part V.

Impacts:

[S] 1. Commercial operations on the Stewart Tract will generate very large daily tonnages of solid wastes requiring recycling and/or disposal to appropriate waste disposal facilities. **[significant]** Failure to adequately manage such operational wastes could cause adverse visual and health effects if waste material was allowed to accumulate or be strewn over areas within and adjacent to Stewart Tract. **[potentially significant]**

[S] 2. The amount of electrical and natural gas energy required for Stewart Tract operations will be very substantial. Residential demands alone, including lodging, could be in the order of 58 million kW (kilowatts), at an average consumption of 5,800 kW per housing unit (or housing unit equivalent for lodging facilities). Requirements for commercial recreation operations could equal demands for residential use. **[significant]**

Project Mitigation:

[B] 1.a. General Plan and Specific Plan policies and proposals require the provision of all public utility, municipal utility and energy services needed to serve permanent and transient housing occupancy, and the daily transient population of visitors to Stewart Tract. This includes streets, public schools, parks and recreation facilities and open space corridors, civic and cultural facilities, fire and police services, emergency services, and water supply, sewerage, drainage/flood control, and solid waste management systems.

[B] 1.b Stewart Tract operations will include daily pick-up (in compliance with the City's Integrated Solid Waste Management Plan) of any waste products strewn over commercial grounds and parking areas by visitors; wastes from commercial and residential operations will be separated for recycling of paper, cans and plastics, and glass, with storage at on-site transfer stations for later hauling by re-use operators or County/City approved places of disposal; recycling of solid wastes from residential areas will be conducted on a scheduled basis. [see SP, p 79, 2nd-last para.]

[S] 2. Electrical and natural gas energy requirements and service needs are described under the Energy Service section of Part V. The project sponsor for Stewart Tract has collaborated with the Pacific Gas & Electric Company in determining specialized needs and requirements for power delivery throughout Stewart Tract.

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate impacts associated with provision of public, municipal utility and energy services. Additional mitigation measures are discussed in Part 5.

SAFETY AND HEALTH

Impacts on safety and health are described under related topics of geologic hazards, flood control, and noise topics of Part IV, augmented by discussion of emergency response and evacuation in Part V.

URBAN DESIGN/VISUAL QUALITY

Significance Criteria:

Evaluation of aesthetic/visual impacts is guided by CEQA Guidelines and public agency plans and policies. CEQA Guidelines [Appendix G] state that an adverse impact occurs if a project will "have a substantial, demonstrable negative aesthetic effect." The Environmental Checklist Form [Guidelines Appendix I] specified that the issue is whther theb proposal would result in the "creatrion of an aesthetically offsensive sight open to public view" or "the obstruction of any scenic vista or view open to the public". These standards are narrow; few projects that are otherwise acceptable to most communities will be demonstrably negative in aesthetic effect, or create an aesthetically offensive sight open to public view.

Impacts:

[B] 1. The character of urban development under the Specific Plan will enhance the visual quality of the City, and of the visual experience of those residing or visiting the planning area. This will be achieved by the land use and circulation proposals of the Specific Plan, and by the design, development and maintenance standards included as part of the Plan. [see SP, p79] [**significant positive**]

[B] 2. The urbanization of lands within the project area will gradually eliminate views of agricultural lands beyond developing areas as currently seen from highways and rural roads. [**less than significant**]

[B] 3. The urbanization of lands will gradually block or partially obscure the far view scenic backdrop of Mt. Diablo and the Coast Range, except as viewed from elevated levees, elevated building sites and expanses of open space such as golf courses and open space corridors. [**less than significant**]

Project Mitigation:

[B] 1. The principal mechanism for reducing any adverse visual impacts of the Project will be the implementation of City design standards, as described in the Specific Plan, Sections VI and VII. The Urban Design Concept required b y the Specific Plan for Mossdale Village and Stewart Tract will refine the Project's site layout, building plans, landscaping, building design and handling of specific site and Project features to reduce the potential for adverse visual impacts of the Project. [see SP, pp 143,145]

[B] 2. The loss of limited existing agricultural views will be replaced by an urban landscape that will contribute significantly to the aesthetic qualities of the area. Given the continued preservation of agricultural lands on nearby properties, and the containment of urban development within an

existing levee system, this trade-off does not constitute an irreparable loss of visual quality but rather a change in its character.

[B] 3. Views of the mountain backdrop to the west will be framed under different conditions rather than lost to the occupant or visitor. The orientation of streets and open space corridors, and the location of parks and major outdoor recreation areas (e.g., golf courses), will provide better opportunities to enjoy the scenic backdrop than is now afforded only from roads and highways, moving at required speeds, or the tops of levees which are not easily accessible under existing conditions. [see SP, p79]

Effect of Project Mitigation:

The above described visual impacts of the Project are less than significant or will be mitigated to a less than significant level by the above Project mitigation measures. These measures ensure that any adverse visual impacts will be eliminated or reduced to an acceptable level by implementation of City design standards, as described in Specific Plan Section VI and VII. The Urban Design Concept required by the Specific Plan for Mossdale Village and Stewart Tract will refine the Project's site design, architectural and landscape features to reduce adverse visual impacts of the Project.

ARCHAEOLOGICAL AND CULTURAL RESOURCES

Extensive literature search and field investigation of the entire planning area was conducted by competent professionals during formulation of the Specific Plan to identify actual or potential finds of significance that require special mitigation under requirements of CEQA. The discussion of impacts and mitigation which follow are abstracted from the report submitted in January, 1994, so that sensitive information is not disclosed.[3] Three archaeological sites and six isolated finds were recorded, along with built resources consisting of farm outbuildings, equipment and farm residences. The reader is directed to Part III of this EIR for a general description of finds having significance to the purposes of this EIR.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (j)], a project would have a significant effect on the environment if the project would disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site, except as part of a scientific study.

Impacts:

[B] 1. The three archaeological sites meet various criteria of significance for preservation under federal and state law. Failure to protect these resources from loss or damage during development and occupation of the affected areas of Mossdale Village and Stewart Tract would be irreparable and contrary to federal and state law. **[significant]**

[B] 2. The project area lays in a zone of thick Holocene alluvial deposition, and thus has some potential for buried archaeological deposits which might be disturbed by subsurface construction activities. Because of changes in elevations over the centuries, there is no way to predict where such deposits may be found, if at all. **[potentially significant]**

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[3] **A Cultural Resource Survey of the Stewart Tract and Mossdale Areas of the West Lathrop Specific Plan, San Joaquin County, California,** Far Western Anthropological Research Group, Inc., Davis, CA, January, 1994.

[B] 3. Isolated finds consist of historic farm equipment at one location and pre-historic flakes, a projectile point and a flake tool at others. Failure to protect these resources from loss would not violate federal and state law, but could result in their loss as representative fragments of prehistoric occupancy. **[potentially significant]**

[B] 4. Built resources identified, such as silos, barns and sheds, could also be lost or damaged if not protected at their sites or removed to other appropriate sites. **[potentially significant]**

Project Mitigation: [see SP, p50]

[B] 1. The project design team has taken careful note of the location of the three archaeological sites in developing land use proposals for Mossdale Village and Stewart Tract. These areas will be protected into perpetuity by their inclusion within areas of permanent open space. Two of the archaeological sites meet significance criteria for such protection. The third site, although problematical with respect to meeting significance criteria, will similarly be protected.

[B] 2. Mitigation against the potential loss of unknown archeological and cultural resources of significance at subsurface locations shall be avoided through close monitoring by the City of Lathrop of construction activities. The City will instruct developers and construction foremen of the potential for damaging prehistoric sites or artifacts, and provide written instructions as to the importance and necessity of halting all excavation work until the significance of the finds can be evaluated by competent archaeological and Native American specialists. Procedures to be followed will be those set forth by CEQA Guidelines, Supplementary Document J.

[B] 3. The project sponsor for Stewart Tract will protect and display all isolated finds as representative of the prehistory of the project site, in keeping with the purposes of the historic Gold Rush City theme park proposed. Isolated finds located within Mossdale Village will be preserved as conditions of development approval by the City.

[B] 4. Built resources within the Stewart Tract will be preserved and displayed at their existing or other appropriate locations as part of the historic character of theme park development. Built resources within Mossdale Village will be preserved under conditions of development approval by the City.

Effect of Project Mitigation:

The above described impacts of the Project on archaeological and cultural resources will be reduced by the above Project mitigation measures to a less than significant level. The Project mitigation measures will ensure that the archaeological sites within Mossdale Village and Stewart Tract will be protected into perpetuity by their inclusion within areas of open space. Any loss of unknown archaeological and cultural resoucres of significance within the Project site will be avoided through close monitoring by the City of construction activities as described above.

IMPACTS ON NEIGHBORING CITIES AND THE COUNTY OF SAN JOAQUIN

This topic is discussed at the end of Part V of this EIR.

TRANSPORTATION, CIRCULATION AND TRAFFIC

Significance Criteria:

Significance criteria for each of the subsections listed below are contained in Part V.

Freeways

Impacts:

Lathrop's General Plan EIR prepared in 1991 included assumptions about the extent of freeway system improvements that could be expected during the next 20 years. More recently, however, Caltrans has informed the City that previously anticipated improvements will not be forthcoming during the next 20 year planning period. They include: 1) additional lanes will not be added to I-5 north of SR 120; 2) I-205 west of I-5 will be widened to only six lanes (three in each direction) rather than to eight lanes; 3) the I-5/I-205 merge will not be widened to six lanes in each direction from the existing five lanes; and 4) SR 120 east of I-5 will not be widened from two lanes to three in each direction. Without these improvements, previously anticipated impacts of development under the West Lathrop Specific Plan become greater as noted under Items 1.- 5., below.

[B] 1. Interstate 5 north of SR 120 will operate above capacity during peak hours. While inadequate capacity will be due to increases in regional as well as local traffic, the extent of local mitigation required becomes more significant than before. **[significant]**

Project Mitigation:

1. a. The General Plan and Specific Plan call for the construction of Golden Valley Parkway from Gold Rush Boulevard southerly and westerly to Stewart Tract, parallel to I-5 and the I-5/I-205/S.R.120 merge.[4] Initial construction would be as a 4-lane divided facility. In addition, Gold Rush Boulevard would be extended as the main entrance to Stewart Tract from the north, extending southwest from the Louise Avenue interchange. If required, expansion of Golden Valley Parkway to 6-lanes would occur in advance of need. [see SP, p 53, 2nd para.]

[B] 1. b. Golden Valley Parkway will be extended north of Louise Avenue to Lathrop Road. as traffic warrants indicate through the on-going traffic monitoring program. It is to be understood that Golden Valley Parkway has been planned as a parallel facility to I-5 in keeping with General Plan policy to protect "...the through traffic functions of Interstate and State Route freeways serving the Lathrop area by planning expressway and arterial street alignments which will avoid the need or desire to utilize freeway sections for short, local area interval trips as if they were elements of the local expressway/arterial system." [see SP, p53, 3rd para.] Costs of this extension would be shared by adjacent development served as well as by West Lathrop development as proposed.

[B] 1. c. The City and Stewart Tract developers propose programs to significantly increase local and regional transit, and its ridership, and thereby reduce dependence on auto use of the Stewart Tract and regional roadway system. This program will also include a very large-scale park and ride facility, BART Express Bus and a rail transit parking facility on Stewart Tract, to serve the interregional needs of the San Joaquin Valley and lower Sacramento Valley commuters to central and southern reaches of the San Francisco Bay Area. [see SP, p56, Transit section]

[B] 1. d . The City will participate on a "fair-share" basis with Caltrans, the County, the City of Stockton and new development served to extend Golden Valley Parkway north to the City of Stockton as a parallel facility to I-5 so as to further the purposes of protecting through traffic functions of the

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[4] Golden Valley Parkway was previously named Stanford Boulevard in the General Plan.

freeway as described under Mitigation 1.b., above. The timing of this improvement will be determined by traffic monitoring and the availability of funding.. Preservation of the eventual right-of-way to Stockton is required at an early date. [see SP, p53, 3rd para.]

Impacts:

[B] 2. I-205 west of I-5 will have a peak direction demand over capacity during peak commute hours due to local and regional traffic increase, requiring greater commitment to mitigation through managing traffic to and from Stewart Tract and Mossdale Village. **[significant]**

[B] 3. The I-5/I-205 merge will have a peak direction demand over capacity during peak commute hours due to local and regional traffic increase, requiring greater commitment to managing traffic to and from Stewart Tract and Mossdale Village. **[significant]**

[B] 4. The SR 120 freeway east of I-5 to Yosemite Avenue will have a peak directional demand over capacity during peak commute hours due to local and regional traffic increase, requiring greater commitment to mitigation through managing traffic to and from Stewart Tract and Mossdale Village. **[significant]**

[S] 5. The existing Mossdale/Manthey Road interchange along the I-5/I-205/S.R. 120 merge may require restricted use because of State and Federal standards of operation and access at and near a freeway-to-freeway interchange. **[significant]**

Project Mitigation:

[B] 2. a. Golden Valley Parkway will be extended south and then west of Stewart Tract as an expressway parallel to I-205, with a new interchange connection to I-205 at Paradise Road. This facility will be available when needed (as determined by traffic monitoring) to ease traffic demands upon the Louise Avenue/I-5 interchange. . [see SP, p53, 4th para.]

[S] 2. b. The City will participate on a "fair-share" basis with Caltrans, the County and the City of Tracy to extend Golden Valley Parkway west to the Paradise Road/I-205 interchange. Further discussion of this topic is provided in Part V of this EIR.

[S] 3. Off-sets to peak hour traffic impacts will result from off-peak hour and weekend travel to Stewart Tract.

[S] 4. See further discussion in Part V of this EIR.

5. See further discussion in Part V and Part VI of this EIR.

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate Project impacts on the freeway system. These mitigation measures will assure acceptable levels of service within the West Lathrop planning area and on the freeway system as generated by the Project, exclusive of impacts generated by other projects elsewhere within and outside of the region which will contribute to regional traffic demand in future years. To the extent that cumulative traffic impacts on the freeway system may not be reduced to acceptable levels, statements of overriding considerations will be required prior to EIR certification. Additional mitigation measures are discussed in Part V.

Expressways and Interchanges (2025 Horizon Year)

Impacts:

[B] 1. The existing Roth Road/I-5 and Lathrop Road/I-5 interchanges will be adversely impacted due to unacceptable levels of service at the ramp intersections without significant ramp and surface street improvements. **[significant]**

[B] 2. The Louise Avenue/I-5 and Yosemite Avenue/SR 120 interchanges will operate above capacity during peak hours without significant ramp and surface street improvements. **[significant]**

[B] 3. Golden Valley Parkway will function acceptably as a 4-lane facility north of Gold Rush Blvd. to Lathrop Road, and as a 4-6-lane facility south of Gold Rush Blvd. to Stewart Tract. **[less than significant]**

[B] 4. A 4-6 lane Gold Rush Blvd. from I-5 west to Stewart Tract will be operating at acceptable levels. **[less than significant]**

[B] 5. Conventional approaches to the design of the street system will discourage later efforts to provide for various modes of transit required within the planning area covered by the Specific Plan. **[significant]**

Project Mitigation:

[B] 1. The Specific Plan calls for ramp improvements at the I-5/Louise Avenue/Gold Rush Boulevard, and I-5/Mossdale Road interchanges, as well as a new I-205/Paradise Road interchange by 2017. [see SP, pp 54-55]

[B] 2. The General Plan and Specific Plan call for improvements to the Louise Avenue interchange at such time as either Gold Rush Blvd. or Golden Valley Parkway require extension to Stewart Tract. However, ramp improvements will be required in any event as specified by a recent PSR (Project Study Report) prepared for the interchange. [see SP, p 55]

[B] 3. Further mitigation is discussed in Part V.

[B] 4. Further mitigation is discussed in Part V.

[B] 5. In keeping with policies of the General Plan, the design of expressway and arterial streets provides for bus stops, with right-of-way for the inclusion of light rail or other off-street transit mode provided for expressways. Local and regional transit is to be a commitment for Mossdale Village as soon as sufficient residential development occurs to establish the feasibility of a minimum level of patronage for continuous City transit routes. Both local and regional transit is to be a commitment for Stewart Tract beginning with the opening of the first theme park and recreation residential living environment. This commitment to transit is described further under the subjects of Rail, Air, Transit and Air Quality.

Many of the above mitigation measures will require a "fair share" approach to financing among the affected cities, the County and Caltrans.

Effect of Project Mitigation:

The above Project impacts on expressways and freeway interchanges are less than significant or will be partially mitigated by the above Project mitigation measures. Additional mitigation measures are discussed in Part V.

Arterials and Collectors

Impacts:

[B] 1. Access to Stewart Tract via Manthey Road can be provided during Phase 1 development, to accommodate project construction traffic. **[less than significant]** However, Manthey Road will not function acceptably if depended on for access to a theme park or other large traffic generator prior to the construction of either Golden Valley Parkway or Gold Rush Blvd. for access to Stewart Tract. **[significant]** In addition, the interim use of Manthey Road during first phase Project construction on Stewart Tract may damage the pavement surface to where remedial improvements and traffic control will be required. **[potentially significant]**

[B] 2. All Arterial and Collector streets are planned for the levels of traffic to be generated by the areas they will serve. This includes intersections where signalization is proposed by the Specific Plan. **[less than significant]**

[B] 3. Arterial and Collector streets will have substantial expanses of paved surfacing which lacks redeeming visual qualities. **[potentially significant]**

Project Mitigation: [see SP, pp 52-54]

[B] 1.a. Manthey Road will be replaced by Golden Valley Parkway and Gold Rush Blvd. extensions to Stewart Tract prior to when Manthey may no longer function at an acceptable level.

1.b. Interim roadway maintenance during Stewart Tract construction will be provided to Manthey Road as a Project cost if roadway damage occurs as the result of truck traffic generated by construction activities.

[B] 2. No further mitigation is required.

[B] 3. Arterial and some Collector street sections will include boulevard landscape treatment and meandering sidewalks to soften the visual effects of paved surfacing. No further mitigation is required.

[B] 4. Traffic signals will be timed to manage the levels of traffic anticipated at and between signalized intersections. No further mitigation is required.

Effect of Project Mitigation:

The above Project impacts on arterial and collector streets are less than significant or will be partially mitigated by the above Project mitigation measures. These mitigation measures will provide for acceptable levels of service along all segments of the local street system.

Highway Transportation in the Perspective of Rail and Air Transportation and Transit

Highway Transportation in the Perspective of Rail and Air Transportation and Transit

Impacts:

[B] 1. Development proposed under the West Lathrop Specific Plan and the actions of Caltrans to drop its previous proposals for freeway lane improvements poses significant potential for creating traffic problems on the freeway system and on the local arterial street and county road systems serving the south-central part of San Joaquin County as well as other parts of Lathrop. The most significant impacts would occur if vehicle traffic were to increase to excessive levels before affected street and freeway sections were improved to match the anticipated traffic impact. **[significant]** Dependence on the auto and all but minor use of transit modes would further exacerbate already existing and emerging problems of freeway congestion and air pollution. **[significant]**

[S] 2. Significant numbers of Stewart Tract visitors are expected to arrive in the area by commercial airlines, utilizing Stockton Metropolitan Airport, and to a lesser extent major commercial airports at San Jose, Oakland, San Francisco and Sacramento. **[potentially significant]** However, most visitors will arrive by auto via the Interstate and State Highway System from other parts of the region, the State and the Nation. **[significant]**

Project Mitigation: [see SP, pp 51-59]

1. The schedule of improvements planned in connection with implementation of the Specific Plan calls for all necessary street improvements to be in place at or before time of need. In addition, a significant commitment to transit is planned for introduction from the beginning of Phase 1 operations. [see discussion under Items 2., and 4., below] [see SP pp 51-59]

[B] 2. The majority of visitors arriving to Stewart Tract by commercial airlines will be bused to Stewart Tract from Stockton Airport. As arrivals increase from other regions of the State, the Nation and from international points of origin, buses will be augmented by rail transportation, if rail transportation is provided to Stewart Tract. The percentage of visitors arriving by air and using rental cars is expected to be small compared to total visitation. [see SP, p 58]

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate Project impacts associated with highway transportation. Additional mitigation measures are discussed in Part V.

Impacts:

[B] 3. With or without development under the Specific Plan, there is every possibility that traffic congestion on the freeway system will extend the AM and PM peak hours to multi-hour periods extending from very early morning to mid-morning, and from early afternoon to mid-evening. **[significant]** The testing of traffic impacts under various access scenarios for Stewart Tract indicates that certain high generating traffic uses have the potential for creating high levels of traffic congestion at various times throughout the work week and during weekends. **[significant]**

Project Mitigation:

[B] 3. a. A large-scale park and ride facility is planned in proximity to the Mossdale interchange along the I-5/I-205 merge that has the potential for removing upwards of 2,500 vehicles per day from the I-205 corridor leading to and from employment centers in the San Francisco Bay Area. This facility is proposed as a permanent use. This facility will immediately improve regional traffic capacity along I-205, and more than off-set traffic impacts of out-bound commuters from Mossdale Village or of in-bound commuters to Stewart Tract along this corridor. It will also buy time in which to perfect and enhance the capacity of train, bus and any other transit modes which currently are being proposed for the region and which will be supplemented by project proposals to reduce freeway traffic demands of the project. [see SP, p58, 1st para.]

[S] 3. b. A multi-modal transit center is proposed in close proximity to the park and ride facility along the Southern Pacific railroad right-of-way. [see SP, p58, 1st para.]

[S] 3. c. The generally off-peak hour and weekend operations of visitor-serving uses on Stewart Tract will have the effect of minimizing impacts on freeway traffic; the high employment produced on Stewart Tract will create favorable conditions for achieving good balance in the relationship of jobs and housing in the local area, resulting in no additional significant impacts to commute activity on Interstate 580 over the Altamont Pass..

[S] 4. The long-term mitigation described under Item 3.a., above, will have a potentially significant positive impact. Remote parking lots north along the I-5/Southern Pacific RR corridor and west along the I-205/Southern Pacific and Union Pacific railroad corridors will permit access to and from Stewart Tract by trains, especially during major events. The initial commitment to non-auto modes is planned to produce the following percentages of attendance via various transit modes, by the year 2005:

Mode	% of Attendance
Car	68%
Bus	15%
Train	10%
Air	5%
Water	2%

As transit operations are expanded in relation to Stewart Tract attendance, train travel will increase to about 15%. Overall, and based on existing technology, the commitment by Stewart Tract developers to transit by 2010 is expected to be 25%, with 30% occurring by the year 2015. Transit is to be considered as much a part of the proposal as any other type of infrastructure needed, such as water supply and liquid waste treatment and disposal. As such, the various transit modes are to be available from the beginning, with service expansion as needed. This approach constitutes a major departure in planning to meet the transportation requirements of a large-scale and traffic-intensive project. [see SP, pp 51-59]

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate Project impacts associated with traffic on the freeway system. Additional mitigation measures are discussed in Part V.

Impacts:

[M] 4. As Mossdale Village development and other planned community expansion east of the San Joaquin River occurs, there is a danger that short-trips will add considerable traffic to I-5 within the City limits. **[significant]**

Project Mitigation:

[S] 4. The intended commitment to regional transit will be matched by various modes of on-site transit for the convenience of visitors to Stewart Tract, including boats, shuttles, light rail, and overhead vehicles. Transit vehicles will convey visitors to and from the theme parks and the multi-modal transportation station and parking facilities planned in close proximity to rail and boulevard expressway access. As Stewart Tract develops westerly, the primary ring road street system also will serve as transit corridor allowing visitors to move within and around the entire Tract without having to use automobiles. A high intensity transit corridor or "spine" will connect major activity centers with major concentrations of visitor motel, hotel and housing facilities. This commitment to high-intensity on-site transit will be matched by low intensity vehicles such as golf carts for movement among housing and outdoor recreation areas and facilities. The objective will be to minimize (if not totally eliminate) dependence on the auto for on-site movement of people. [see SP, p56, Transit section, 1st para.] Implementation of the City's Bicycle Master Plan may eventually result in bicycle traffic accounting for as much as 1% or more of total on-site traffic.

[M] 5. Local transit is also to be provided within Mossdale Village, connecting the Village with other activity centers of the community, including, shopping, schools and major employers. Initially, transit service will be provided by buses. However, the Golden Valley Parkway corridor will include sufficient land to accommodate a rail transit right-of-way which eventually would provide connecting service with the communities of Stockton, Manteca and Tracy. [see SP, p56, Transit section, 2nd para.]

Bicycle and pedestrian ways separated from the auto will connect major activity centers within all of Mossdale Village via a system of open space corridors that will be extended as Lathrop expands north of Mossdale Village under policies of the General Plan. Bike riding and walking separate from street corridors along off-street trails is expected to become a significant means of people movement within the town among all age groups. [see SP, p56, Trails section]

The above Project mitigation measures will partially mitigate Project impacts associated with traffic on the freeway system. Notwithstanding the design of the street system and interchange facilities as mitigation of potential impacts, the commitment of the Project to transit modes for access to and within the site offers exceptional promise for long-term mitigation of on-site and off-site traffic congestion. Additional mitigation measures are discussed in Part V.

AIR QUALITY

Significance Criteria:

See discussion under Air Quality contained in Part V.

Impacts:

[B] 1. The project has the potential of contributing significant mobile source and stationary source emissions to the atmosphere of the San Joaquin Valley Air Basin, exacerbating already serious problems of air pollution due to non-attainment of federal and air quality standards for ozone, carbon monoxide, oxides of nitrogen and fine particulate matter. These pollutants take their toll on human health by aggravating chronic respiratory conditions, on agricultural production by reducing production and quality per acre, and on the visual quality of the Valley by obscuring views of the natural and man-made environment. **[significant]**

[B] 2. Emissions of particulate (PM_{10}), Carbon Monoxide (CO), and the so-called reactive organics (ROG) can prove to be especially difficult to control during long periods as well as intermittent periods of project construction. Construction dust along freeways, during periods of high wind, can obscure vision and create traffic hazards. **[significant]**

[B] **Project Mitigation:**

[B] 1. a. By testing the effects of various development designs and their circulation systems on traffic during preparation of the Specific Plan, it has been possible to design and plan for freeway, expressway, interchange, arterial street, and air, bus and rail transit so as to minimize problems of traffic congestion associated with use of the automobile. By greatly reducing the potential for such congestion, the objective of emission reduction is served well. The design of the proposed on-site circulation system is adequate for the amount of traffic expected under five-year development phases. This approach is exemplary of transportation planning at its best, since it avoid problems before the fact of development rather than struggling to manage traffic after the effects of traffic congestion have set in. [see SP, pp 51-59]

[B] 1. b. The projects commitment to non-auto modes of transportation for moving people to and from the project area and moving people and goods within it will significantly reduce the potential for adverse air quality impacts associated with traffic congestion. Vehicles powered by electricity and clean burning fuels will be utilized. The extent of emissions reduction expected from both mobile and stationary sources is described in Part V of this document. [see SP, pp 51-59]

[B] 1. c. The reduction in freeway commute traffic due to park and ride, train and the availability of housing in close proximity to jobs is expected to have a significant positive overall impact on air quality.

[B] 2. a. The means of mitigating emissions associated with project construction are described in Part V of this document, since they involve a variety of temporary actions required during construction. As such, they are not then considered as "built-in" approaches to impact mitigation.

2. b. A significant reduction in particulates is expected from the gradual cessation of farming operations which disturb the soil.

[B] While it is not possible to fully mitigate all impacts on air quality, the full range of mitigation measures being proposed are described in Part V of this EIR..

Effect of Project Mitigation:

The above Project mitigation measures will partially mitigate Project impacts associated with air quality by emphasizing the use of non-auto modes of transportation and reducing the potential for traffic congestion on the Project site. Additional mitigation measures are discussed in Part V.

PART V

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

INTRODUCTION

Where the discussion of impacts and mitigation already provided under Part IV is deemed adequate (e.g., a particular impact is not significant or is mitigated to a level of less than significant by mitigation measures contained in Specific Plan proposals), the text in this Part V simply refers to the topic and page where the relevant Part IV discussion is provided. Where analysis is being provided in addition to or expanding upon the discussion in Part IV, it generally provides a finer-grained environmental assessment than that provided in Part IV, and/or addresses impacts that are not fully mitigated by Specific Plan proposals.. Wherever feasible, impacts are described under "worst-case" conditions. This is important since this EIR covers the indirect as well as direct effects of development which will occur under various phases and at full buildout under policies of the Lathrop General Plan and West Lathrop Specific Plan. For certain topics, such as traffic and air quality, worst-case analyses covers any eventuality in the final mix of land use proposed under the Specific Plan.

Design proposals of the Specific Plan which are described in Part II as "Interchangeable Alternatives" are discussed at the end of Part V. These alternatives are, in effect, counterpart substitutes for proposals of the Specific Plan shown on Figure II-2 (p II-5), and are not to be confused with the discussion of "project alternatives" provided in Part VI. These alternatives may, however, be adopted by the Lathrop City Council as part of the Specific Plan because they are covered by this EIR.

For ease of comparison, the format of this Part V is the same as that followed in Part IV. The topical discussion often applies both to Mossdale Village and Stewart Tract. Where it applies to only one area, it is preceded by a notation in brackets of either [M] for Mossdale or [S] for Stewart Tract. Where the discussion applies to both areas, it is preceded by [B]. The relative importance of an impact within the CEQA definition of "significant effect" is indicated by brackets and bolding (e.g., [**significant**]) under the discussions of impacts.

LAND RESOURCES

Compaction and Overcovering of the Soil

As set forth on pp IV-3 and -6 of Part IV, Project impacts associated with compaction and overcovering of the soil are fully mitigated by measures contained in the Specific Plan proposals. Further discussion is not required.

Agricultural Land Conversion

Impacts and mitigation measures related to the conversion of agricultural land and cumulative loss of agricultural value are covered in part on pp. IV-7 and -8 of Part IV. Impacts resulting from urban-agricultural conflicts are discussed below under "additional impacts". It is important to note that the phasing proposed for Mossdale Village will proceed from north to south, while the phasing proposed for Stewart Tract will proceed from east to west. These phasing programs (see phasing diagrams provided in Part II) are intended to avoid the "fracturing" of the agricultural land pattern and fragmentation of the urban pattern.

Significance Criteria for Determining Urban Agricultural Conflicts:

Under CEQA Guidelines [Appendix G, (y)], a project would have a significant effect on the environment if it would impair the agricultural activity of prime agricultural lands. In the case of farm lands on Stewart Tract and at Mossdale Village, they are "prime lands" because of their inclusion in the State Department of Conservation's "Important Farmland Mapping and Monitoring Program". While not all of these lands have been consistent producers of high value crops, their agricultural production has made an important contribution to the local economy. Urban-agricultural conflicts often occur at the interface between developed and developing urban lands and commercial agricultural operations. Such conflicts can be significant to the extent that they impair and increase the costs of agricultural operations, or pose a risk to individuals.

Additional Impacts:

[B] 1. It is reasonable to assume that conflicts will occur at the agricultural-urban interface as development occurs under the proposed plan of phasing. Conflicts affecting the farmland owners and operators concern trespass, vandalism, theft, major damage to equipment and liability in the event of harm to trespassers that may occur from normal farming operations or from unauthorized use of farm equipment. Conflicts affecting residential neighbors concern spray drift of pesticides and herbicides, noise from farm equipment, dust from farm operations and wind-borne odors. [**potentially significant**]

Additional Mitigation:

[B] 1.a. As development occurs under the phasing plan, fencing or other suitable barriers such as watercourses should be established at the interface between the phases which are developing and adjacent to agricultural lands so as to reduce the potential of urban-agricultural conflicts resulting from trespass, vandalism, crop and equipment damage, and theft.

[B] 1.b. To reduce the potential for adverse impacts from agricultural operations upon residential areas, a buffer zone of 50-100 yards shall be provided between the line of residential or commercial development and the nearest line of farmland, with fencing of each line to discourage trespass. This buffer should be assured as a condition of development approval, with removal of the buffer not to occur until the next phase of urban expansion is approved.

[B] 1.c To reduce the chance of spray drift hazards, agricultural operations should comply with San Joaquin County restrictions on the distance that pesticides can be applied to environmentally sensitive areas, such as residential areas, schools, parks, waterways and livestock. The distances required vary with the type of pesticide and method of application.

[B] 1.d. The City of Lathrop should monitor and ensure compliance with its "right to farm" ordinance which is designed to protect agricultural operations from urban-agricultural conflicts and inform residents about the types of agricultural operations that may occur in their vicinity. The ordinance protects properly operated farms from nuisance complaints. Proper notice to a prospective buyer is required at the time of property sale.

Effect of Additional Mitigation:

The inclusion of the above mitigation measures, together with relevant mitigation measures described in Part lV will reduce almost all impacts to less than significant levels. As stated in Part IV, the exception

is the ultimate and irreversible loss of agricultural lands which will remain an unavoidable significant impact, requiring a statement of overriding considerations prior to certification of the Project EIR. The mitigation measures listed above will ensure that potential conflicts between agricultural and urban uses are avoided or minimized through the implementation of, among other measures, buffer zones and barriers between these potentially conflicting uses.

Additional Impacts:

[S] 2. Construction of early phases of development on Stewart Tract will disrupt the irrigation and drainage of agricultural lands located west of Phase I on Stewart Tract. [**potentially significant**]

Additional Mitigation:

[S] 2. Revisions to the existing local irrigation and drainage systems on Stewart Tract will be necessary to keep the remaining farmland in operation. This could require additional pumps and ditches during early phases of development.

Effect of Additional Mitigation:

Implementation of the above mitigation measures will reduce impacts associated with disruption of agricultural irrigation and drainage systems located west of Phase I on Stewart Tract to less than significant levels by ensuring that these systems will remain operable.

Geology and Seismic Hazards

Impacts and mitigation measures related to the occurrence of an earthquake exceeding 6.5 on the Richter scale on pp. IV-7 and -8 with respect to the occurrence of an earthquake exceeding 6.5 on the Richter scale in combination with the potential for loss of life and property due to flooding and structural failure are covered in part on pp IV-8, -9 and -10 of Part IV. However, further description is warranted as guidance to the City and design engineers in preparing and reviewing structural drawings.

Existing Conditions:[1]

The project area is located at the transition between a deltaic system to the north and a major river distal alluvial fan basin system to the south. Surface and near surface geology in the vicinity consists of alluvial sediments deposited from San Joaquin River flows. The distribution of these sediments was strongly influenced by sea level changes during and after the last major ice age. The Modesto formation, with its predominantly clean fine-grained channel sands, is found in upland areas generally east of the San Joaquin River.

The Holocene formation is found over most of the Stewart Tract and along the western edge of Mossdale Village. This younger formation includes alluvial channel sands, overbank silty sands, clayey silts deposited in low areas and windblown sands. The clayey deposits are relatively expansive. Windblown sandy sediments are common along the western portion of Mossdale Village. Their source was the San Joaquin River bank and flood channel sediments exposed during low river flows, and were transported by dominant summer winds.

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[1] This discussion has been abstracted from an unpublished Draft Preliminary Geotechnical Report prepared by Roger Foott & Associates for the Califia Development Group, November 15, 1994.

The project site is in an area of low seismicity. Known faults that could have damaging effects on levees and structures within the planning area lay to the west, as shown on Figure III-7 (p. III-22). The larger of these faults are the San Andreas, Hayward and Calaveras. The Greenville-Mt. Diablo fault, though smaller, also has significant potential to cause damage. All four faults are historically active.

In recent times, another fault (a blind thrust fault) has been recognized by competent authority that is northtrending and dipping steeply westward. This fault is located along the western margin of the San Joaquin Valley. The magnitude 6.7 Coalinga earthquake of 1983 and the 1985 Avenal earthquake have provided evidence that blind thrust faulting is occurring at depth. Eaton (1986) postulates a similar fault system to the north as an explanation for the 1892 Vacaville/Winters earthquake and for recent microseismic activity observed in the area.

There is no known evidence of active surface faulting crossing the West Lathrop planning area. Also, there is some evidence of active subsurface faults that project into the project area. While the planning area will experience direct seismic shaking and possibly secondary effects of such shaking (liquefaction, lurching, lateral spreading, settlement), the area should not experience fault rupture. Estimates of limiting magnitudes for earthquakes for faults are shown in Table III- I (see p. III-23). Peak accelerations that might be expected in the bedrock beneath the West Lathrop planning area during such earthquakes are in the range of 0.10 to 0.20g (gravity), with a design value anticipated in the range of 0.20 to 0.25g.

Both aerial photo and field reconnaissance indicate that the site has changed little over the past 25 years, and that site geology is strongly influenced by the fluvial processes of the San Joaquin River and Paradise Cut. During site reconnaissance, discussions with owners and operators provided valuable insight into general soil conditions.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (r)], a project would have a significant effect on the environment if it would expose people or structures to geologic hazards. In this case, people and structures could be at risk as the result of earth-shaking, soil liquefaction and inadequate building foundations during high water flows in surrounding watercourses.

Additional Impacts:

[S] 1. The site will be exposed to seismic shaking, with some soils experiencing liquefaction during future high intensity earthquakes. A limited boring program indicated the presence of saturated, fairly clean sands and silts in a relatively loose state at shallow depths around parts of the site. These conditions indicate a significant potential for liquefaction which needs to be investigated in future geotechnical work assignments. [**significant**]

[S] 2. Other secondary seismic effects, such as lateral spreading and settlement, may also occur during future high intensity shaking. [**significant**]

Additional Mitigation:

[S] 1.a. Additional samples, field measurements, laboratory testing and analyses will be required before this liquefaction potential can be reliably assessed and appropriate foundation treatments recommended. This should be accomplished during preparation of preliminary engineering drawings, in accordance with applicable State and local governmental standards.

[S] 1.b. Several geotechnical approaches are available to mitigate the adverse effects of liquefaction under dwellings or other structures, including: excavation and recompaction; dynamic compaction; chemical or compaction grouting; and founding structures below the liquefiable layers.

[S] 2. The potential for secondary seismic effects should be evaluated in future work and if necessary mitigated through the use of relatively flat slopes, setbacks of building from steep slopes (of levees) and specialized soil treatment.

Effect of Additional Mitigation:

The inclusion of the above mitigation measures, together with relevant mitigation measures described in Part IV, will reduce almost all impacts associated with geologic and seismic hazards to less than significant levels. As stated in Part IV, the exception involves the unknown severity of future seismic events which makes it infeasible to fully mitigate impacts associated with the potential for liquefaction in the event of a severe earthquake. Consequently, a statement of overriding considerations will be required prior to certification of the Project EIR.

WATER RESOURCES

Water Supply

Impacts and mitigation measures related to water resources are covered in part on pp. IV-10 through -12 of Part IV. Further discussion is provided below, including the options available for achieving a firm supply of potable water for the Project, and including reuse of treated wastewater for non-potable uses such as landscape and agricultural irrigation.

Exiting Conditions:

As described in Part Ill (p. III-24), groundwater currently is the sole source of domestic water supply for the City of Lathrop. Regional trends show a gradual lowering of potable groundwater elevations and a more saline groundwater table. Cones of depression in the region are affecting groundwater flow, and a regional overdraft of groundwater supplies countywide continues to increase. The projected need for water to serve the West Lathrop planning area, plus other areas of projected urban expansion north of Mossdale Village and within the existing City limits, is estimated by the City and project engineers in a range up to 14.3 MGD (million gallons per day).

The City currently is supplied with domestic water from a groundwater aquifer, using five pumps located in the eastern part of the City. The yield from these pumps provide the water required for the current resident population and other development within the City. The pumps and aquifer are thought by competent authority to have reached the limits of their long-term water yield. The quality of water within this aquifer is also suspect for long-term water supply, with salt water intrusion from Delta waters degrading groundwater on a gradual basis. Both problems of supply and quality are caused by over-pumping of the aquifer and lack of up-slope fresh water recharge.

Agricultural irrigation wells serving Mossdale Village and Stewart Tract would not be suitable for the long-term production of domestic water for the City without adequate treatment of the water to meet State drinking water standards..

Based on policies of its General Plan, Lathrop's City Engineer published a Water System Master Plan in 1992. The Master Plan indicated that approximately 50% of the City's total water needs should come from

the groundwater supply, with the balance coming from a surface water source. Presently, the most attractive surface water source is from the South San Joaquin Irrigation District (SSJID), which has significant rights to waters of the Stanislaus River. As described in a draft report prepared in March of 1994, the proposed SSJID plan would (in brief) accomplish the following:[2]

1. Take water from the pool of water formed by a dam and new water intake in the Stanislaus River located near Van Allen Avenue;

2. Construct a water treatment plant southwest of the City of Manteca (south of SR 120) having an ultimate capacity of 225 MGD. The initial treatment plant would have a capacity of 100 MGD, which would be adequate to the year 2005. A second phase treatment plant would be built in 2005.

3. Treated water would then be distributed to the North Lathrop Connection (at Louise Avenue and I-5), and to the South Lathrop Connection (west of Manteca near the San Joaquin River and I-5).

Treated water from the North and South Lathrop Connections would enter the City of Lathrop's distribution system (now being planned by Siegfried Engineering of Stockton, California), and conveyed to and around the Specific Plan area as shown on Figure 27 and 28 of the Specific Plan.. If this SSJID water supply option is not developed in time for the City of Lathrop to provide water for the initial phase of West Lathrop development, Stewart Tract and Mossdale Village developers could, on an interim or permanent basis, either 1) draw water from vertical wells placed on Stewart Tract at minimum depths of 200' that will assure an adequate supply of potable water, with treatment provided as necessary, or 2) convert Stewart Tract agricultural rights to waters of the San Joaquin River for domestic use. These rights amount to approximately 34,000 (+ or -) Ac. Ft./Yr. Full conventional treatment and disinfection would be required. Under any of the above options, development would occur only to the extent it is supported by assurance that a firm supply of potable water will be available to serve that portion of the development then under consideration.

Based on the assumption that domestic water for West Lathrop would be available for distribution and storage, Siegfried Engineers has prepared Preliminary Plans indicating a potable water demand as follows:

Mossdale Village	=	1.58 MGD
Stewart Tract	=	6.78 MGD
Total daily demand	=	8.36 MGD

The system being designed for both Mossdale Village and Stewart Tract would be a looped system that crosses the San Joaquin River at two points. Five storage tanks would be included as follows:

Tank No. 1	=	5.0 mg [within central Mossdale Village]
Tank No. 2	=	6.0 mg [along the west side of Stewart Tract, off Circle Drive near Gold Rush Boulevard.]
Tank No. 3	=	5.0 mg [within the mid-west area of Stewart.Tract, off Circle Drive.]
Tank No. 4	=	6.0 mg [along the north side of Stewart Tract, off Circle Drive.]
Tank No. 5	=	4.0 mg [at the east end of Stewart Tract]

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2 Montgomery-Watson Engineers, **South County WTP and Conveyance Study,** March, 1994.

Of a total storage of 26.0 million gallons, 4.1 mg is allocated to fire flow and two days volume of daily demand is allocated as emergency storage. Water mains would range in size from 8 inch to 24 inch diameter. The distribution system is designed to operate between nodes at 30 psi to 60 psi. The following fire flow criteria would be met by this distribution system:

Residential	=	1000 gpm	2-hour duration
Commercial/Institutional	=	3000 gpm	4-hour duration
Theme parks and satellite uses (assuming building sprinklers)	=	4000 gpm	4-hour duration

Significance Criteria:

Under CEQA Guidelines [Appendix G, (h)], a project would have a significant effect on the environment if it would substantially degrade or deplete groundwater resources. For purposes of this section, impacts on water resources are considered to be significant if the intended supply were to prove unreliable or of inadequate quality for public consumption.

Additional Impacts:

[B] 1. Expansion of the City's municipal well field could have the eventual effect of lowering the quality of the City's drinking water supplies by increased levels of salinity. [**potentially significant**]

[B] 2. The City's existing domestic well water supply is not adequate for supplying the estimated volume of water (14.3 MGD) that will be needed by the year 2025, including West Lathrop. [**significant**][3]

[B] 3. Failure to practice urban water conservation through the reuse of treated municipal liquid waste would result in the over-consumption and waste of water from the various other sources available to the City. [**significant**]

Additional Mitigation: [Note: numbers assigned to mitigation measures correspond to the basic numbers assigned to the list of additional impacts. There may be several mitigation measures listed for a single impact.]

[B] 1.a. Water depths in existing and future wells will be monitored on a regular basis to determine if increased groundwater demands are adversely affecting the aquifer. For example, a sustained trend of declining water levels may signal that the aquifer is in a serious overdraft condition. In such an event, the City will consider prohibiting, or severely restricting the use of any new wells that can be expected to significantly intensify the condition.

1.b. The City will continue to monitor the quality of its well field groundwater in the interest of detecting the presence of potential contaminants; should the quantity or quality of groundwater pumped by the City begin to deteriorate, groundwater recharge programs will be implemented as supplemental sources of surface water become available.

1.c. City water consumption records will be monitored, and water meter repairs and testing programs will be maintained to pinpoint water system losses and inhibit excessive usage.

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[3] Ibid, [see Table 2.1, Section 2.]

1.d. Development on Stewart Tract and Mossdale Village will not be served with groundwater from the City's existing well field.

1.e. During the City's on-going investigations to locate additional long-term supplies of potable water for domestic use, further efforts will be required to determine if groundwater aquifers in the area will yield sufficient quantities of quality water suitable for domestic use.

[B] The potential for supplying adequate supplies of potable water rests with a combination of approaches pursued simultaneously, including those set forth below. The City will pursue each of these options, and shall withhold development for any phase of development under the West Lathrop Specific Plan until there is assurance of a firm supply of potable water commensurate with the amount of urbanization to be served. It is prudent to combine the available approaches based on the need for water conservation in a dwindling regional water environment.

2.a. To meet long-term water supply requirements, the City will continue to participate in a regional water project in which the South San Joaquin Irrigation District would provide the needed supply, construct the conveyance system and treatment infrastructure, treat the water to meet State Standards for domestic uses, and deliver the treated water to appropriate locations in or near the City of Lathrop. It is anticipated that several other cities will also participate in this water project. Studies and planning for this project currently are underway.

2.b Studies completed by Siegfried Engineering indicate that the use of groundwater obtained from wells on Stewart Tract can serve the needs of the development (on either an interim or permanent basis) if the water from this source is treated to meet State drinking water.[4]

2.c. Potable water may also be made available by converting riparian or appropriative water rights held by the Stewart Tract ownership in the amount of 34,000 acre feet per year. The City of Lathrop will file with the Water Rights Board to convert use of Stewart Tract appropriative rights in accordance with provisions of State Law. If utilized, this interim water supply will be treated to meet State Standards for M&I (Municipal & Industrial) use. Transfer of the agricultural water right for M&I use by the City will be approached under a program of phased development consistent with demand and need. This is needed to protect the existing agricultural water right until it is no longer needed for crop irrigation. The conversion of an agricultural appropriative by the City of Lathrop for M & I use is permitted by Section 1700 of the California Water Code.[5] This action could provide for all of the City's water needs contemplated under the Lathrop General Plan. A water treatment plant would be required to treat San Joaquin River water, and also for water from the Stanislaus River conveyed by SSJID.

2.d. Water obtained by the City from upstream sources (other than SSJID), if available, would be transported via the San Joaquin River channel or other surface water courses, treated and stored near areas of proposed development.

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4 Siegfried Engineering, Inc., **Alternate Water Supply, West Lathrop Specific Plan**, February 28, 1995.

5 Barring any protests, such a transfer of water rights is a relatively simple matter. Fees for the transfer are $100, to be paid to the State Water Resources Control Board for the expenses of processing the application, plus $800 for preparation of an Environmental Evaluation to be prepared by the Department of Fish and Game.

[B] 2.e. A domestic water supply will be provided to serve each phase of Stewart Tract and Mossdale Village before it is permitted to construct. The supply will be sufficient in reliability, quantity and quality in accordance with State Health regulations. The water supply system will be owned and operated by the City of Lathrop.

2.f. A distribution system of pipelines and storage tanks has been planned by Siegfried Engineering, Inc. which provides for five storage tanks with a capacities ranging from 4.0 to 6.0 million gallons (Total of 26.0 million gallons), to be located along the perimeter of Stewart Tract (#s 2-5) and within Mossdale Village south of Louise Avenue. These tanks will provide for emergency storage, fire flow and equalization storage.

2.g. As planned, the water mains appear adequate to carry water from proposed delivery points. If a water treatment plant is located on-site for treating San Joaquin River water, pump stations and water mains may require resizing and relocation during final design.

2.h. The water system is preliminarily planned to serve the needs of the proposed Project. When the Project proceeds to final design, the system will be reanalyzed and changes made to address a more accurate assessment of water demands.

2.i. Under phased development of the Project, phased development of the water system may be appropriate. In such event, storage, booster pumps and distribution lines may be less extensive than what will be required for ultimate development.

2.j. All water mains are to be looped or provided with appropriate line flushing facilities. In particular, water mains crossing the San Joaquin River are to be looped, at locations associated with bridges crossing the river if at all possible.

2.k. All water distribution facilities are to be constructed of durable materials and using construction practices to be approved by the City Engineer.

2.l. The development and the water system will be adequately protected from a 100 year flood event by improvements to the levees around Stewart Tract. In the case of power outages, standby power will be installed and properly maintained at all pumping stations to ensure a continuous supply of water.

2.m. Storage tanks are to be located below the horizon line where feasible, and landscaped to visually blend with the overall site and surrounding land use.

2.n. Adequate all-weather access from hard surfaced roads is required to all components of the water system, including right-of-way and ingress and egress routes for maintenance.

2.o. Line flushing and storage tank draining outlets are to be located to maximize the potential for water reuse opportunities.

3. Water conservation will be practiced by the City through the treatment and reuse of effluent for landscaping and agricultural irrigation by providing low water demand landscaping, water conserving methods of irrigation and the use of low-flow water fixtures.

2. Connection to the facility operated by the City of Manteca (which currently serves much of the developed acreage within the City of Lathrop.

As a practical matter, these alternatives may be pursued simultaneously because of the costs associated with selecting a single ultimate system in an atmosphere of uncertainty regarding the extent of urbanization that may occur in West Lathrop over the next 20+ years. This would be especially true for the Stockton connection alternative which would require extending a large diameter trunk line (and associated pumping stations) from Stewart Tract and Mossdale Village north and parallel to I-5 on the west to the vicinity of French Camp Road, some six miles north of Louise Avenue. Lateral trunk lines extending east of the freeway would be required to intercept existing lines within the City and to provide capacity for areas of the City that are under-served or not served at all by existing facilities.

Connection to the Manteca treatment facility would reduce the length of trunk line extensions required to serve industrial areas along the McKinley Avenue corridor and the Lathrop Road and Louise Avenue corridors between the two railroads. This alternative carries with it the need for considerable ultimate expansion of the land disposal acreage now held by Manteca, and the possible need for acquiring acreage well outside the planning areas of Manteca and Lathrop.

The results of this on-going analysis will be incorporated into the development engineering that will be required for first phase development of Stewart Tract and Mossdale Village. At this point, environmental concern is focused on the type and size of wastewater management system(s) that will be most appropriate for development under the West Lathrop Specific Plan, regardless of treatment facility location. A site capable of serving all of West Lathrop is being considered for planning purposes at the southeast corner of Stewart Tract, east of the I-5/SR 120/I-205 merge along the San Joaquin River. This site is in fact part of the Specific Plan proposal, with alternate land use configurations also being proposed under the Specific Plan if the plant is located elsewhere.

Wastewater Treatment Plant for Wastewater Reclamation and Reuse:

When development under the Specific Plan reaches a size where it generates wastewater volumes capable of feasible reuse for landscape irrigation, wastewater will be treated to a level suitable for irrigation of golf courses, agricultural land and landscaped areas to the standards prescribed by Title 22 of the California Administrative Code. The level and quality of treatment required will be determined by issuance of a discharge permit by the Regional Water Quality Control Board covering wastewater reclamation. As additional phases of development occur, the level of treatment required may be increased to the tertiary standard through the use of chemical coagulation and filtration processes and upgrading of the disinfection system.

The treatment plant will be sized initially to handle a design flow of approximately 1.2 MGD. The plant layout will facilitate future expansions in case provision of an ultimate solution to serve all of Lathrop and its projected growth is delayed. The treatment processes to be utilized include headworks, secondary treatment and disinfection. Secondary treatment will be used to biologically oxidize the soluble organics in the wastewater stream through the growth of microorganisms, followed by removal of the solids generated by this process through clarification. Solids would then be conveyed to a sludge digester for further treatment and storage. Ultraviolet radiation will be used for effluent disinfection. Projected effluent quality is shown in Table V-1.

TABLE V-1

PROJECTED EFFLUENT WATER QUALITY

PARAMETER	EFFLUENT CONCENTRATION (mg/l)
BOD5	15
Suspended Solids	15
Total Dissolved Solids	750
Turbidity	<5
Coliform Bacteria (MPN/100 ml)	23

Sludge will be stabilized through digestion in an aerated tank. The sludge will be dewatered to reduce its volume and to comply with regulations for sludge disposal. Ultimate disposal of sludge can occur by composting, spreading or discing on agricultural land and by land filling.

The wastewater treatment plant(s) will be designed for continuous reliable performance with provisions for component malfunction, alarms and power failure. All critical mechanical components in the process stream will have duplex or redundant units. In the event of an equipment malfunction, the secondary unit will automatically be started by the plant control system. All unit processes will be capable of rerouting for routine maintenance and repair while maintaining full compliance with effluent discharge specifications of the Regional Water Quality Control Board.

A standby power generator will be installed at the plant for use during interruptions in electrical power supply. The generator will automatically be started in the event of a disruption in service. The plant control system will monitor status and performance of the equipment and instrumentation utilized in the treatment processes. An alarm will be initiated and operating personnel will be contacted automatically if a problem is detected by the system,

Effluent Storage and Disposal:

For Phase 1 development, a reservoir will be required to store effluent during periods when irrigation is not possible, or a permit to discharge to surface water must be obtained. The reservoir will be sized based upon the average flows anticipated during the winter months and a rainfall year with a recurrence of once in 100 years. Studies currently underway by the City are examining the potential for using acreage between the freeway merge and the S.P. Railroad on Stewart Tract, close to the San Joaquin River for interim storage and disposal. If no discharge of treated effluent is permitted, and without wastewater reclamation, a permanent disposal area of approximately 900 acres will be required for Stewart Tract alone. For the entire area of urbanization envisioned by the General Plan, about 2,800 acres would be needed without effluent reuse. Part of the acreage required over the next 10-15 years could might be satisfied by utilizing Stewart Tract acreage to be held for the last phase of development. This would provide a mid-range approach to disposal until the ultimate approach to effluent storage and land disposal is determined.

Reclaimed Water Distribution Systems:

Distribution of reclaimed water requires a separate system from the potable water distribution system. These lines will run from the treatment plant to the effluent storage reservoir. This system will comply with American Water Works Association requirements for identification and construction of dual piping systems to prevent cross connections with the potable system and unauthorized use of the reclaimed water. The irrigation piping system will be color coded and warning tape will identify it as a reclaimed water system.

Reclaimed effluent will be pumped to the irrigation system that will provide water for the golf course(s) and other landscaped areas. Signs will be posted indicating the use of reclaimed water and measures will be taken to minimize public exposure. During the initial stages of development, reclaimed water may be sprayed on adjacent agricultural land within Stewart Tract. This will reduce initially the level of treatment required and the cost of treatment plant operation.. Ultimately, the primary use of reclaimed water will be for golf course irrigation. If additional reclaimed water is available, other sites to be irrigated might include boulevard corridors, landscaped medians, parks and other open space.

Operation and Maintenance of the plant will consist of daily visual checks of: treatment processes for problems; performance of preventive maintenance; sludge dewatering and disposal; repair and/or replacement of any malfunctioning equipment; sample taking; general housekeeping; and, report preparation.

Impacts:

[B] 1. Long-range sewerage capacity for the West Lathrop planning area requires wastewater management facilities that do not currently exist. Any new system(s) must meet the Waste Discharge Requirements established by the California Regional Water Quality Control Board, Central Valley Region (Regional Board). [**potentially significant**]

[B] 2. A matter of concern is whether additional treatment and disposal capacity is to be made available for Lathrop at the Manteca wastewater treatment facility, located east of McKinley Avenue and the Union Pacific Railroad, and north of State Route 120. [**potentially significant**]

Mitigation Measures: [Note: Numbers assigned to mitigation measures correspond to the basic numbers assigned to the list of impacts. Several mitigation measures may be listed for a single impact.]

[B] 1&2.a. Accommodating Lathrop's needs at the Manteca wastewater treatment facility is consistent with State policy and the intent of the Clean Water Grant Program under which plant construction was originally financed and authorized. If treatment capacity can be added for Lathrop, there would be fewer potential environmental consequences than would result from constructing one or more facilities to be managed separately by the City of Lathrop or connection to the Stockton plant.

[B] 1&2.b. Current limitations on the availability of land for effluent disposal at the Manteca facility may be satisfied in part by utilizing agricultural lands north of Yosemite Avenue both east and west of McKinley Avenue for the purpose. For the most part, these lands are being held as a buffer for existing industry rather than as sites having industrial potential. This acreage may also satisfy the need for land disposal if Site 3b adjacent to the existing Lathrop treatment plant is selected.

[B] 1&2.c. The wastewater management facilities required to serve West Lathrop will include collector sewers, pumping plants, a treatment plant (or expansion of the existing regional plant), storage,

effluent reuse and disposal systems capable of phased expansion of each component of the overall sewerage system with minimum system disruption and acceptable cost.

[B] 1&2.d. Future development under the West Lathrop Specific Plan shall not be permitted until adequate sewerage system facilities can be assured at the time of occupancy and/or operation of new developments.

[B] 1&2.e. Treated effluent is to be reused to the greatest extent feasible, for landscape and crop irrigation.

[B] 1&2.f. If adequate wastewater management facilities are not available in time to serve first phase development of Stewart Tract and Mossdale Village, then affected developers may, at their own expense, construct interim wastewater management facilities that are compatible with long-range wastewater management plans of the City of Lathrop. The costs of connecting to long-term facilities at a later date shall also be the responsibility of initial and subsequent developers requiring interim facilities.

[B] 1&2.g. With the exception of the Manteca and Stockton regional facilities, all wastewater management facilities located within or connecting to sewage sources operating within the city limits of Lathrop shall, upon acceptance and approval by the City of Lathrop and the Regional Water Board, be operated by the City of Lathrop.

[B] 1&2.h. All costs for interim or long-range wastewater management facilities will be charged by the City of Lathrop to the parties receiving the services; such charges may include costs for the following:

1) Planning and design;
2) Licensing and permitting;
3) Site acquisition and right-of-way
4) Construction;
5) Start-up
6) Operation & maintenance
7) Replacement

[B] 1&2.i. As Stewart Tract develops in phases over the time, a significant portion or portions of Stewart Tract will continue to be farmed and irrigated with treated effluent, and appropriate landscaping in developed areas will be irrigated with treated effluent when the quantities of effluent become sufficiently large to assure the feasibility of wastewater reclamation.

[B] 1&2.j . Wastewater management will be regulated at all times by Waste Discharge Requirements issued by the Regional Water Board.

Impacts:

[B] 3. The ultimate location of treatment and disposal facilities needed to serve West Lathrop development may have important site-specific adverse physical impacts on the environment, including potential for up-set (odor), adverse visual character, and potential adverse effects on the quality of the San Joaquin River, its immediate tributaries and its fisheries. [**significant**]

Mitigation Measures:

[B] 3.a. The alternatives being examined by the City of Lathrop for the location of wastewater treatment and disposal facilities shall be examined as to their site-specific environmental impacts; mitigation measures shall be applied to the selected location which are capable of eliminating all potential significant effects or of reducing such effects to acceptable levels.

[B] 3.b. Any alternative providing for a plant site within the Lathrop planning area will require a site for the temporary detention of influent in the event of a plant upset involving influent bypass of the treatment system. While such wastewater spills occur but rarely, the potential does exist and requires system design to the highest standards which will minimize this possibility.

[B] 3.c. The potential for off-site odors from the treatment plant shall be addressed by utilizing odor avoidance design of treatment facilities, primarily at the headworks, and trunk line conveyance facilities.

Impacts:

[B] 4. If an effluent storage reservoir is used for either short-term or long-term disposal of effluent to the land, the reservoir may require substantial acreage (long-term) and a prominent visual location (short-term). [**potentially significant**]

[B] 5. A potential exists for health hazards from reclaimed effluent sprayed on onto golf courses and other landscaped open space. [**potentially significant**]

[B] 6. The treatment process for any facilities located within the Lathrop planning area will generate biological solids requiring disposal. [**potentially significant**]

[B] 7. Land disposal of effluent from interim plant facilities will require sufficient acreage reasonably close to the treatment plant, regardless of its location. [**potentially significant**]

[B] 8. If a seasonal discharge permit is issued by the Regional Board for disposing treated effluent to the San Joaquin River during periods when land irrigation is not feasible, the quality of the effluent would have to meet discharge requirements set by the Regional Board, including protection of fisheries. [**less than significant**]

[B] 9. If one or more separate treatment plants are provided to meet the needs of the City and its West Lathrop expansion, treatment plant construction will require about four acres of land and plant operation will utilize power and chemicals. [**less than significant**]

[B] 10. Construction-related impacts will include truck traffic, noise from trucks and machinery, and the possible generation of off-site dust. These impacts will involve remote sites being considered either within the Lathrop planning area or at the Stockton or Manteca wastewater treatment plant sites. [**less than significant**]

Mitigation Measures:

[B] 4. If land disposal of effluent is required to meet the long-term needs of Stewart Tract, land toward the westerly end of the Tract would be most appropriate for the purpose given the phasing proposals for development under the Specific Plan.

[B] 5. The potential for health hazards from spraying reclaimed effluent to landscaped areas will be avoided by meeting State standards for such disposal under Title 22 of the California Administrative Code.

[B] 6. Sludge will require disposal to an approved site. Options include landfill, spreading or discing on agricultural lands, or composting.

[B] 7. Either permanent or temporary sites for land disposal of effluent will require adherence to State standards. Effluent disposal needs for an interim plant may be achieved by utilizing lands available on Stewart Tract, between the railroad and freeway. Another possibility may be agricultural pastures along the McKinley Avenue corridor north of Yosemite Avenue.

Effect of Mitigation Measures:

The above impacts associated with wastewater management are either less than significant or will be mitigated to a level of less than significant by implementation of the above mitigation measures, together with relevant mitigation measures described in Part IV. These measures will ensure that adequate wastewater management facilities will be available to serve the phased development of the Project when such development is ready for occupancy and operation. They will further provide for reuse of treated effluent to the greatest extent feasible and the siting of any new wastewater treatment facilities in a manner that will reduce or avoid adverse impacts.

Drainage and Flood Control

Impacts and mitigation measures related to drainage and flood control are covered in part on pp IV-11 and -12 of Part IV. Further discussion is provided below.

Existing Conditions:

The potential for flooding under conditions of a 100 year intensity event remains for the Stewart Tract, and also exists for Mossdale Village under greater than 100 year events. Historic levee breaks on Stewart Tract occurred in 1938 and 1950. The 1950 failure was located just north of Paradise Dam, at the juncture of Paradise Cut with the San Joaquin River. This failure caused the eastern part of Stewart Tract to become flooded to the Union Pacific Railroad embankment. In time, the railroad levee also failed, thus flooding the rest of Stewart Tract. The lost part of the railroad embankment was subsequently replaced with a trestle structure.

During low river conditions, the levees around Stewart Tract are generally "dry", with rivers flowing in natural channels incised below the base of the levees. Under these conditions, groundwater levels on Stewart Tract lay below the land levels. During high river flow conditions, the rivers rise out of their channels, flowing against the levees. Groundwater then becomes elevated to near the ground surface elevation, and even rises above it (i.e., flooding) in the lowest areas. Most existing older dwellings are on high ground, and newer homes are built on pads 2' to 3' higher than surrounding land. Both of these conditions result in elevating structures above groundwater levels.

Detailed discussion of existing and historic conditions relating to flooding is provided in a technical appendix to this EIR.[7]

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[7] Siegfried Engineering, Inc., **Stewart Tract Flood Protection**, December 14, 1994

Proposed Storm Water Drainage System:

For the Stewart Tract, the lakes and water features within the project function as storm water detention basins and provide BMP (Best Management Practice) treatment. Outflow from the basins is controlled by a weir structure and pump station. Both a "static" and "dynamic" analyses have been used for the preliminary design and sizing of each lake/weir/pump station combination. The static analysis predicts storm runoff volume based on an assumed runoff coefficient for each type of land use proposed by the Specific Plan. Pump station sizing was then computed by removing the runoff volume from the basin(s) within a specific period of time. A theoretical rise in lake water surface elevation was determined by converting the estimated runoff volume to an equivalent water surface height. The dynamic analysis predicts water surface rise by application of computer program HEC-1, using a balanced 100 year-48 hour storm event. Simulations were performed for a specified weir geometry and pump station size.

For Mossdale Village, storm water runoff would be drained initially to drainage swales along major roadways. Ultimate disposal would be by gravity flow pipelines and/or open channels to pump stations which will discharge into surrounding rivers and sloughs. This approach will also be used for parts of Stewart Tract not served by the lake systems. Detailed calculations, maps and tables used in developing the storm drainage system are provided in a technical appendix to this EIR.

Proposed Flood Control System:

Flood control for Mossdale Village already is adequate because of previous levee work necessary to protect the Weston Ranch residential project in southwest Stockton from a 100-year storm event. For Stewart Tract, a similar level of protection is to be provided by reinforcing and raising the existing perimeter levee system surrounding Stewart Tract to standards of the Federal Emergency Management Agency (FEMA).

The current standard for levee height determination is specified by the Federal Emergency Management Agency (FEMA). Generally, the levee crown is to have three feet (3') of freeboard above the 100-year water surface elevation, except in the vicinity of a structure such as a bridge where the levee crown must have four feet (4") of freeboard for a distance of 100' upstream and downstream from the structure. Because of the potential for ground subsidence and consolidation, the amount of freeboard may have to exceed the FEMA standard. This will assure that the 3' and 4' freeboard criteria cited above will be maintained. This issue is to be addressed in preparation of the Project soils report,

Significance Criteria:

Under CEQA Guidelines [Appendix G, (q)], a project would have a significant effect on the environment if it caused substantial flooding, erosion or siltation. In this case, the potential for significant effect would be flooding caused by a break in the existing protective system of levees, an overtopping of the levee system caused by a 100 year storm event, inundation from elevated groundwater or by inadequate surface water drainage of the site during a heavy rainfall or runoff activity. Siltation could also occur as the result of inadequate runoff collection facilities during periods of construction activity.

Additional Mitigation:

The following measures are recommended in addition to those listed on pages IV-9 and -10 as more specific guidance to the development approval process.

[S] 1. Portions of the levees around Stewart Tract will need rehabilitation to increase their height and broaden the landside slopes, as part of the development approval process. The final design of levee sections will require hydraulic and hydrographic analysis and the surveying of additional levee sections (including below the normal water line), slope stability analysis, and, if available, seepage data collected from piezometers during elevated river stages. It is likely that relatively broad levees with substantial freeboard above design flood levels will be considered appropriate, having regard to the very high level of investment which they will protect.

[S] 2. A levee rehabilitation process is recommended which leaves existing levees unchanged on the water side but which excavates the landside of the levees. The landside of the levee is replaced with engineered fill to at least the minimum height required by FEMA with a 1 on 4 landside backslope.

[S] 3. If further analysis indicates a need to continue transverse seepage through levees, an impermeable geofabric membrane could be incorporated into the new levee by laying material on the excavated levee slope prior to placing the engineered fill. In addition, or as an alternate measure, a "toe" drain may be installed at the base of the land side of the levees to intercept and pump seepage and the water discharged back to the river.

[S] 4. Levee widening should take into consideration the underground pipe systems located at the landside toe of the present levee. Parts of these systems will have to be removed or relocated to avoid burial under the toe of the upgraded levee. The final levee shape should also reflect project needs for areas adjacent to the levees (e.g., residential uses, open space corridor, golf courses, seepage swales, water courses). Preliminary studies indicate that the levees can be raised and broadened with the materials that are available from the Stewart Tract interior.

The following measures are recommended to mitigate problems associated with elevated groundwater surface at times of high river flows:

[S] 5. Several options are available. One involves filling to elevate developed parts of the site; another would utilize a low perimeter drainage swale that would be dry most of the time and intercept and drain elevated groundwater during prolonged wet periods. Collected water could be pumped into surface streams, or the interceptor swales could be made part of open space corridors and recreation areas. [Note: one or more of these techniques will be implemented on Stewart Tract.

Effect of Additional Mitigation:

Project impacts associated with drainage and flood control are either less than significant or will be mitigated to a level of less than significant by implementation of the above mitigation measures, together with relevant mitigation measures described in Part IV. These measures will ensure that flood protection will be provided for at least a 100 year intensity event and that the levees surrounding Stewart Tract will be improved to meet standards of FEMA and the Corps of Engineers .

Lake Management

The Project proposes an interconnected system of lakes on Stewart Tract to be used for on-site transportation, aesthetics, wildlife habitat, water sports, surface water management, flood control and storage for emergency fire flow. Potential problems associated with these beneficial uses are listed below, along with mitigation measures required to avoid or adequately manage such problems if they occur.

Existing Conditions:

The elevations of Stewart Tract throughout the area where lakes are planned are such that an interconnected system of lakes can be developed which will allow use and management as several units rather than as multiple lake units. The gradient necessary to allow an interconnected system is to be established by balancing cuts and fills from east to west so that the filled edges of the lake will be sufficiently low to permit a natural transition of outer slopes to the surrounding landscape as compared to a "dam" effect.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (f & g)], a project would have a significant effect on the environment if it could substantially degrade water quality or contaminate a public water supply. In this case, the potential for significant effect is posed by inadequate oxygenation of the lake water with resultant build-up of alga and bacteria inimical to public health. Mismanagement of the lake system could also have a substantial demonstrable negative aesthetic effect [CEQA Guidelines, Appendix (b)].

Impacts:

[S] 1. Inadequate design and management of the lake system can create problems of water quality, safety and hazards to public health. Potential problems include algal bloom (eutrophication), stagnant water and vector control (insect abatement), bacteria concentration as a threat to public health, unsightly visual characteristics, and adverse effects downstream on fisheries and the quality of water used for agricultural and open space irrigation. [**potentially significant**]

[S] 2. In connection with Impact #1, above, nutrients, sediments and various contaminants and pollutants may enter in flowing water, giving rise to several of the problems listed. [**potentially significant**]

[S] 3. A potential exists for an incompatibility of lake functions. Important examples include the following: [**potentially significant**]

a. Flood control in conjunction with storage of stormwater, sediment control, and wildlife nesting.

b. Sediment control in conjunction with flood control if capacity for sediment is inadequate and if growth of bottom vegetation is smothered.

c. Recreation use in conjunction with sediment control can become a safety hazard; recreational use in conjunction with wildlife habitat can be adverse if species do not tolerate disturbance.

Mitigation Measures:

[S] 1-3. The lake system is to be designed and managed to avoid the kinds of problems listed under Impact #s 1-3, above. Some of the more important measures that may be required include, but are not limited to: automatic aeration and/or frequent flushing; the use of automatic equipment to maintain appropriate lake elevations; lake sealing; the use of electrically powered boats at reduced speeds; and aquatic vegetation management to meet State and EPA standards.

The inclusion of the above mitigation, together with relevant mitigation measures described in Part IV, will reduce all impacts associated with lake management to less than significant levels by ensuring that the lake system within the Project will be designed and managed to avoid the potentially adverse impacts identified above, including those related to water quality, public health and safety and aesthetics.

BIOLOGICAL RESOURCES

Impacts and mitigation measures related to biological resources are covered in part on pp. IV-12 through IV-15 of Part IV. Further discussion is provided below.

Vegetation

Existing Conditions:

Riparian vegetation occurs around most of Stewart Tract along the San Joaquin River, Old River, and Paradise Cut. Paradise Cut supports a substantial, though fragmented, community of Great Valley Oak Riparian Forest. This is considered a sensitive community. Although Valley oaks are a widespread species, they are threatened due to the loss of riparian habitat in the Central Valley (CNPS, 1988). An estimated 0.46 acre of riparian habitat occurs around a pond in the middle of Stewart Tract near Paradise Cut (see Figure III-6).

A narrow band of riparian vegetation occurs along the San Joaquin River at the southern and western boundary of Mossdale Village. In addition, 31 acres of land owned by Reclamation District No. 17 adjacent to the San Joaquin River is designated as a Valley elderberry longhorn beetle mitigation site. This area, consisting of mixed riparian woodland vegetation, is owned by the Reclamation District and is not part of the project impact area. Nevertheless, it is an important wildlife oasis because of the large number of mature Fremont cottonwood and Valley oak trees.

Surveys were conducted throughout the entire planning area for seven special-status species including two state-listed species. The state-listed species, described below, included Delta button-celery *(Eryngium racemosum)*, and Mason's lilaeopsis *(Lilaeopsis masonii)*. None of these plant species were found. Thus, no impact would occur and no mitigation is required for these species.

Delta button celery (*Eryngium racemosum*) is a State Endangered and Federal Category I species. It inhabits seasonally flooded clay depressions in riparian scrub in the northern San Joaquin Valley and adjacent foothills (CNDDB, 1993). Only marginal habitat exists around Stewart Tract or Mossdale Village and no plants were seen during surveys. There is one CNDDB/RareFind record (dated 1984) of this species in the Lathrop quad from the vicinity of the historical monument on State Route 120, approximately three miles south of Lathrop. This area is not in the immediate vicinity of the project site.

Mason's lilaeopsis (*Lilaeopsis masonii*) is a State Rare and Federal Category 2 species. It inhabits intertidal marshes and streambanks in the Sacramento Valley and San Francisco Bay Region (Constance, 1993). Only marginal habitat exists around the fringe edges of Stewart Tract and Mossdale Village, and no plants were seen during surveys. There are no CNDDB/RareFind records of this species in the Union Island and Lathrop quads.

Surveys were also conducted for five special-status or CNPS list 4 species. The Biological Report prepared for this project (see Technical Appendices), presents a discussion of each of these species: Caperfruited tropidocarpum *(Tropidocarpum capparideum)*, California hibiscus *(Hibiscus californicus)*,

Delta tule-pea *(Lathyrus jepsonii ssp. jepsonii),* Slough thistle *(Cirsium crassicaule)* and Trichocoronis *(Trichocoronis wrightii* var. *wrightii).* However, none of these special-status plant species were found. Thus, no impact would occur and no mitigation is required for these species.

Surveys were conducted for Mexican elderberry *(Sambucus mexicana;* also see discussion under Wildlife). Although not a special-status species, Mexican elderberry is the host plant for **the** Valley elderberry longhorn beetle (VELB), a Federally-listed invertebrate species. Approximately 35 individual Mexican elderberry shrubs or clumps of shrubs occur on Stewart Tract and Paradise Cut (see discussion in Biological Report in the Technical Appendices). Most of these occur along the levees. Two clumps occur on the east side of the pond on Stewart Tract (see Figure 111-6). Approximately three individual shrubs or clumps of shrubs occur on Mossdale Village.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (c & d)], a project would have a significant effect on the environment if it could substantially affect a rare or endangered species of plant or the habitat of the species. As noted under the description of existing conditions (above), several plant species could be placed at risk with development under the proposed Specific Plan.

Impacts:

[S] 1. *Loss of Riparian Vegetation.* The proposed project will result in a loss of 0.46 acre of riparian vegetation surrounding the pond on Stewart Tract. No riparian habitatwould be affected in Mossdale Village that is not otherwise accounted for as jurisdictional wetland habitat. Under current project design, riparian vegetation will not be affected within Paradise Cut, nor along the waterside levee of San Joaquin River or Old River. [**potentially significant**]

[B] 2. *Loss of Elderberry Shrubs.* The loss of elderberry shrubs is a significant impact because of the loss of the host plant of a Federal Threatened species. [**potentiallyn significant**]

Mitigation Measures:

[S] 1. *Loss of Riparian Vegetation.* A minimum 3:1 mitigation acreage ratio will be used as the replacement ratio for all riparian vegetation lost as a result of project construction. Based on the current site design, 1.38 acres of riparian vegetation will be established in a suitable location and maintained in perpetuity. The specific location and technical details for establishment and monitoring will be described in the Comprehensive Mitigation Plan for this project (see below). In addition, the entire area of Paradise Cut has been left in open space, and will be managed for riparian and wildlife habitat, and/or for Swainson's hawk foraging habitat.

[B] 2. *Elderberry Shrubs.* Mexican elderberry shrubs will be avoided to the maximum extent possible. Any that cannot be avoided will be mitigated in accordance with U.S. Fish and Wildlife Service guidelines (General Compensation Guidelines for the Valley Elderberry Longhorn Beetle, U.S. FWS, February 26, 1993). The regulatory authority for 'take' of Mexican elderberry is based on an incidental take permit pursuant to section 7(a) or section 10 of the Federal Endangered Species Act (FESA), following a period of formal consultation. A section 10 consultation applies if a Federal agency is not involved with the project. A section 7 consultation is required if a Federal agency is involved and a take would occur.

Under FESA, the Secretary of Interior may issue an Incidental Take Permit upon completion of an acceptable mitigation plan for elderberry shrubs. The current Service guidelines specify mitigation ratios and monitoring requirements. In the event that any individual or clumps of elderberry shrubs would be affected by the proposed project, consultation will commence with the U.S. Fish and Wildlife Service, and an elderberry mitigation plan will be submitted to the Service for approval.

Effect of Mitigation Measures:

The inclusion of the above mitigation measures, together with relevant mitigation measures described in Part IV, will reduce all impacts described above to less than significant levels.. This will occur by ensuring that the loss of riparian vegetation will be compensated through application of a 3:1 replacement ratioo, that loss of Mexican elderberry shrubs will be avoided to the maximum extent possible, and that any unavoidable loss of Mexican elderberry shrubs will be mitigated in accordance with standards of the U.S. Fish & Wildlife Service.

Wildlife

Existing Conditions:

Wildlife in the study area consists of small mammal, bird, and reptile species. Surveys were conducted for 24 invertebrate and wildlife special-status or species of special concern. Discussions are presented below for the seven state-listed or federally-listed species evaluated for the DEIR: Valley elderberry longhorn *beetle (Desmocerus californicus dimorphus),* Giant garter snake *(Thamnophis gigas),* Aleutian Canada goose *(Branta canadensis leucopareia),* Swainson's hawk *(Buteo swainsoni),* Western yellow-billed cuckoo *(Coccyzus americanus occidentalis),* California black rail *(Laterallus jamaicensis coturniculus),* and San Joaquin kit fox *(Vulpes macrotis mutica).* Focused surveys were conducted for San Joaquin kit fox, under the direction of, and following the specific protocol prescribed by the U.S. Fish and Wildlife Service in effect at that time.

The **Valley elderberry longhorn beetle** *(Desmocerus californicus dimorphus)* (VELB) is a Federal Threatened species. This species requires an elderberry shrub *(Sambucus mexicana)* as a host plant. Mexican elderberry, the host plant of the VELB, occurs in moist, valley oak woodlands along the margins of rivers and streams in the lower Sacramento and upper San Joaquin Valleys. The beetle's habitat consists of riparian forests with dominant species of valley oak, cottonwood, willow, and sycamore with an understory of elderberry shrubs (CNDDB/RareFind, 1993). There were no CNDDB/RareFind records of VELB in the Union Island or Lathrop quads. Elderberry shrubs were found in several locations on Stewart Tract and Mossdale Village.

Although no VELB were observed on these shrubs, individual shrubs are nevertheless treated by the U.S. Fish and Wildlife Service as potential habitat. Approximately 35 individual shrubs or clumps of shrubs occur on Stewart Tract and Paradise Cut, with most occurring along the levees. Two clumps occur on the east side of the pond on Stewart Tract. The exact number on Stewart Tract to be affected by the Project will depend on final site design. About three shrubs or clumps of shrubs occur on Mossdale Village, and one or more could be affected by marina-related construction.

The **Giant garter snake** *(Thamnophis gigas)* is a State Threatened and Federal Endangered species, occurring in or near streams and sloughs (with mud bottoms) of the Central Valley (Stebbins, 1985). Potential habitat exists on the Project site in the vicinity of Paradise Cut, the San Joaquin River, and in the agricultural drainage canals on Stewart Tract and Mossdale Village. Therefore, focused surveys

were conducted for a period of 10 days in June and July 1993, but no evidence of this species was found. There are no CNDDB/RareFind records of this species in the Union Island or Lathrop quads.

The **Aleutian Canada goose** *(Branta canadensis leucopareia)* is a Federal Threatened species. This species occurs in meadows and marshes where it forages for a variety of marsh vegetation, algae, seeds of grasses and sedges, grain (in winter) and berries, as well as a variety of terrestrial and aquatic invertebrates (Ehrlich, Dobkin & Wheye, 1992). Only marginal habitat exists in the project area due to the predominance of agricultural land uses and limited extent of marsh vegetation. No evidence of this species was found and there are no CNDDB/RareFind records of this species in the Union Island or Lathrop quads.

The **Swainson's hawk** *(Buteo swainsoni)*, a State Threatened species, migrates from South America in the spring and returns in the fall. This species occurs in open areas such as savannas, prairies, deserts, and open pine-oak woodlands (Ehrlich, Dobkin & Wheye, 1992). In the California Central Valley this species prefers riparian areas adjacent to alfalfa, hay, or wheat fields supporting microtine rodent populations (CNDDB, 1993). Habitat exists on the Stewart Tract and Mossdale Village project sites. This species nests in riparian trees around Stewart Tract and Mossdale Village, and forages in the agricultural fields of Stewart Tract, Mossdale Village, and surrounding areas. Active Swainson's hawk nests were observed in these areas. Swainson's hawks will build new nests, or will occupy existing nests that they or other raptors have constructed (Schlorff, 1994, Personal Communication.). They will also utilize old magpie nests (CDFG, 1990). There are eight CNDDB/RareFind records (dated 1971, 1982, 1983, 1990, 1992) of this species in the Union Island and Lathrop quads. The records are from various locations in the vicinity of Stewart Tract.

The **Western yellow-billed cuckoo** *(Coccyzus americanus occidentalis)* is a State Endangered species. This species occurs in extensive cottonwood/willow riparian woodlands, particularly where undergrowth is most dense (Ehrlich, Dobkin & Wheye, 1992). The species has been known to nest in riparian jungles of willow mixed with cottonwoods and an understory of blackberry, nettle, or wild grape (CNDDB, 1993). Only marginal habitat exists in the project site due to the discontiguous stands of riparian vegetation on Stewart Tract. Focused surveys were conducted over a four day period from July 12 to August 11, 1993, using pre-recorded tape calls. However, no individuals were heard or seen. There are no CNDDB/RareFind records of this species in the Union Island or Lathrop quads.

The **California black rail** *(Laterallus jamaicensis coturniculus)* is a State Threatened and Federal Category I species. This small, secretive species primarily inhabits salt marshes bordering larger bays and tidal salt marshes well vegetated with pickleweed and is occasionally found in brackish and freshwater marshes (CDFG, 1990). Only marginal habitat exists in Paradise Cut for absence of salt marsh and limited freshwater marsh vegetation. Focused surveys were conducted over a four day period (July 12 - August 11, 1993), using prerecorded tape calls. However, no individuals were heard or seen. There are no CNDDB/RareFind records of this species in the Union Island or Lathrop quads.

The **San Joaquin kit fox** *(Vulpes macrotis mutica)* is a State Threatened and Federal Endangered species found in grasslands, saltbush scrub, open woodlands, foothills and alkaline sink valley floor habitats (CNDDB, 1993). There are no CNDDB/RareFind records of this species in the Union Island and Lathrop quads. Detailed surveys for this species were conducted in 1993 in accordance with U.S. Fish and Wildlife Service protocol. The protocol consisted of walking transects and conducting night spotlighting on Stewart Tract and within a 2-mile radius around Stewart Tract and Mossdale Village (Little and Erdoe, 1994). No evidence of this species was found, nor were any individuals seen. Because the San Joaquin kit fox is a Federal Endangered species, a formal Biological Assessment was

Assessment was submitted to the U.S. Fish and Wildlife Service for review on April 11, 1994. The Service responded on June 9, 1994, concurring "...that the proposed project would not result in incidental taking (defined, in part, as killing. harming or harassment) of the federally-listed endangered San Joaquin kit fox, *Vulpes macrotis muitica*, or in destruction or adverse modification of critical habitat of a federally listed species."[8]

Surveys were also conducted for 19 wildlife special-status or species of special concern. The Biological Report prepared for this project (see Technical Appendix), discusses each of these species. Western pond turtle was observed in Paradise Cut and in the San Joaquin River adjacent to Mossdale Village. Northern harrier and White-tailed kite were observed on Stewart Tract and Mossdale Village. Surveys for riparian brush rabbit and riparian woodrat were conducted over the entire Project site. Trapping surveys were conducted in the Paradise Cut portion of Stewart Tract for riparian brush rabbit and riparian woodrat, under the direction of, and in accordance with a Memorandum of Understanding from the California Department of Fish and Game. These five species are described below:

The **Northwestern pond turtle** *(Clemmys marmorata marmorata)* is a Federal Category 2 and DFG "Species of Special Concern"; the **southwestern pond turtle,** *(Clemmys marmorata pallida)* is a DFG "Species of Special Concern" recommended for Federal Category I status. Pond turtles occur in ponds, streams, marshes, canals, and irrigation ditches (Stebbins, 1985). Potential habitat exists in the waterways surrounding the Project site. Three pond turtles were observed on snags in Paradise Cut on 13 July 1993, and one was observed basking on a snag in the San Joaquin River north of the Mossdale Marina in June 1993. Stewart Tract is in a range of overlap between both of these types of pond turtle (Stebbins, 1966), and it was not possible to determine which subspecies were observed. There are no CNDDB/Rarefind records of this species in the Union Island and Lathrop quads.

The **White-tailed kite** |black shouldered kite|*(Elanus caeruleus)* is a DFG "Special Animal" for nesting habitat found in riparian woodlands and near freshwater marsh (Ehrlich, Dobkin & Wheye, 1992). Foraging habitat exists on Stewart Tract and Mossdale Village, and the kite was observed in these areas. A white-tailed kite nest occurs on the west side of the S. P. Railroad, north of Paradise Cut. Another occurs on the west side of the San Joaquin River, on the opposite side of the river from Mossdale Village. A suspected nest site occurs in the elderberry mitigation area on Mossdale Village.

The **Northern harrier** *(Circus cyaneus)* is a DFG "Species of Special Concern' for nesting habitat. This species occurs in open areas near marsh land where it forages (Ehrlich, Dobkin & Wheye, 1988). Although foraging habitat exists on the project site and this species was seen, no nests were found.

Riparian brush rabbit *(Sylvilagus bachmani riparia)* is a State Candidate Endangered and Federal Category I species. This species occurs in lowland riparian areas, where it favors dense brush (Jameson and Peeters, 1988). Only marginal habitat exists on the western tip of Stewart Tract. There are no CNDDB/RareFind records of this species in the Union Island and Lathrop quads. No individuals were captured or sighted during the trapping surveys performed under Department of Fish and Game guidelines in accordance with a Memorandum of Understanding with the Department. Although habitat within the survey area is suitable for riparian brush rabbit, the small size of the habitat area and its isolation from other suitable habitat is a significant limiting factor (BBA and

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8 Letter from Joel A. Medlin, Field Supervisor, Ecological Services Branch, Fish and Wildlife Service, Sacramento, dated June 9, 1994, to R.John Little, PdD, of Sycamore Environmental Consultants, consulting biologists for the West Lathrop Specific Plan and EIR.

Sycamore Environmental Consultants, 1994). A report documenting the survey protocol and results was submitted to Department of Fish and Game in April 1994.

The **San Joaquin Valley woodrat** *(Neotoma fuscipes riparia)* is a DFG "Species of Special Concern" (CSC) and a Federal Category I species. This species occurs in hardwood riparian woodlands and brushlands of the Central Valley (Jameson & Peeters, 1988). Only marginal habitat exists on the western tip of Stewart Tract. There are no CNDDB/Rare Find records of this species in the Union Island or Lathrop quads. No individuals were captured or sighted during the trapping surveys performed under Department of Fish and Game guidelines in accordance with a Memorandum of Understanding with the Department. The surveys conducted showed no evidence that riparian woodrat occurs at Stewart Tract (HBA and Sycamore Environmental Consultants, 1994). A report documenting the survey protocol and results was submitted to the Department of Fish and Game in April 1994.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (c & d)], a project would have a significant effect on the environment if it could substantially affect a rare or endangered species of animal or the habitat of the species. As noted above, several species could be placed at risk with Project development.

Impacts:

[S] 1a.. Swainson's Hawk Foraging Habitat. Approximately 4,590 acres on Stewart Tract could ultimately be affected at full project build-out. . [**potentially significant**]

[M] 1b. Swainson's Hawk Foraging Habitat. Approximately 950 acres on Mossdale Village could ultimately be affected at full project build-out. [**potentially significant**]

[S] 2a. Swainson's Hawk and Other Raptor Nest Trees. Because Swainson's hawks will a) build new nests, b) occupy existing nests that they previously constructed, or c) occupy or take over nests that other raptors and magpies have constructed, most existing large nest platforms are therefore potentially suitable nest sites for this species. There are approximately 33 raptor nests on or surrounding Stewart Tract and Mossdale Village (see Figure 111-6; and, Personal. Comm. and unpublished data from Waldo Holt, 22 April, 1994). Approximately seven trees on Stewart Tract (see Figure III-8), containing known or suspected Swainson's hawk nests or other raptor nests, could be directly or indirectly affected under current project design. The direct or indirect impacts on nest trees could result in a loss of reproductive success of Swainson's hawk or other raptor species. The loss of a tree containing a raptor nest could be subject to the permit provisions of the Migratory Bird Treaty Act. [**potentially significant**]

[M] 2.b. Swainson's Hawk and Other Raptor Nest Trees. There are approximately 33 on surrounding Stewart Tract and Mossdale Village (see Figure 111-6;0 and, Personal. Comm. and unpublished data from Waldo Holt, 22 April 1994). One large valley oak tree containing a suspected Swainson's hawk nest (see Figure III-6;), would probably need to be removed from Mossdale Village to accommodate current project design. The direct or indirect impacts on nest trees could result in a loss of reproductive success of Swainson's hawk or other raptor species. The loss of a tree containing a raptor nest could be subject to the permit provisions of the Migratory Bird Treaty Act. [**potentially significant**]

Mitigation Measures: [Note: Numbers assigned to mitigation measures correspond to the basic numbers assigned to the list of impacts. Several measures may be listed for a single impact.

[B] 1. Swainson's Hawk Foraging Habitat: The City of Lathrop has prepared a Habitat Management Plan (HMP) that addresses project impacts and mitigation measures for this species. It is anticipated that a California Endangered Species Act Memorandum of Understanding, incorporating a California Endangered Species Act Management Authorization, would be instituted under Fish and Game Code Section 2081. This Authorization, between Lathrop and the Department of Fish and Game, would be established for the 'taking' of foraging habitat.

Among its component parts, the HMP will provide mitigation for the loss of foraging habitat at a ratio of 0.5 acres of dedicated habitat (either on-site or off-site) to 1 acre of foraging habitat to be replaced by urbanization. Dedication will be in the form of recorded conservation easements, and cash payments (or equivalents) to assure adequate funds for annual operation and maintenance. For Stewart Tract, the HMP will include part or all of Paradise Cut to satisfy Phase 1 development requirements. For Mossdale Village, conservation easements will be required off-site.

[B] 2. Swainson's Hawk and Other Raptor Nest Trees: The nearly 900-acre Paradise Cut will remain as open space and will be managed for wildlife habitat values, including nesting raptors. Valley oaks and Fremont cottonwoods will be planted in the Great Valley Oak Riparian forest in Paradise Cut at a 10:1 ratio for any nest trees lost on Stewart Tract or Mossdale Village. Thus, a minimum of 10 trees, five of each species, will be planted for each one lost. These will serve as replacement trees for any trees lost that contain Swainson's hawk nests or other raptor nests. Specific technical details on how, when, and where such trees will be planted and monitored will be described in a Habitat Management Plan (HMP).

Impacts:

[B] 3. San Joaquin Kit Fox. Detailed surveys for this species were conducted in 1993 in accordance with U.S. Fish and Wildlife Service protocol. No evidence of this species was found, nor were any individuals seen. [**less than significant**]

[B] 4. Giant Garter Snake. Focused surveys were conducted for this species between June 29 and July 14, 1993, for a total of 10 days. However, no evidence of this species was found. [**less than significant**]

[B] 5. Aleutian Canada Goose. Only marginal habitat exists on predominance of agricultural land uses and the limited extent of marsh vegetation. No evidence of this species was found. [**less than significant**]

[S] 6. Western Yellow-Billed Cuckoo. Only marginal habitat exists on the project corridor due to the discontiguous stands of riparian vegetation on Stewart Tract. Focused surveys were conducted over a four day period from July 12 to August 11, 1993, using prerecorded tape calls. However, no individuals were heard or seen. [**less than significant**]

[S] 7. California Black Rail. Marginal habitat exists on the project corridor due to the discontiguous stands of riparian vegetation on Stewart Tract. Focused surveys were conducted over a four day period from July 12 to August I 1, 1993, using prerecorded tape calls. However, no individuals were heard or seen. [**less than significant**]

[B] 8. Western Pond Turtle. Western pond turtle was observed in Paradise Cut and in several locations in the San Joaquin River. However, under current project design, it is not likely to be adversely affected. **[less than significant]**

Mitigation Measures:

[B] 3. San Joaquin Kit Fox: No mitigation required. The West Lathrop Specific Plan area is outside the known range of this species [based on extensive field surveys].

[B] 4. Giant Garter Snake: No mitigation required. Paradise Cut will remain as open space and will be managed for wildlife habitat values, which will benefit this species in the event that it migrates into the area.

[B] 5. Aleutian Canada Goose: No mitigation required.

[S] 6. Western Yellow-Billed Cuckoo: No mitigation required. Paradise Cut will remain as open space and will be managed for wildlife habitat values, which will benefit this species in the event that it migrates into the area.

[S] 7. California Black Rail: No mitigation required.

[B] 8. Western Pond Turtle: No mitigation required. Paradise Cut will remain as open space and will be managed for wildlife habitat values, which will benefit this species which is known to inhabit the area.

Impacts:

[S] 9a. White-tailed kite (= black shouldered kite): A white-tailed kite nest occurs on the west side of the Southern Pacific Railroad, north of Paradise Cut. The proposed project on Stewart Tract could adversely affect the use of this nest tree through direct loss, or indirectly through abandonment of the nest site. **[potentially significant]** Due to the large regional base of foraging habitat, the loss of such habitat for white-tailed kite is not significant. The loss of foraging habitat results in an incremental, cumulative loss of potential foraging habitat. **[less than significant]**

[M] 9b. White-tailed kite. A nest occurs on the west side of the San Joaquin River, opposite Mossdale Village, and a suspected nest tree occurs in the elderberry mitigation area on Mossdale Village. **[less than significant]** Due to the large regional base of foraging habitat, the loss of such habitat for white-tailed kite is not significant. The loss of foraging habitat results in an incremental, cumulative loss of potential foraging habitat. **[less than significant]**

[B] 10. Northern harrier. The proposed projects on Stewart Tract and Mossdale Village will result in a loss of foraging habitat. Due to the large regional base of foraging habitat, the loss of such habitat for northern harrier is not significant, but nevertheless, results in an incremental, cumulative loss of potential foraging habitat. **[less than significant]**

[S] 11. Riparian Brush Rabbit. Trapping for this species in 1994 at the western tip of Paradise Cut, in accordance with DFG guidelines, did not result in any captures. **[less than significant]**

[S] 12. San Joaquin Valley Riparian Woodrat. Trapping conducted for this species in 1994 at the western tip of Paradise Cut, in accordance with DFG guidelines, did not result in any captures. **[less than significant]**

Mitigation Measures:

[B] 9. White-tailed kite (= black shouldered kite): Foraging habitat preserved for Swainson's hawk as a result of implementation of an HMP, will also directly benefit this species.

[B] 10. Northern harrier: No mitigation required. Foraging habitat preserved for Swainson's hawk as a result of implementation of an HMP, will also directly benefit this species.

[B] 11. Riparian Brush Rabbit: Although the western tip of Stewart Tract within Paradise Cut contains habitat for this species, it is believed that the available area is not large enough to support a viable population of Riparian brush rabbit. However, as the Great Valley Oak Riparian forest is enhanced, restored, and enlarged in Paradise Cut, it may become possible to introduce Riparian brush rabbit into this area. The City of Lathrop will work with the Department of Fish and Game to determine if such an action is warranted.

[B] 12. San Joaquin Valley Riparian Woodrat: No mitigation required. Paradise Cut will remain as open space and will be managed for wildlife habitat values, which will benefit this species in the event that it migrates into the area.

[S] 13. Paradise Cut Wildlife Habitat Corridor: The nearly 900-acre Paradise Cut is a valuable wildlife corridor linking the San Joaquin River and other portions of the Delta, such as Tom Paine Slough and Salmon Slough. Paradise Cut will be managed for wildlife and open space. Based on the results of the HMP, portions of Paradise Cut may be managed as foraging habitat for Swainson's hawk. Such management decisions will be addressed in the HMP. However, any areas not used in this manner will be restored as Great Valley Oak Riparian and other appropriate habitat. A buffer will be established between Paradise Cut and the remainder of Stewart Tract. To avoid disturbance of wildlife, Paradise Cut will be kept off-limits to visitors, except for educational or scientific purposes.

Effect of Mitigation Measures:

Project impacts on wildlife are either less than significant or will be mitigated to a level of less than significant by the implementation of the above mitigation measures, together with relevant mitigation measures described in Part IV. These mitigation measures require the implementation of the HMP already prepared by the City to address impacts and mitigation measures for the Swainson's hawk. Such implementation will benefit other species as well. The mitigation measures also ensure that every raptor nest tree lost on Stewart Tract and Mossdale Village will be replaced with Valley oaks and Fremont cottonwoods at a 10:1 ratio in the Great Valley Oak Riparian forest in Paradise Cut.

Wetlands

Existing Conditions:

Jurisdictional wetland features in the Stewart Tract and Mossdale Village study areas include drainage channels, ponds, rivers, and wetlands. Jurisdictional wetland features in the Stewart Tract study area

include the San Joaquin River, Paradise Cut and Old River, a permanent pond, and an intermittent drainage canal adjacent to Stewart Road. Stewart Tract is surrounded by river and slough wetland systems. A total of 260.99 acres of jurisdictional wetlands occur on Stewart Tract, and 86.51 acres on Mossdale Village (Little, 1993). However, most of these acreages are attributable to the San Joaquin River, Paradise Cut, and Old River. Table V-2 presents the location and acreage of wetlands that would be affected under proposed project design.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (c)], a project would have a significant effect on the environment if it could substantially affect a wetland habitat of plants and animals.

Impacts:

[b] 1. Jurisdictional Wetlands. Under current project design, 10.97 acres of jurisdictional wetlands would be affected on Stewart Tract and 2.57 acres on Mossdale Village. A total of 8.46 acres of fill would occur in an existing Canal adjacent to Stewart Road. The placement of fill in jurisdictional wetlands is considered a significant impact, and is subject to both Federal and State permit procedures. [**potentially significant**]

TABLE V-2

WETLAND ACREAGE POTENTIALLY AFFECTED WITHIN THE PLANNING AREA

LOCATION	Stewart Tract [Acres]	Mossdale Village [Acres]
Stewart Tract		
a. Canal adjacent to Stewart Road and `marsh' at headwaters of the canal.	8.46	
b. Freshwater pond	2.05	
Mossdale Village		
a. Scrub wetland vegetation at marina site.		0.01
b. Scrub wetland vegetation on NW side.		2.56
Totals	**10.97**	**2.57**

Mitigation Measures:

[B] 1a. Jurisdictional Wetlands: Placement of fill between 1 and 10 acres in jurisdictional wetlands or waters of the U.S. requires a Nationwide permit from the U.S. Army Corps of Engineers. An individual permit is required if more than 10 acres of wetlands are filled. Depending on the actual number of wetlands filled, either a Nationwide or individual Section 404 permit will be requested. Mitigation requirements for placement of fill in jurisdictional wetlands will be described in a mitigation plan that will accompany the Nationwide or individual permit application. It is anticipated that mitigation for wetland impacts would be conducted on-site in Paradise Cut, Stewart Tract, and Mossdale Village.

[S] 1b. The canal adjacent to Stewart Road is believed to be a channelized, intermittent creek. Thus, the California Department of Fish and Game may require a 1601/1603 Streambed Alteration Agreement before the flow or direction of the channel can be altered. Therefore, it is anticipated that the project applicant will consult with the Department of Fish and Game to determine if a Streambed Alteration Agreement is required, and will obtain one if required.

[N] 1c. A Water Quality Certificate will be obtained from the Regional Water Quality Control Board.

Effect of Mitigation Measures:

The inclusion of the above project mitigation measures, together with relevant mitigation measures described in Part IV, will reduce all impacts on wetlands and watercourses to less than significant levels. Such measures will ensure that any fill of wetlands or watercourses will be mitigated in compliance with regulations of the Corps of Engineers and California Department of Fish & Game.

Fisheries

Existing Conditions:

The description of the existing environmental setting in Part II is adequate for this section. The description of impacts and mitigation provided below provides additional guidance to that provided in Part IV.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (d)], a project would have a significant effect on the environment if it could substantially interfere with the movement of any resident or migratory fish species. In this case, there is a potential for damage to the fisheries through domestic use of water from the San Joaquin River, contamination from surface water runoff, flooding, contamination from construction activities, levee maintenance, and marina construction.

Additional Impacts:

[B] 1. Contamination of watercourses from surface water drainage (from streets and other paved surfaces) would result in negative impacts on fishery resources. [**potentially significant**]

[b] 2. Contamination of watercourses from construction activities would have a negative impact on fishery resources. [**potentially significant**]

[B] 3. Depending on its source, the community water supply can have a negative impact to the fishery resources. [**potentially significant**]

Mitigation Measures:

[B] 1. Positive off-site drainage, detention reservoirs, and removal of surface water contaminants in compliance with NPDES standards are proposals of the project (see Part IV).

[B] 2a. Detention reservoirs are to be installed prior to construction activity to remove sediment and debris.

[B] 2b. To protect the Chinook Salmon run, construction activities on the water side of the levees of the San Joaquin River and Old River should be limited to non-migratory summer months (i.e., mid-June through September).

[B] 2c. Although sufficient data are not available for the Delta Smelt, Longfin Smelt and Sacramento Splittail in the vicinity of the West Lathrop planning area, these species would nevertheless be protected during construction by measures 1, 2a, and 2b, above.

[B] 3a. If state or federal water projects are to be the source of potable water, water use must comply with state and federal water quality requirements for fish species of special concern for the San Joaquin Delta.

[B] 3b. Fish salvaging should be undertaken for fish which end up in sloughs and channels of the project area as a result of state and federal pumping operations.

[B] 3c. Water conveyors which divert from the San Joaquin River or other watercourses must be screened in accordance with standards established by the State Department of Fish and Game.

Additional Impacts:

[B] 4. Any flooding of Stewart Tract resulting from periods of heavy rainfall or breaks in protective levees could result in negative impacts on the fishery resources. [**potentially significant**]

[B] 5. Marina construction and operation could have a negative impact on the fishery resources of the San Joaquin River, and particularly on **species of special concern**. [**potentially significant**]

[B] 6. Levee maintenance bank-protection activities, such as riprapping, removal of vegetation and placement of dredged materials on levee banks, could have a negative impact on fishery resources. [**potentially significant**]

[B] 7. The conversion of agricultural land to urban use as proposed would have a positive impact on the fishery resources, by eliminating pesticides and other chemical constituents of agricultural return flows which are now pumped to adjacent watercourses. [**significant positive**]

Mitigation Measures:

[S] 4. Project levees are to be strengthened to standards of the Corps of Engineers. Lakes and other open space areas of the site are to be depressed to act as detention basins during periods of high runoff and/or flooding under emergency conditions.

[B] 5. Marina construction along watercourses shall be accomplished in accordance with National Marine Fisheries Resources Guidelines, and in consultation with appropriate federal and state authorities. The several measures specified under measure 2, above, shall be followed if determined by state and federal authorities to be applicable.

[B] 6. Levee maintenance bank protection activities shall be limited, as prescribed under measure 2, above.

[B] 7. No mitigation for fishery protection is required for converting agricultural land to urban use, except as may be applicable under measures 1-6, above.

Effect of Mitigation Measures:

Project impact on fisheries are either less than significant or will be mitigated to a level of less than significant by implementation of the above mitigation measures, together with relevant mitigation measures described in Parft IV. These measures require compliance with NPDES standards to reduce or eliminate contamination of off-site watercourses and limit construction activities that could adversely affect the Chinook Salmon run. They also ensure that any water diversions from the San Joaquin River must be screened in compliance with State Department of Fish & Game standards, and thast construction of levees and the marina must be in compliance with applicable federal and state requirements and regulations.

NOISE

Impacts and mitigation measures relkated to noise are covered in part on pp IV-15 and -16 of Part IV. Further discussion is provided below.

Existing Conditions

The existing noise environment is described fully in Part III of this report. The existing noise environment at the project site is defined primarily by traffic on Interstate 5, Interstate 205, and State Route 120, as well as by operations on the Southern Pacific and Union Pacific railroad tracks. The effects of these noise sources are limited to the eastern portions of the project site. The project area is not significantly affected by aircraft operations from Stockton Metropolitan Airport, or helicopter training activities associated with the Sharpe Army Depot. In addition, no significant noise-producing commercial or industrial uses were identified within the immediate vicinity, although the use of farm equipment results in localized short-term increases in ambient noise levels in the agricultural parts of the project site.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (p)], a project would have a significant effect on the environment if it could increase substantially the ambient noise levels for adjoining areas. The Noise Section of the Hazard Management Element of the Lathrop General Plan contains standards for acceptable noise exposure for several land use designations affected by various noise sources. The Noise Section standards which are applicable to this project are described below.

For noise due to traffic on public roadways, railroads or aircraft in flight, new development of residential land uses will not be permitted in areas exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn} unless the project design includes effective mitigation measures to reduce exterior noise levels to 60 dB L_{dn} at proposed outdoor activity areas and 45 dB L_{dn} in indoor areas. Where it is not possible to reduce exterior noise levels to 60 dB L_{dn} or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dB L_{dn} may be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dB L_{dn} with the windows and doors closed.

For new schools and parks, the Noise Section of the General Plan establishes normally acceptable exterior noise level criteria of 65 dB and 70 dB L_{dn}, respectively. Interior noise level standards for these uses are not specified in the Noise Section.

In addition to these criteria, noise impacts are also evaluated by comparison of project generated noise levels to existing ambient noise levels. Table V-3 is based upon recommendations recently (August 1992) made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. Their recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been assumed that they are applicable to all sources of noise that are described in terms of cumulative noise exposure metrics such as the L_{dn} or CNEL.

TABLE V-3

SIGNIFICANCE OF CHANGES IN CUMULATIVE NOISE EXPOSURE

Ambient Noise Level Without Project (L_{dn} or CNEL)	Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON), as applied by Brown-Buntin Associates, Inc.

Future Noise Impacts:

The future noise environment of the West Lathrop Planning Area will be defined primarily by roadway traffic and railroad noise sources. Increased roadway traffic will cause future noise levels to be higher than existing levels. Noise levels generated by on-site activities at the proposed theme parks, sports centers and commercial centers could also contribute to the future noise environment to a small extent, but roadway traffic noise will be the major noise impact. Noise impacts due to and upon the project were evaluated by comparison of traffic and railroad noise levels to the applicable standards of the Hazard Management Element of the Lathrop General Plan and the increase in noise

Traffic Noise Impacts:

Future traffic noise levels were analyzed for the horizon years of 2005 and 2017. The alternative scenarios analyzed within each of the horizon years are as follows:

Year 2005	Year 2017
· No Project	· No Project
· With Project Access Alternative A[9]	· With Project Access Alternative A
· With Project Access Alternative B	· With Project Access Alternative B
	· With Project Access Alternative C

The FHWA Model was used to calculate future noise levels. Traffic volumes used in the Model were obtained from the Crane Transportation Group. The Day/Night traffic distribution, truck mix assumptions and vehicle speeds used in the Model were obtained from BBA file information and Caltrans. Tables V-4 and -5 show traffic noise levels for years 2005 and 2017 at 100 feet from the center of roadways for the traffic scenarios described above. Also shown are the changes in noise levels attributable to the project. The distance from the center of the roadway to the 60 dB L_{dn} contour for each scenario is shown in the Technical Appendix on file for public review in the Lathrop Community Development Department at City Hall. Figures V-1 and -2 show Year 2005, Alternative A and Year 2017, Alternative A traffic noise contours along I-5, I-205 and SR 120.

Tables V-4 and -5 (Years 2005 and 2017 Traffic Noise Levels) show that the following major roadways that are within or adjacent to the project will produce significant noise impacts for the No Project, Alternative A, Alternative B or Alternative C scenarios: [Note: a significant impact is assumed if noise levels exceed 60 dB L_{dn} at 100 feet. Mitigation measures would be required for noise-sensitive development occurring with the 60 dB L_{dn} contours]. [**significant**]

Year 2005	Year 2017
· I-5	· I-5
· I-205	· I-205
· SR 120	· SR 120
· Circle Drive	· Circle Drive
· Golden Valley Pkwy.	· Golden Valley Pkwy.
· Gold Rush Blvd.	· Gold Rush Blvd.
	· Paradise Road

The projected 60 dB L_{dn} noise contours for the 2005 and 2017 horizon years are shown on Figures V-1 and -2, respectively.

Outside the Specific Plan area, a significant noise impact is assumed if the change in traffic noise levels exceeds the criteria shown in Table V-3. From Table V-4 (Year 2005), it is apparent that a significant noise impact will occur along portions of Louise Avenue and Manthey Road (Golden Valley Parkway). From Table V-5 (Year 2017), a significant noise impact will occur along portions of Louise Avenue, Manthey Road (Golden Valley Parkway) and Paradise Road. [**potentially significant**]

[9] Full description of the access alternatives can be found in the discussion of transportation, traffic and circulation impacts near the end of Part V of this report.

TABLE V-4

YEAR 2005 TRAFFIC NOISE LEVELS (L_{dn}, dB) AT 100 FEET FROM ROADWAY CENTERS

Roadway	No Project	Alt. A	Change, dB	Alt. B	Change, dB
Interstate 5					
Roth-Lathrop	82.0	82.5	+0.5	82.4	+0.4
Lathrop-Louise	82.3	82.7	+0.4	82.6	+0.3
Louise-SR 120	82.5	82.7	+0.2	83.3	+0.7
SR 120-I-205	83.9	84.0	+0.1	84.3	+0.4
South of I-205	77.9	78.3	+0.4	78.3	+0.4
SR 120					
Yosemite-I-5	79.3	79.9	+0.6	79.7	+0.4
I-205					
I-5-MacArthur	81.8	82.1	+0.3	82.2	+0.4
Circle Drive					
North of Mossdale	--	62.9	--	64.6	--
South of Mossdale	--	62.2	--	62.2	--
Gold Rush Blvd.					
Circle-Manthey	--	--	--	64.9	--
Lathrop Road					
Manthey-I-5	63.0	64.1	+1.1	64.6	+1.6
East of I-5	66.8	67.5	+0.7	67.4	+0.6
Louise Avenue					
Manthey-I-5	57.8	63.6	+5.8	67.3	+9.5
East of I-5	64.8	65.3	+0.5	66.1	+1.3
Manthey Rd. (Golden Valley Pkwy.)					
Roth-Lathrop	57.8	63.0	+5.2	63.0	+5.2
Lathrop-Louise	61.0	64.1	+3.1	64.9	+3.9
Louise-Mossdale	53.7	66.8	+13.1	66.9	+13.2
South of Mossdale	--	65.0	--	64.7	--
Mossdale Boulevard					
I-5-Golden Valley	--	67.8	--	54.3	--
Golden Valley-Circle	--	68.0	--	60.8	--
Paradise Road					
North of I-205	54.1	53.5	-0.6	53.5	-0.6
South of I-205	53.5	53.5	-0-	53.5	-0-
Roth Road					
Manthey-I-5	58.5	58.5	-0-	58.3	-0.2
East of I-5	62.8	63.4	+0.6	62.7	-0.1

TABLE V-5

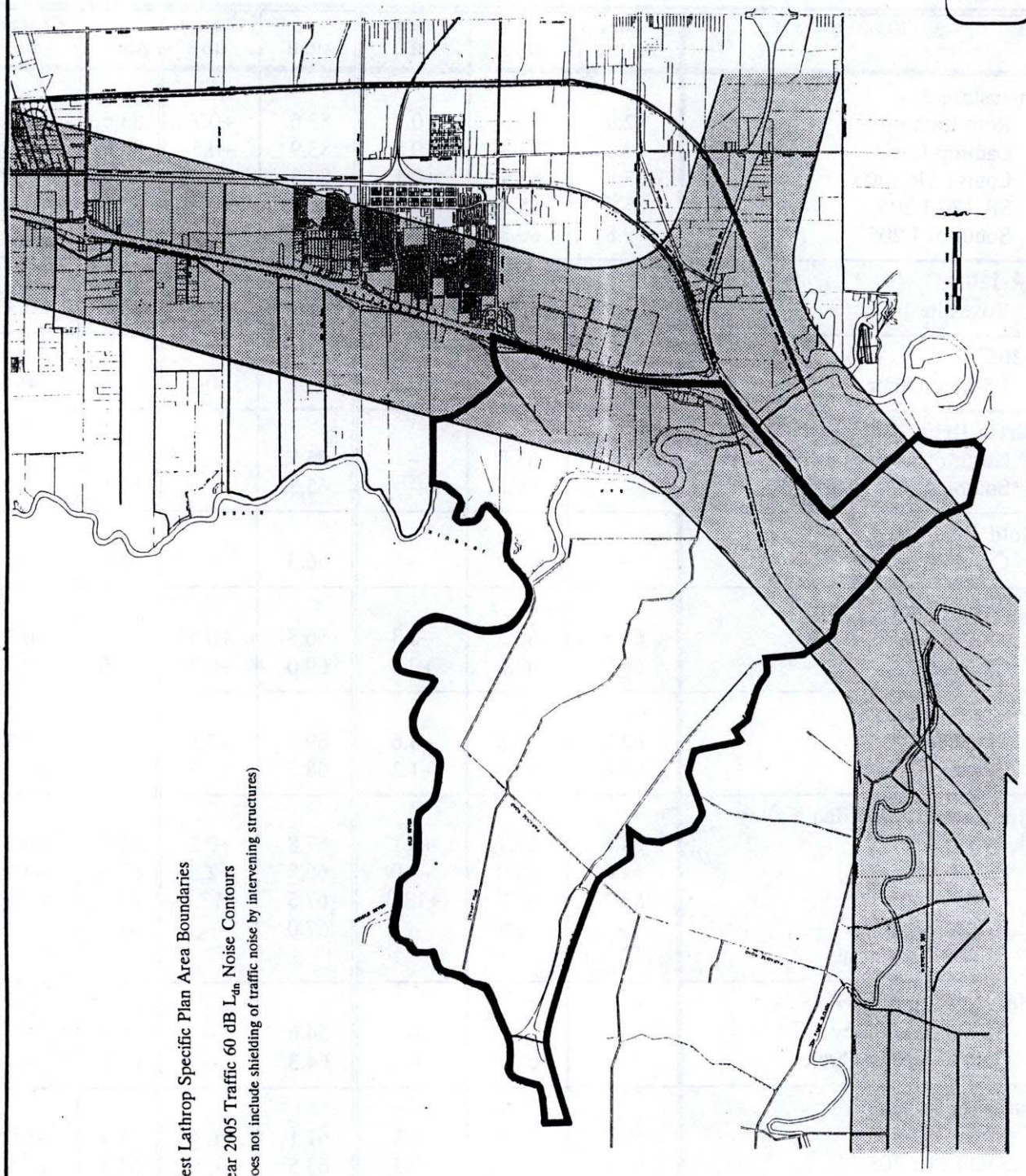
YEAR 2017 TRAFFIC NOISE LEVELS (L_{dn}, dB)) AT 100 FEET FROM ROADWAY CENTER

Roadway	No Project	Alt. A	Change, dB	Alt. B	Change dB	Alt. C	Change, dB
Interstate 5							
Roth-Lathrop	82.9	83.6	+0.7	83.6	+0.7	83.6	+0.7
Lathrop-Louise	83.4	83.9	+0.5	83.9	+0.5	83.9	+0.5
Louise-SR 120	83.8	83.9	+0.1	84.3	+0.5	84.1	+0.3
SR 120-I-205	85.3	85.5	+0.2	85.5	+0.2	85.5	+0.2
South of I-205	79.8	80.3	+0.5	80.3	+0.5	80.3	+0.5
SR 120							
Yosemite-I-5	81.3	82.0	+0.7	81.9	+0.6	81.6	+0.3
I-205							
I-5-MacArthur	83.1	83.3	+0.2	83.1	-0-	83.1	-0-
Circle Drive							
North of Mossdale	--	65.8	--	65.1	--	64.7	--
South of Mossdale	--	65.7	--	65.3	--	65.5	--
Gold Rush Blvd.							
Circle-Manthey	--	66.0	--	66.3	--	65.2	--
Lathrop Road							
Manthey-I-5	66.3	66.6	+0.3	66.8	+0.5	66.8	+0.5
East of I-5	68.7	69.0	+0.3	69.0	+0.3	69.0	+0.3
Louise Avenue							
Manthey-I-5	62.2	67.8	+5.6	69.3	+7.1	68.7	+6.5
East of I-5	66.8	68.0	+1.2	68.3	+1.5	68.0	+1.2
Manthey Rd. (Golden Valley Pkwy.)	67.6	67.7	+0.1	67.8	+0.2	67.8	+0.2
Roth-Lathrop	64.0	68.0	+4.0	66.8	+2.8	68.3	+4.3
Lathrop-Louise	53.7	66.7	+13.0	67.5	+13.8	68.3	+14.6
Louise-Mossdale	--	66.9	--	67.0	--	67.2	--
South of Mossdale							
Mossdale Boulevard							
I-5-Golden Valley	--	68.9	--	54.6	--	65.3	--
Golden Valley-Circle	--	67.9	--	64.3	--	66.0	--
Paradise Road							
North of I-205	60.7	63.5	+2.8	67.1	+6.4	66.7	+6.0
South of I-205	62.7	63.4	+0.5	63.5	+0.6	63.5	+0.6
Roth Road							
Manthey-I-5	62.5	63.9	+1.4	64.0	+1.5	64.0	+1.5
East of I-5	65.7	66.4	+0.7	66.4	+0.7	66.4	+0.7

FIGURE V-1

TRAFFIC NOISE CONTOURS, YEAR 2005 HORIZON

BBA



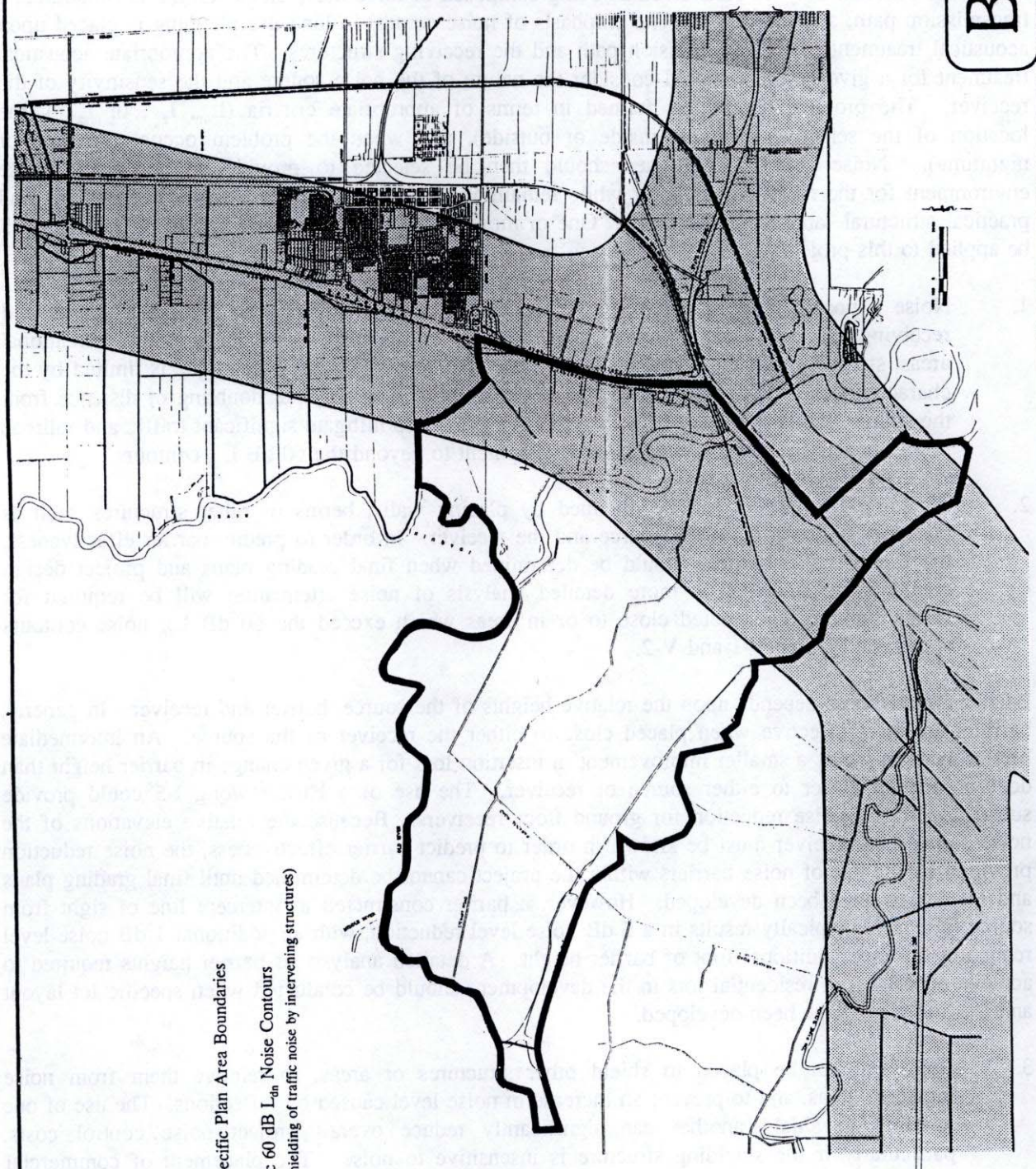
: West Lathrop Specific Plan Area Boundaries

: Year 2005 Traffic 60 dB L_{dn} Noise Contours
(Does not include shielding of traffic noise by intervening structures)

FIGURE V-2

TRAFFIC NOISE CONTOURS, YEAR 2017 HORIZON

BBA



: West Lathrop Specific Plan Area Boundaries

: Year 2017 Traffic 60 dB L_{dn} Noise Contours
(Does not include shielding of traffic noise by intervening structures)

Mitigation Measures:

Any noise problem may be considered as being composed of three basic elements: the noise source, a transmission path, and a receiver. The emphasis of noise control in land use planning is placed upon acoustical treatment of the transmission path and the receiving structures. The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. The problem should be defined in terms of appropriate criteria (L_{dn}, L_{eq}, or L_{max}), the location of the sensitive receiver (inside or outside), and when the problem occurs (daytime or nighttime). Noise control techniques should then be selected to provide an acceptable noise environment for the receiving property while remaining consistent with local aesthetic standards and practical structural and economic limits. One or more of the following noise control techniques will be applied to this project:

[B] 1. Noise exposure may be reduced by increasing the distance between the noise source and receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally 4 to 6 dBA per doubling of distance from the source. Setbacks could be utilized in this project to mitigate significant traffic and railroad noise impacts by limiting residential development to beyond the 60 dB L_{dn} contours.

[B] 2. Shielding by barriers can be obtained by placing walls, berms or other structures such as buildings between the noise source and the receiver. In order to predict barrier effectiveness, the use of noise barriers should be determined when final grading plans and project design elements are known. A more detailed analysis of noise attenuation will be required for residential projects located close to or in areas which exceed the 60 dB L_{dn} noise contours shown on Figures V-1 and V-2.

Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller improvement in insertion loss for a given change in barrier height than does a location closer to either source or receiver. The use of a barrier along I-5 could provide substantial traffic noise reduction for ground floor receivers. Because the relative elevations of the noise source and receiver must be known in order to predict barrier effectiveness, the noise reduction provided by the use of noise barriers within the project cannot be determined until final grading plans and lot design have been developed. However, a barrier constructed to intercept line of sight from source to receiver typically results in a 5 dB noise level reduction, with an additional 1 dB noise level reduction for each additional foot of barrier height. A detailed analysis of barrier heights required to achieve 60 dB L_{dn} at residential lots in the development should be conducted when specific lot layout and grading plans have been developed.

[M] 3. Buildings can be placed to shield other structures or areas, to remove them from noise impacted areas, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise. The placement of commercial buildings to serve as sound barriers to freeway noise in residential areas will be especially useful in Mossdale Village.

[B] 4. Within residential areas, carports or garages can be used to form or complement a barrier shielding adjacent dwellings or an outdoor activity area. Similarly, one residential unit can be placed to shield another so that noise reduction measures are needed for only the unit nearest

the noise source. Placement of outdoor activity areas within the shielded portion of a building complex, such as a central courtyard, can be an effective method of providing a quiet retreat in an otherwise noisy environment. Patios or balconies may be placed on the side of a building opposite the noise source, and "wing walls" can be added to buildings or patios to help shield sensitive uses.

When structures have been located to provide maximum noise reduction by barriers or site design, noise reduction measures may still be required to achieve an acceptable interior noise environment. The cost of such measures may be reduced by placement of interior dwelling unit features.

[B] 5. Bedrooms, living rooms, family rooms and other noise-sensitive portions of a dwelling can be located on the side of the unit farthest from the noise source. Bathrooms, closets, stairwells and food preparation areas are relatively insensitive to exterior noise sources, and can be placed on the noisy side of a unit. When such techniques are employed, noise reduction requirements for the building facade can be significantly reduced, although the architect must take care to isolate noise-sensitive areas by the use of partitions or doors.

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through acoustical design of building facades.

[B] 6. Standard residential construction practices provide approximately 15 dB noise reduction for building facades with open windows, and approximately 20-25 dB noise reduction when windows are closed. Where greater noise reduction is required, acoustical treatment of the building facade is necessary. Where window exposures are critical, reduction of relative window area is the most effective control technique, followed by providing acoustical glazing (thicker glass or increased air space between panes) in low air infiltration rate frames, use of fixed (non-movable) acoustical glazing or the elimination of windows. Noise transmitted through walls can be reduced by increasing wall mass (using stucco or brick in lieu of wood siding), isolating wall members by the use of double- or staggered-stud walls, or mounting interior walls on resilient channels. Noise control for exterior doorways can be provided by reducing door area, using solid-core doors, and by acoustically sealing door perimeters with suitable gaskets. Roof treatments may include the use of plywood sheathing under roofing materials.[10]

Effect of Mitigation Measures:

The inclusion of the above project mitigation measures. together with relevant mitigation measures described in Part IV, will reduce all impacts described above to less than significant levels. These measures will ensure that noise exposure to residential areas will be minimized by providing setback areas and sound barriers between the noise sources and the receiving use. The design and construction of residences and other structures, and the arrangement of various land uses as barriers to noise transmission will also reduce noise impacts of the Project.

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[10] Note that standard energy-conservation double-pane glazing with an 1/8" or 1/4" air-space is not considered acoustical glazing, as its sound reduction for some noise sources is actually less than that of single-pane glazing.

LIGHT AND GLARE

The discussion on pp. IV-16 and -17 of Part IV sets forth the Project impacts associated with light and glare and the mitigation measures related to those impacts contained in Specific Plan proposals. Further discussion is not required in this Part V because there are no other feasible mitigation measures that could further reduce the impacts of light and glare generated by the Project..

PUBLIC, MUNICIPAL UTILITY AND ENERGY SERVICES

Impacts and mitigation measures related to public, municipal utility and energy services are covered on pp IV-17 and -18 of Part IV. Further discussion is provided below with respect to solid waste management, electrical and natural gas energy requirements and school service.

Solid Waste Management

Existing Conditions:[11]

The City of Lathrop currently provides solid waste management for its residential areas under a seven year contract with a solid waste hauler which provides curbside pick-up of containers. This solid waste is trucked to the San Joaquin County Lovelace Transfer Station and then to the County's Class III Foothill Landfill. Commercial wastes are collected not less than once per week under the same franchise agreement with the private hauler. Industrial waste is collected by four different private waste collection companies which operate under a permit issued by the City on an annual basis.

All solid waste that is not recycled or reused is taken to the County's Foothill Landfill. Some residents within the City haul their solid waste to the Lovelace transfer station, paying a tipping fee set by the County. This is allowed as a hold over from the time when Lathrop was an unincorporated community. Resident hauling is becoming less popular each year perhaps because City fees for pick-up are mandatory.

The costs of solid waste management within the City are funded by fees for the collection, hauling and deposal required. General Fund monies of the City are not used for the purpose. The City has implemented and is expanding a diversion policy where recyclable and reusable materials are separated from the disposable waste. Large industrial operators within the City manage their own recycling programs. In 1989, 10,716 tons of solid waste were generated within the City, with 6,625 tons disposed of to permitted landfills, and 4,091 tons being diverted.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (v)], a project would have a significant effect on the environment if it would involve the use, production or disposal of materials which pose a hazard to people in the area affected. For the purposes of this EIR, a significant impact would also occur if it did not provide for the safe and reliable collection and disposal of the considerable quantities of solid wastes expected over time.

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[11] The discussion of existing conditions and some projections is based on information contained in the City of Lathrop's "Integrated Solid Waste Management Plan AB 939, adopted March 2, 1993.

Projected Solid Waste Generation:

At buildout, the project can be expected to generate in the range of 50,000 - 60,000 tons of solid waste per year, of which approximately 50% will be recycled.

Impacts:

[B] 1. The Stewart Tract and Mossdale Village developments are expected to generate large amounts of solid waste at full development. Initially, construction wastes can be expected to be significant, with large quantities of solid wastes generated during all phases of development by residents and visitors to the area. Based on waste generating characteristics of the proposed Anaheim Resort Specific Plan, it is reasonable to assume that the volume will be four to five times times greater than the nearly 11,000 tons generated within the City from all sources in 1989.[12] **[significant]**

Mitigation Measures:

[B] 1a. The City will monitor development to ensure compliance with the City's Integrated Solid Waste Management Plan (as prepared under the provisions of AB 939).

[B] 1b. Since development will be phased, substantial acreage will remain in agricultural use. Resulting solid wastes from agricultural operations will require traditional approaches to management, using livestock and crop wastes for soil fertilization.

[B] 1c. Mandatory pickup will be required for residential areas, along with containerized sorting of wastes capable of recycling and reuse.

[B] 1d. The significant amounts of wood wastes generated during construction activities are to be segregated and processed as wood chips and mulch for use in landscaping, animal husbandry and farming.

[B] 1.e. Grass clippings will generate large amounts of organic waste and are to be mixed with other organic wastes and recycled as compost. Lawn mowing should be accomplished with mulch-forming blades to reduce the amount of clippings requiring composting.

[B] **Impacts:**

[S] 2. The unique resort and commercial recreation character of Stewart Tract development will generate large amounts of solid waste daily. Theme park operations will in themselves generate large volumes requiring daily pickup and washdown of hard surfaces where solid waste is allowed to accumulate. These volumes and accumulations can become unsightly and unhealthful. **[potentially significant]**

Mitigation Measures:

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[12] Michael Brandman & Associates and the City of Anaheim, **Anaheim Resort Specific Plan Draft EIR,** SCH No. 91091062, June 1994.

[S] 2a. A solid waste transfer station will be required for Stewart Tract waste management where residential and non-residential waste can be sorted into recyclable and disposable wastes for appropriate final disposition.

[S] 2b. Vendors are to be encouraged, and in some cases required, to purchase products in low volume and weight containers that are biodegradable, and to purchase products from suppliers that offer empty container buy-back services.

[S] 2c. Consideration should be given to establishing exhibits at the Visitors Center which provide information on the latest technology in waste management and how recycling and reuse of waste is accomplished.

[S] 2d. Medical wastes generated by the on-site Medical Care Center are to be managed under rules and regulations established by State and County health authorities.

[S] 2e. Large animal wastes are to be treated at the sewage treatment plant. Animal wastes that may be mixed with organic bedding material (e.g., sawdust, wood mulch, hay, straw) are to be applied to appropriate agricultural lands at times when fields can be plowed or disced after application.

[B] 2f. Sludge originating from the sanitary wastewater treatment process is to be composted and applied to agricultural and open space lands at appropriate times of the year.

[B] 2g. Hazardous wastes are to be managed and disposed in accordance with applicable State and local government regulations.

Effect of Mitigation Measures:

The inclusion of the above mitigation measures, together with relevant mitigation measures described in Part IV, will reduce all impacts related to solid waste management to less than significant levels. Among other things, these mitigation measures will ensure that development will comply with the City's Integrated Solid Waste Management Plan and that a waste transfer station will be provided for Stewart Tract where residential and non-residential solidn waste can be sorted into recyclable and disposable wastes for appropriate final disposition.

Electrical and Natural Gas Energy Requirements

Existing Conditions:

Existing conditions for this topic are described in Part III of this EIR.

Significance Criteria:

Under CEQA Guidelines [Appendix G, (n)], a project would have a significant effect on the environment if it would encourage activities which result in the use of large amounts of fuel or energy.

Projected Natural Gas and Electrical Demand:

Projected demands for natural gas and electricity were developed by Siegfried Engineering and submitted to the Pacific Gas & Electric Company for comment in December 1994. These projections

are summarized in Table V-6 for Stewart Tract and Mossdale Village. Commercial electrical energy demands are expected to comprise 26.9% of total demand for Mossdale Village, whereas commercial demand will comprise 72.8% of total demand for Stewart Tract. By contrast, natural gas demands for residential use are expected to be substantially greater in both of these planning areas as compared to commercial demand.

Mitigation Measures:

The Pacific Gas & Electric Company has responded with a letter stating that it has the ability and capacity to meet the electrical and natural gas demands of the project, and that it will work with project developers in developing the most cost effective approach to the provision of facilities on a phased basis for the life of the project.

TABLE V-6

PROJECTED ELECTRICAL DEMAND FOR STEWART TRACT & MOSSDALE VILLAGE[13]

SPECIFIC PLAN AREA	Phase 1 [KW]	Phase 2 [KW]	Phase 3 [KW]	Phase 4 [KW]	Totals
Stewart Tract	56,900	14,340	22,230	9,540	103,100
Mossdale Village	2,630	5,020	3,190	3,300	14,140
TOTALS	**59,530**	**19,360**	**25,420**	**12,840**	**117,240***

TABLE V-7

PROJECTED NATURAL GAS DEMAND FOR STEWART TRACT & MOSSDALE VILLAGE[14]

SPECIFIC PLAN AREA	Phase 1 [FT]	Phase 2 [FT]	Phase 3 [FT]	Phase 4 [FT]	Totals
Stewart Tract	200,450	111,500	93,930	9,380	417,240
Mossdale Village	28,130	36,840	31,050	30,960	126,980
TOTALS	**228,580**	**148,340**	**124,980**	**47,340**	**544,220***

* Totals are rounded to nearest 10; final totals include an "Other Areas" category which is too minor to list.

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13 Summary from detailed projections of kilowatt [KW] hours of demand prepared by Siegfried Engineering, December 6, 1994.

14 Ibid, pertaining to cubic feet [Ft] of gas demand

Effect of Mitigation Measures:

The inclusion of the above mitigation measures will reduce all impacts related to electrical and natural gas energy requirements to less than significant levels. These measures will ensure that Project development will be adequately serviced by P.G. & E, which has the ability and capacity to meet electrical and natural gas demands of the Project. P.G. & E will work with Project developers in producing the most cost effective approach to the provision of needed facilities on a phased basis for the live of the Project.

Elementary and High School Services

Existing Conditions:

The West Lathrop planning area is served by the Manteca Unified Schools District, the Banta School District and the Tracy High School District. Mossdale Village would be served by the Manteca Unified District for both elementary and secondary education; the Banta School District would provide elementary education to Stewart Tract, while the Tracy High School District would provide secondary education to Stewart Tract. Each of these school districts suffers from overcrowding of classrooms and inadequate core facilities to serve the burgeoning school child populations within their districts.

School child generation factors per household differ only slightly among the three school districts. The factors shown in Table V-8 reflect existing conditions, and are used by the school districts in planning for new school sites, facilities and operations:

TABLE V-8A

SCHOOL CHILD GENERATION FACTORS FOR AFFECTED SCHOOL DISTRICTS

	Grades	
School District	K-8	9-12
Manteca Unified:	0.74	0.18
Banta Elementary	0.631[15]	
Tracy Unified		0.179

Each of the school districts imposes school impact fees upon new development to the maximum permitted by law, and derives additional school facility funding through Mello-Roos Districts. There currently is a provision of State Law which exempts bona fide senior citizen housing projects from participation in school financing through school impact fees. The types of senior citizen housing projects which may qualify for an exemption include individual housing units for citizens over the age of 55 [Civil Code Section 51.3], residential care facilities for the elderly at least 60 years of age [Health and Safety Code Section 1569.2, (k), a multi-level for the elderly at least 62 years of age [Government Code Section 15432, (d), (9), and a mobile hole park limited to older persons who quality under the Federal Fair Housing Amendments of 1988. Residences which cannot meet these standards typically are charged the regular per square foot fees for school impact allowed by law.

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15 This is a combined factor for grades K-6 and 7-8. The K-6 factor is 0.453 students per household while the 7-8 factor is 0.178.

Significance Criteria:

Continued classroom overcrowding, inadequate core facilities and limited ability to finance new school facilities will have a continuing significant effect on each affected school district. For Mossdale Village, the Specific Plan calls for two elementary schools and a possible site for a high school to serve the greater Lathrop area [Manteca Unified]. For Stewart Tract, 3-4 elementary schools will be required [Banta Elementary], with busing to Tracy High School. The number of elementary schools required for Stewart Tract will, in part, be a function of the number of total permanent housing units which are occupied by senior citizens without resident children.

Impacts:

[B] 1. Residential development for permanent residency of households with school age children within Mossdale Village and Stewart Tract will further exacerbate existing conditions of inadequate school capacity and operational financing. [**potentially significant**]

Mitigation Measures:

[B] 1.a. As residential development projects for permanent occupancy are proposed for Mossdale Village and Stewart Tract, school impact fees should be augmented by the creation of, or annexation to, a Mello-Roos District for the purpose of providing full mitigation for school impacts. As an alternative, a developer and school district may negotiate a mitigation fee based on the district's mitigation fee justification documents and the pro rata contribution to the need for capital facilities occasioned by the residential development project.

[B] 1.b. Where a residential project is large enough to encompass a school facility proposed by the West Lathrop Specific Plan, the developer shall work with the appropriate school district regarding the dedication of land and provision of infrastructure improvements required for the school facility in satisfaction of part or all of the pro rata share of school facility costs occasioned by the residential development project.

[B] 1.c. Where a residential project is large enough to generate the need for an entire school facility, school construction should be phased to match the phasing of residential construction, with the objective of assuring adequate facilities being available as close to the time of housing occupancy as possible.

[B] 1.d. Residential projects designed exclusively or dominantly for senior citizens and which meet the criteria for exemption under applicable State Law shall only pay the fee prescribed by State Law. Any future attempt or proposal to revise the status of a senior citizen housing project so that it is no longer restricted to senior citizens will trigger the need for participating in school financing in the same manner provided for other residential projects.

Effect of Mitigation Measures:

The inclusion of the above project mitigation measures will reduce all impacts related to schools described above to less than significant levels. These measures will ensure that residential development intended for permanent occupancy will be required to pay school impact fees as required by State Law and local school districts. To the extent that school impact fees do not offset a residential development project's pro rata contribution to the need for capital facilities, these measures ensure developer participation in other financing mechanisms to offset that contribution.

SAFETY AND HEALTH

This section deals with potential hazards to the health and safety of thousands of visitors expected daily on Stewart Tract, and how evacuation of sites can be accomplished and emergency services provided in the event of emergency conditions due to earthquake, fire, explosion or flood. Protection from hazards to lives and property to be provided through flood control, levee reconstruction, foundation engineering, protection of groundwater quality, solid and hazardous waste removal and other features of project design and regulation have been discussed adequately in previous sections of Part V and in Part IV of this report. It is to be noted that studies of Project acreage indicate that there are no known sites of hazardous wastes requiring remedial actions for waste removal.

Significance Criteria:

Thousands of people are expected almost daily on the Stewart Tract as visitors to theme parks and other large-scale commercial recreation attractions, and as residents. The principal criterion of significance is one of exposing such concentrations of people to hazards in case of a serious natural or man-caused disaster requiring immediate capability to provide safe ground, emergency medical care and evacuation.

Impacts:

[S] 1.a. Any natural or man-caused hazardous event poses a potential for jeopardizing lives during the first stages of the occurrence. A worst-case condition would be flooding caused by an earthquake-induced break in the levee(s) intended for flood protection of Stewart Tract. [**potentially significant**]

[S] 1.b. Fire, explosion and temporary scaffolding during phased project construction poses a threat to workers. The development of Stewart Tract in phases also will place visitors, theme park employees, residents, vendors and workmen at the site during construction. [**potentially significant**]

[S] 2. Automotive and boating emergencies can be expected requiring emergency response. [**potentially significant**]

3. The failure of equipment at theme parks and other recreation attractions poses a threat to visitors and employees. [**potentially significant**]

Mitigation Measures:

[S] 1. Stewart Tract development is to be graded so that the very large area within the loop arterial street system will be elevated above surrounding development sufficient to provide safe ground to accommodate all people needing temporary safety in the event of a flood.

[S] 1-3. An emergency response and evacuation plan is required prior to construction to protect and provide emergency aid to workmen during construction, and prior to opening commercial recreation attractions, lodging and housing facilities to public use. This response and evacuation plan shall be consistent with policies of the Hazard Management Element of the Lathrop General Plan pertaining to public safety.

Effect of Mitigation Measures:

The inclusion of the above project mitigation measures will reduce all impacts related to safety and public health described above to less than significant levels. These measures will ensure that a sufficient area of "safe ground" will be available on Stewart Tract to accommodate all people needing temporary safety from flooding, and by requiring an emergency response and evacuation plan to be available and operational prior to construction on Stewart Tract.

URBAN DESIGN/VISUAL QUALITY

As set forth on pp. IV-18 and -19 of Part IV, Project impacts associated with urban design and visual quality are fully mitigated by measures set forth in Specific Plan proposals. Further discussion is not required.

ARCHAEOLOGICAL AND CULTURAL RESOURCES

As set forth on pp. IV-19 and -20 of Part IV, Project impacts associated with archaeological and cultural resources are fully mitigated by measures set forth in Specific Plan proposals. Further discussion is not required.

RECREATION

This section deals solely with the proposals for a marina along the San Joaquin River on Stewart Tract in conjunction with a resort-hotel complex on 30 acres immediately west of the S.P. Railroad bridge. This marina would be created as an inlet from the river in an area where the river would effectively be widened by a set-back levee so as not to reduce the functional use of the existing river channel. The marina would have from 200 to 300 berths for year-round use by motor boats, sailboats, and small yachts.

Existing Conditions

There presently are two small private marinas within the planning area and one public boat ramp. These three facilities are located on either side of the I-5 crossing of the San Joaquin River. A second boat ramp is located several miles down-river at a County park. No other boating facilities can be found for several miles north (downstream) in the City of Stockton.

Significance Criteria

The proposed marina would have a significant effect on the environment if it resulted in any of the following:

1. Boating traffic in excess of the carrying-capacity of the existing San Joaquin River channel.
2. Adverse effects on water quality and the fishery of the River and its tributaries.
3. Adverse effects on riparian vegetation and other river-related wildlife habitat, including nesting sites of the endangered Swainson's Hawk and Elderberry Beetle.
4. Long-term adverse cumulative effects on the river environment.

Impacts and Mitigation Measures

The economic and environmental feasibility of the proposed marina development is too uncertain at this point to permit full environmental evaluation. Consequently, environmental analysis must be postponed until such time that a specific proposal is submitted for review to the City of Lathrop and to the various agencies of County, State and Federal government having a permitting responsibility for marina projects.

IMPACTS ON NEIGHBORING CITIES AND SAN JOAQUIN COUNTY

Existing Conditions

As shown on Figure III-1, the West Lathrop planning area is nestled among the cities of Stockton, Manteca and Tracy. Lathrop's east City Limit line is the western boundary of part of Manteca's sphere-of-influence; Lathrop's northern planning area boundary is the southern boundary of Stockton's sphere-of-influence; and the westerly boundary of the Stewart Tract is the easterly boundary of Tracy's planning area. Development occurring under the West Lathrop Specific Plan will have varying degrees of impact on the spheres of these cities and on the intervening unincorporated lands which are under the jurisdiction of San Joaquin County.

In responding to the Notice of Preparation issued by the City of Lathrop for this EIR, only the City of Tracy and the County responded with concerns for the effects which the West Lathrop Specific Plan might have on their jurisdictions and their plans for extending infrastructure to serve future urban development patterns, traffic added to the freeway system, and other impacts. In summary, the issues addressed by Tracy concerned: cumulative impacts on the I-205 corridor; the need for an expressway parallel to I-205; intended water supply and wastewater treatment; the impact on air quality; and, a financial plan and master infrastructure plan. All of these concerns are addressed in other sections of Parts IV and V of this EIR, and in the Specific Plan document.

In summary, the issues addressed by the County concerned: the need for a clear project description; assurance of a mechanism to distinguish between resort-related housing and permanent housing having an impact on schools; areas devoted to wildlife management and resource conservation; protection of unique, rare or endangered species of animals; the need for "worst case" analysis; exemptions to further environmental analysis; the need for separate as well as common approaches to mitigation in Mossdale Village and Stewart Tract; development phasing; assumptions to be used in traffic modeling; and road and transit improvements for interim and buildout scenarios. As with the Tracy requests, the County's concerns are addressed in other sections of Parts IV and V of this EIR and in the Specific Plan document published separately.

The discussion which follows relates to sphere boundaries and infrastructure planning.

Sphere-of-Influence Boundaries and Infrastructure Planning

The Stockton Interface:

Stockton's sphere of influence generally falls along Lathrop's northern Planning area boundary which lays just north of Bowman Road. Stockton has informed Lathrop of its intent to provide municipal water and sewerage service to this area over time, and has requested that Lathrop provide an agricultural belt between the future urban patterns of the two cities. Lathrop has honored this request in the proposed land use pattern of its General Plan. If additional urban expansion occurs in the future

(not now envisioned by the General Plan), it is anticipated that an agricultural open space corridor will be retained between the two cities.

An important proposal of the Lathrop General Plan and West Lathrop Specific Plan affecting Stockton's future is the need to extend the proposed Golden Valley Parkway as a parallel facility to Interstate 5 north to interchanges in the South Stockton area in order to preserve future I-5 traffic capacity for regional traffic demand. While the need may not exist for a decade or more, Lathrop, Stockton and San Joaquin County need to preserve the required right-of-way so that acquisition will be feasible as urban development occurs along the length of this proposed expressway that ultimately will have to extend south and westerly through Lathrop's planning area into the Tracy area.

The Manteca Interface:

The planning program that produced Manteca's current General Plan encompassed all of Lathrop and lands extending west to the San Joaquin River before Lathrop incorporated. This is evident from the background studies developed and published as part of Manteca's General Plan program. However, the final westerly boundaries of Manteca's General Plan diagram are generally along the north-south line of the Union Pacific Railroad extended south of the railroad's curve to the southwest, taking in Manteca's regional wastewater treatment plant.

At the on-set of Lathrop's General Plan Program, agreement was reached with the LAFCO Executive Officer that for "planning purposes", Lathrop's eastern planning area boundary would follow a north-south line following the Union Pacific tracks, and extending south from the point of the railroad curve toward Tracy and excluding Manteca's wastewater treatment plant property. More recently, the City of Manteca has amended its General Plan to include lands south of S.R. 120 and west of McKinley Avenue to the San Joaquin River, and has informed Lathrop of its intention to begin studies to have its sphere-of-influence boundary amended to reflect the General Plan amendment. Lathrop has since excluded lands for urbanization south of S.R. 120 and east of the Union Pacific Railroad and the San Joaquin River because of the adverse traffic impacts that would occur on S.R. 120 and I-5. Similar adverse traffic impacts may be revealed by Manteca's studies. In the last analysis, the San Joaquin County LAFCO will decide on the merits of this proposed addition to Manteca's sphere-of-influence.

The Tracy Interface:

The City of Tracy has already expanded its planning boundary to border Paradise Cut which forms the southwesterly boundary of Stewart Tract. Proposals of the Specific Plan which will most influence Tracy are added traffic on I-205, Gold Rush City commercial development and proposals for regional transit.

It is likely that the economic benefits of Gold Rush City on Tracy will be positive to the extent that several thousand permanent jobs will be created with an as yet undetermined number of those employees residing in Tracy. For those who would live in Tracy and work at Gold Rush City, they would improve upon the current imbalance in Tracy's jobs/housing condition. These employees would also bring to Tracy their incomes and expenditures for retail trade and services which would increase Tracy's overall tax revenues.

The traffic impacts of the proposed West Lathrop Specific Plan on the freeway system are described in considerable detail following this section. They include the beneficial aspects of mitigating freeway impacts through the construction of at least one expressway parallel to I-5 and I-205, the introduction of regional transit and the payment of mitigation fees for fair share contributions toward widening I-5,

I-205 and SR 120. As in the case of Stockton, there will be a need to extend the proposed Golden Valley Parkway westerly of Gold Rush City through Tracy's Planning area if any substantial new development is to occur north of I-205 within the Tracy Planning Area. This need will exist in the long run whether or not Gold Rush City develops.

TRANSPORTATION, CIRCULATION AND TRAFFIC

Existing Conditions: Existing conditions are described fully in Part III of this EIR.

Determination of Future Volume Projections

Project traffic conditions were analyzed for the three horizon years of 2005, 2017 and 2025, as requested by the City of Lathrop. These horizon years are marked by the following anticipated events:

2005 End of Phase I of Stewart Tract -- Mossdale Village +/- half-built.
2017 End of Stewart Tract Phase III -- Mossdale Village fully built.
2025 Project buildout -- Stewart Tract and Mossdale Village fully built.

Horizon year land use assumptions for the non-project sections of the City of Lathrop were developed by City Community Development staff in concert with the EIR economist. Project land use assumptions were developed by the Project applicant in concert with the City's Community Development Department. Expected attendance and staffing levels at Stewart Tract theme parks were provided by Economic Research Associates on behalf of the Project applicant.

Proposed horizon year Project freeway access and internal circulation plans were developed by the Project applicant, with input from both City and Caltrans staff. Horizon year traffic projections were developed for both with and without Project conditions with the assistance of a computerized traffic model (designated MINUTP). Traffic volumes were projected by the model for the following three time periods:

1. Weekday AM peak hour commute conditions (7:00 - 8:00 AM)
2. Weekday (Friday) PM peak hour commute conditions (4:00 - 5:00 PM)
3. Saturday AM peak hour traffic conditions (11:00 AM - Noon)

Commute time periods were selected for analysis as they currently experience the highest traffic levels on the Lathrop area freeways on weekdays. The Saturday 11:00 AM to Noon time period was selected for analysis as local area freeway volumes now typically peak during this hour. In addition, this is expected to be the peak hour for theme park visitor traffic on the local roadway system on a weekend. All four theme parks (i.e., Gold Rush City, Califia, Water Park and Wildlife Park) are expected to open at about 10:00 AM. The Water Park and Wildlife Park will close at about 7:00 PM, while the other two theme parks will close at about midnight.

The Lathrop peak hour traffic modeling effort was provided assistance through the use of future traffic modeling projections from the San Joaquin County Council of Governments (COG) regional traffic model. The COG MINUTP daily traffic model encompasses the Central San Joaquin Valley as well as the San Francisco Bay Area. Its projections for a given area reflect both local jurisdiction trip generation as well as regional through traffic.

COG daily model projections were developed for Base Case (i.e., without Project) and Base Case + Project conditions for the years 2005, 2010, and 2025. Year 2017 projections were obtained (with

COG staff concurrence) assuming straight line traffic growth from 2010 to 2025. Current peak hour to daily volume relationships and directional splits on the freeway passing through Lathrop (on I-5, State Route 120 and I-205) found in Caltrans historical traffic count data were then utilized to set volume levels to be matched by the Lathrop peak hour traffic model at key locations providing access to the study area.

Minimal (less than 3%) use of transit was assumed by regional drivers for each horizon year. Trip generation reductions of 10% to more than 40% were projected for some land uses on Stewart Tract due to the availability of shuttle buses, water taxis and chairlifts, as well as the close proximity of theme parks to all on-island recreational lodging units. All units are within less than a mile of a theme park. A technical appendix on file with the City of Lathrop provides extended detail regarding the traffic modeling process for the West Lathrop Specific Plan.

Significance Criteria

The following criteria were utilized to determine Base Case and Base Case + Project traffic operation and the significance of Project traffic impacts:

1. **Signalized Intersections:** An impact is significant if:

   a. An intersection operating at LOS (Level of Service) A through D changes to E or F; or
   b A Base Case LOS E or F has its associated volume to capacity (V/C) ratio changed by 1% or more.

2. **All-Way Stop Intersections:** An impact is significant if:

   a. An intersection operating at LOS A through D changes to E or F;
   b. A Base Case LOS E or F has its associated V/C ratio changed by 1% or more as determined using TRB Circular 373 methodology (an increase in intersection average delay of half a second or more).
   c. Volumes are increased above peak hour signal warrant criteria levels.

3. **Side Street Stop Sign Controlled Intersections:** An impact is significant if:

   a. An intersection movement operating at LOS A through E changes to F, and more than 20 vehicles make this turn movement during the analyzed peak hour.
   b. A Base Case LOS F has its associated V/C ratio changes by 1% or more as determined using 1985 HCM methodology (a change of 10 or more vehicles in reserve capacity); or
   c. Volumes are increased above peak hour signal warrant criteria levels.

4. **Freeways:** An impact is significant if:

   a. A freeway segment operating at LOS A through D changes to E or F; or
   b. A Base Case LOS E or F has its associated V/C ratio changes by 1% or more using a freeway lane capacity of 1,850 passenger cars per hour per lane (PCPHPL) for LOS D operation and 2,000 PCPHPL for LOS E operation.

5. **Surface Streets:** An impact is significant if:

   a. A roadway segment operating at LOS A through D changes to E or F; or
   b. A Base Case LOS E or F has its associated V/C ratio changed by 1% or more.

6. **Safety Issues:** An impact is significant if, in the opinion of the registered traffic engineer conducting the EIR traffic analysis, a significant safety concern would be created.

Surface street roadway capacities used for impact evaluation are as shown below in Table V-8:

TABLE V-8B

SURFACE STREET ROADWAY CAPACITIES USED FOR IMPACT EVALUATION*

Traffic Facility	Vehicles Per Lane Per Hour	
	LOS D	LOS E
Expressway	1,080	1,200
Arterial - no parking or driveways	810	900
Arterial - with parking or drivew's	675	750

* Source: Comprehensive General Plan, City of Lathrop, December, 1991

Year 2005 Impacts and Mitigation Measures

Base Case (without Project) Conditions:

Figure V-3 presents year 2005 Base Case (without Project) volumes for weekday PM peak hour conditions. AM and Saturday peak volumes are presented in the Technical Appendix (T-1 and T-2). The Base Case roadway/freeway system assumed in operation for this horizon year is presented in the Technical Appendix (T-3). No improvements were assumed to the Lathrop freeway system with the exception of the completion of S.R. 120 widening to four lanes east of I-5, and the full widening of I-205 to six lanes from I-5 west to I-580. Although Caltrans' current funding program shows only the western half of I-205 being widened to six lanes before 2005, COG modeling staff indicated that there will be such a demand for east-west travel in the region by that date that realistic modeling projections could not be developed unless a full six lane I-205 freeway was assumed to be in place. Improvements to the existing Lathrop non-freeway circulation system, as shown in Technical Appendix T-3, have been assumed in place (financed by local development) as they provide acceptable circulation system operation for Base Case volumes and a base against which to evaluate impacts due to Project traffic. [It should be noted that revisions to the Mossdale interchange as proposed by the Project applicant have been assumed in place for base case conditions in order for the EIR analysis to present a clear picture of the "without" v. "with" Project volume change implications due to the Project in this area.

Figure V-4 presents locations with unacceptable freeway operation with year 2005 Base Case volumes for weekday PM peak hour conditions. AM and Saturday peak hour Base Case freeway operating conditions are presented in the Technical Appendix (T-4 and T-5).

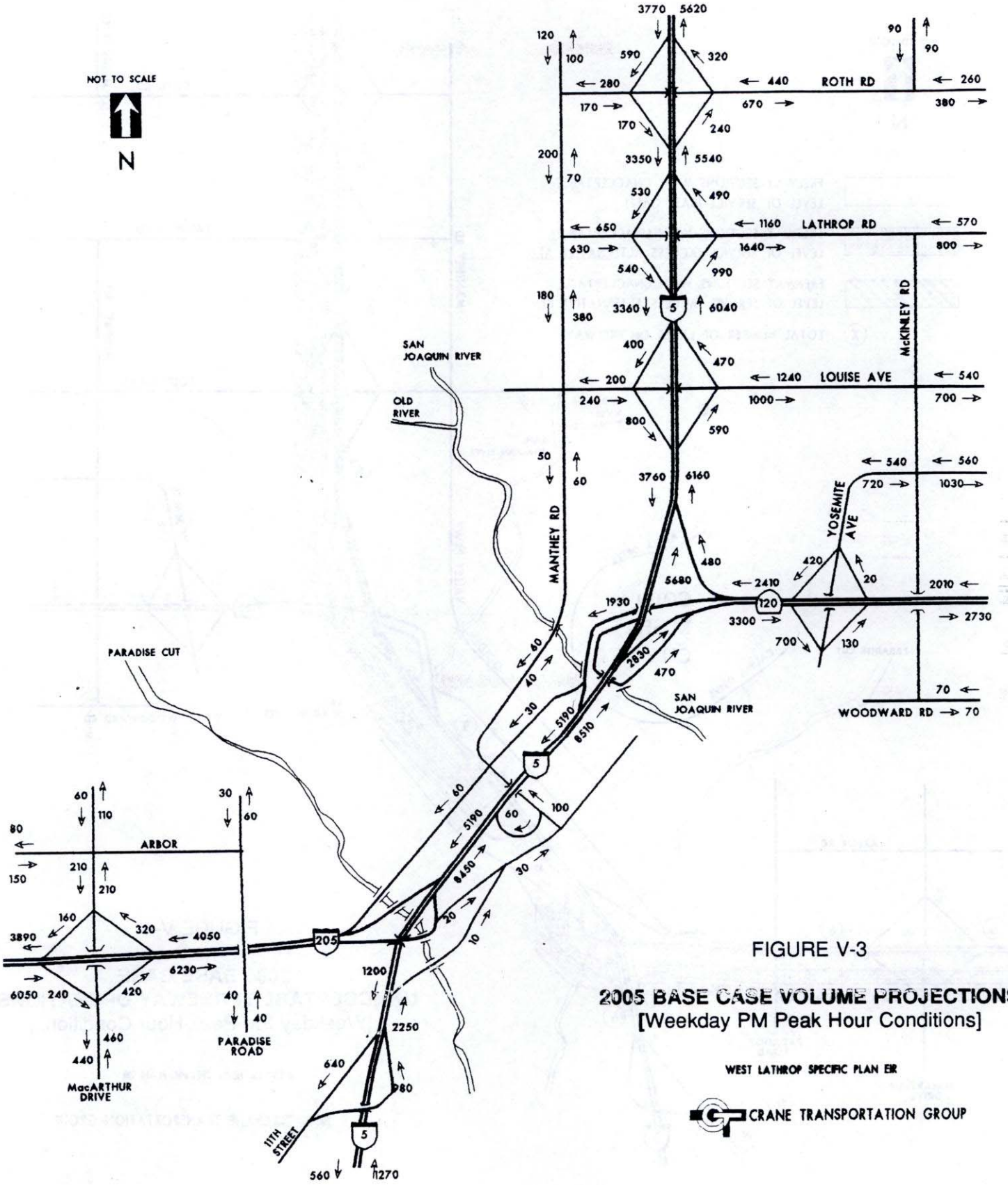


FIGURE V-3

2005 BASE CASE VOLUME PROJECTIONS
[Weekday PM Peak Hour Conditions]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

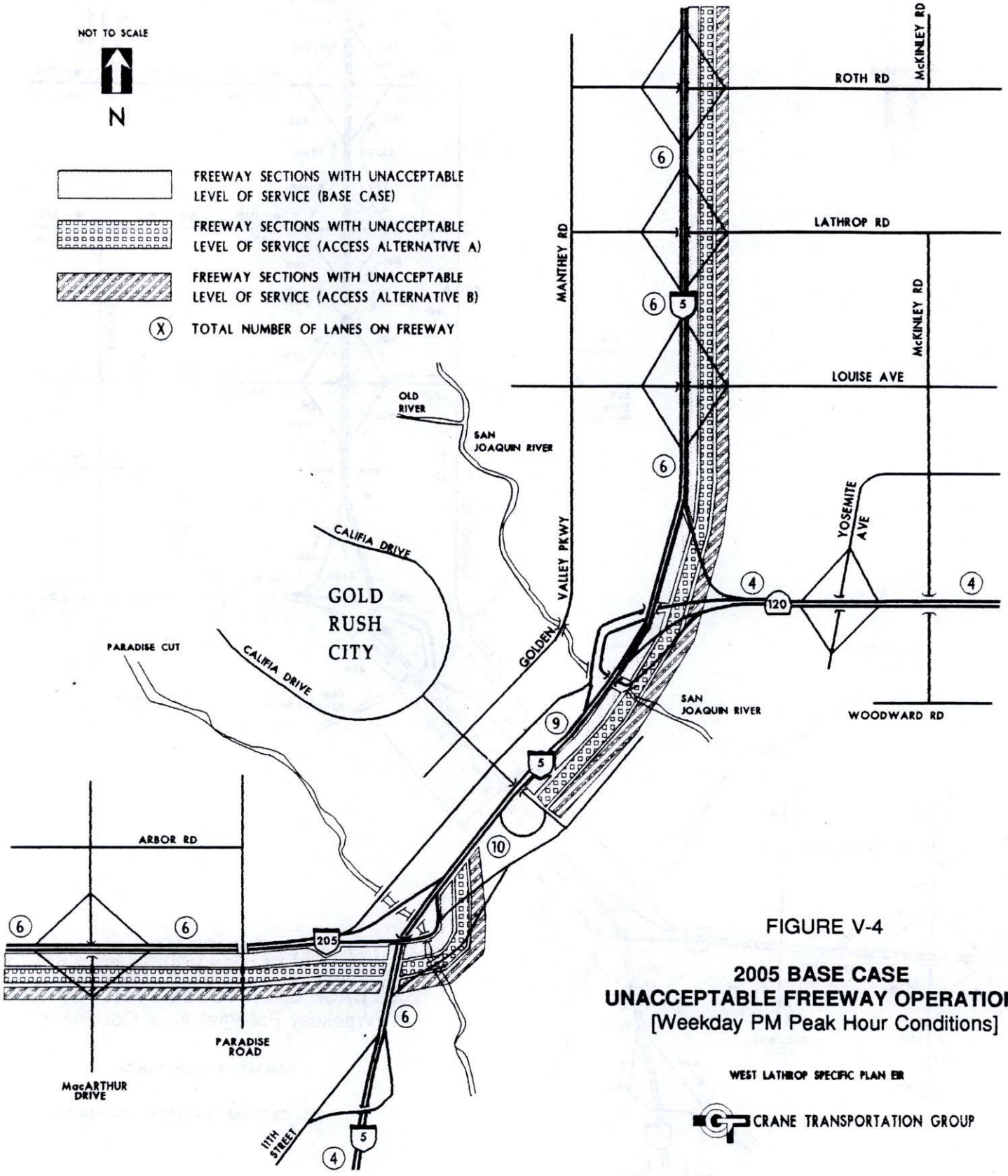


FIGURE V-4

2005 BASE CASE
UNACCEPTABLE FREEWAY OPERATIONS
[Weekday PM Peak Hour Conditions]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

From Figure IV-4, Base Case volumes are only expected to produce unacceptable operation during the weekday PM peak hour on eastbound I-205, and on northbound I-5 from just north of the I-205 merge to north of Roth Road.

Table V-9 shows that ramp intersections at the Louise Avenue interchange and at the Louise/Manthey Road-Golden Valley Parkway intersection would all be operating at acceptable levels of service with Base Case weekday and Saturday peak hour volumes. As previously indicated, the number of midblock surface street lanes (see Technical Appendix T-3) would provide acceptable levels of service for all peak time periods.

Base Case + Project Conditions:

Analysis results are presented for Project Access Alternative A. Alternative A access to Stewart Tract would be provided by a partial interchange with the I-205/I-5/SR 120 freeways at their common merge area, as well as by the provision of a new expressway (Golden Valley Parkway) south from Louise Avenue into the eastern section of the development via a new bridge across the San Joaquin River. The new partial interchange (referenced as the Mossdale interchange) would replace the existing hook ramps now in place along I-5 between SR 120 and I-205.

The new Mossdale interchange would have the following ramp connections:

Eastbound:	I-205 off-ramp to Mossdale Boulevard (just south of the I-205 merge to I-5).
Westbound:	S.R. 120 off-ramp to Mossdale Blvd. (just north of the S.R. 120 merge to I-5)
Westbound:	On-ramp to I-205 (just west of I-5).
Northbound:	On-ramp to I-5 (just south of the San Joaquin River bridge allowing access to eastbound S.R. 120 and northbound I-5).
Northbound:	1-5 off-ramp to Mossdale Boulevard (just south of I-205).

The following ramp connections would not be provided as part of the new interchange:

I-5 southbound on-ramp.
I-5 southbound off-ramp.

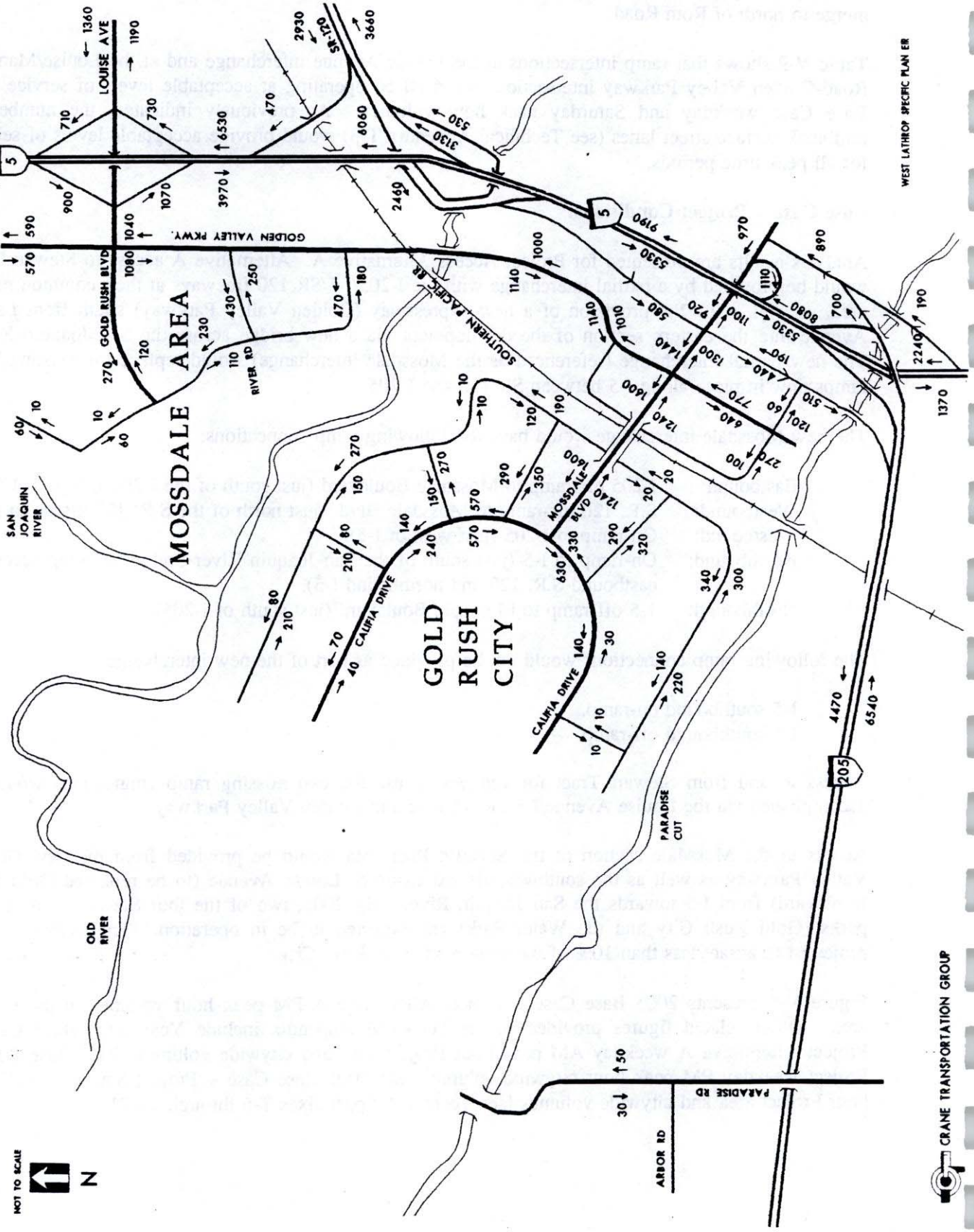
Access to and from Stewart Tract for vehicles to use the two missing ramp connections would be accomplished via the Louise Avenue/I-5 interchange and Golden Valley Parkway.

Access to the Mossdale section of the Specific Plan area would be provided from the new Golden Valley Parkway as well as the southwesterly extension of Louise Avenue (to be renamed Gold Rush Boulevard) from I-5 towards the San Joaquin River. By 2005, two of the four Stewart Tract theme parks (Gold Rush City and the Water Park) are expected to be in operation. The Water Park is projected to attract less than 10% of the visitors to Gold Rush City.

Figure V-5 presents 2005 Base Case + Project Alternative A PM peak hour volumes in the Project area. Other related figures provided in the Technical Appendix include Year 2005 Base Case + Project Alternative A weekday AM peak hour Project area and citywide volumes, 2005 Base Case + Project weekday PM peak hour citywide volumes, and 2005 Base Case + Project Saturday AM peak hour Project area and citywide volumes [see Technical Appendixes T-6 through T-10].

FIGURE V-5

2005 BASE CASE + PROJECT ALTERNATIVE A
[Weekday PM Peak Hour Conditions]



As part of Project development, a 1,500 space park-and-ride lot and a 1,000 space BART Express Bus/transit station lot would be provided between the I-5/I-205 merge and the Southern Pacific Railroad in close proximity to the new Mossdale interchange. These lots are expected to be used primarily by westbound commuters to the Bay Area during the weekday AM peak hour traffic, and by eastbound commuters returning home during the PM peak hour the same day. Net reductions in both westbound and eastbound peak hour traffic would be expected due to these lots as additional spaces are provided in phases. Weekday use of these lots by commuters would be replaced on weekends by overflow parking for the theme parks.

Impact 1: The proposed Mossdale interchange design does not meet Caltrans or Federal Highway Administration (FHWA) design criteria.[16] The criteria include minimum interchange spacing between freeway-to-freeway interchanges and new surface street interchanges are required to be two miles in rural areas and one mile in urban areas; new interchanges not providing connections to all freeway travel directions are avoided, as are surface street ramp connections to freeway-to-freeway connections. [**significant**]

Mitigation 1: Provide all Project access in the year 2005 via the Louise Avenue interchange (Access B Alternative). This would require Stage II Project Study Report (PSR) improvements for the interchange (plus an additional southbound off-ramp) in order to adequately serve all 2005 Project traffic. Access Alternative B PM peak hour Project area volumes are presented in Figure A-1 of the Technical Appendix. Other Alternative B volumes are provided in sections T-11 through T-15 of the Technical Appendix.

Impact 2: Project area traffic would result in unacceptable freeway operation along the following freeway segments (above and beyond Base Case conditions), as follows: [**significant**]

a. For the weekday PM peak hour, Project traffic would increase V/C ratios by more than 1% on all freeway segments experiencing unacceptable operations with Base Case traffic.
b. For the Saturday AM peak hour, eastbound I-205 operations would be unacceptable from west of the MacArthur Drive interchange to the new off-ramp serving Stewart Tract; and northbound I-5 operations would be unacceptable from the proposed Mossdale loop on-ramp to the I-5/SR 120 diverge at the San Joaquin River.

Mitigation 2: The following freeway widening would be required to provide acceptable freeway operation for Base Case (without Project) traffic conditions:

a. Widen I-205 to eight lanes.
b. Widen I-5 northbound (I-205 to SR 120) to 5 lanes across the San Joaquin River.
c. Widen I-5 north of SR 120 to 8 lanes.

The above improvements currently are not programmed by Caltrans, nor does Caltrans have available funding for these improvements. It is therefore imperative that realistic regional fees or other appropriate levies be imposed to provide these improvements, or to provide alternate means of travel. Other approaches would include financial incentives to take transit, if available, or to carpool, or financial disincentives such as a high gasoline tax or tolls to cross Altamont Pass would decrease dependence on the automobile.

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[16] Design criteria are published in the **Caltrans Highway Design Manual, February 13, 1995 Guidelines.**

TABLE V-9

YEAR 2005 INTERSECTION LEVEL OF SERVICE

(Signalized Operation Unless Otherwise Noted)

BASE CASE (WITHOUT PROJECT)

Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour
Louise Avenue/I-5 Northbound Ramps[1]	A - .64[2]	D - .82	C - .74
Louise Avenue/I-5 Southbound Ramps	A - .53[2]	C/D - .80	B - .61
Louise/Manthey (unsignalized), Louise stop sign controlled	A[3]	B	A

WITH PROJECT -- ACCESS ALTERNATIVE A (WITH MOSSDALE INTERCHANGE)

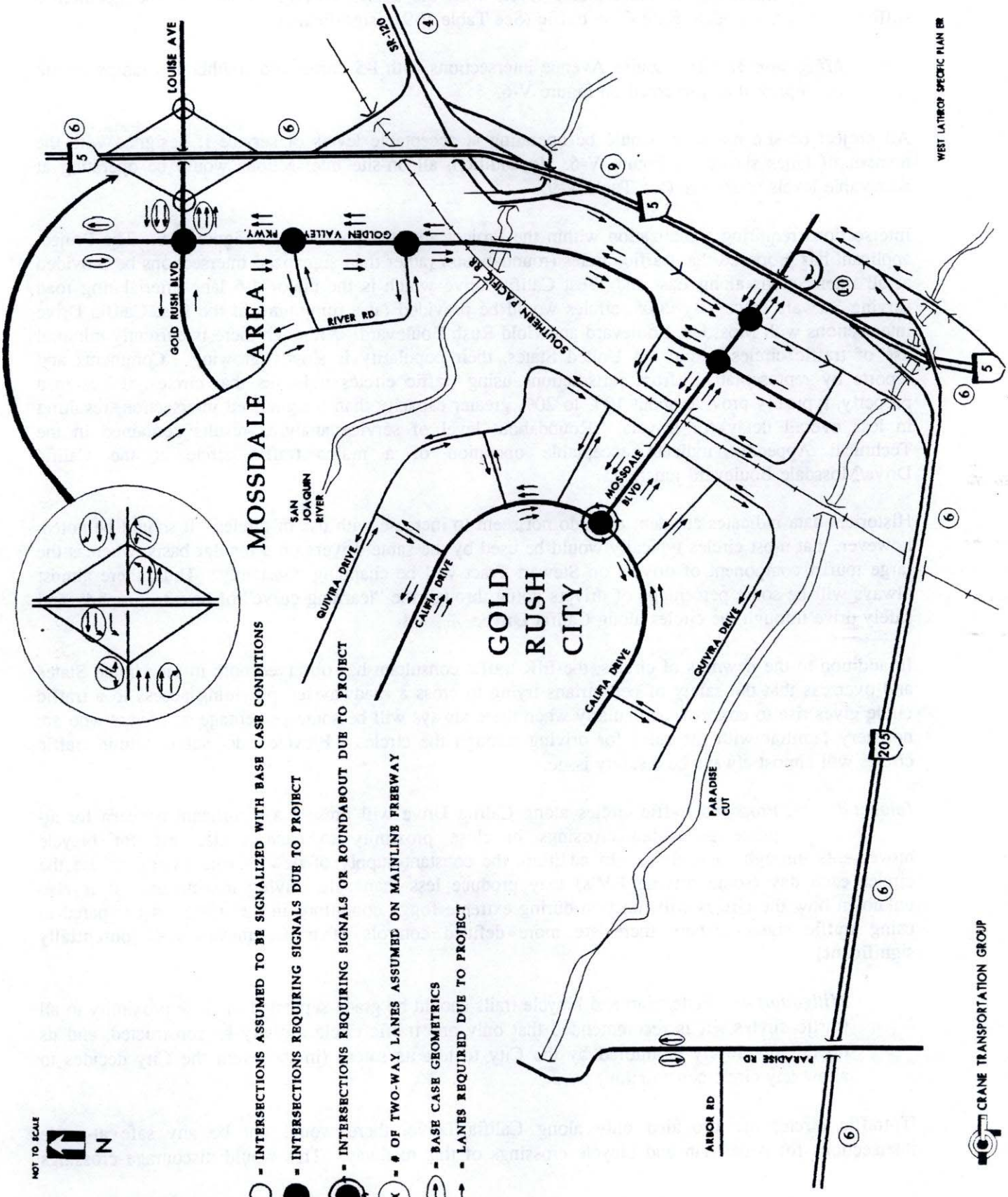
Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour
Louise Avenue/I-5 Northbound Ramps	(B/C - .70)[4] A - .48[5]	(F - 1.09)[4] D - .83[5]	(E - .95)[4] B - .67[5]
Louise Avenue/I-5 Southbound Ramps	(B - .69)[4] A - .59[5]	(E/F - 1.00)[4] C - .79[5]	(C - .76)[4] B - .65[5]
GOLD RUSH CITY INTERSECTIONS			
I-205 Eastbound/I-5 Northbound Off-Ramp/ Mossdale Boulevard[6]	A - .15	A - .37	A - .43
S.R. 120 Westbound (Southbound) Off-Ramp/ Mossdale Boulevard[6]	A - .46	C - .72	B/C - .70
Golden Valley Parkway/Mossdale Boulevard[6]	A - .46	D - .87	D - .81
Mossdale Boulevard/East Califia Drive[6]	B - .61	C - .79	D - .85
MOSSDALE AREA INTERSECTIONS			
Gold Rush Boulevard/Golden Valley Parkway[6]	A - .58	C - .77	C - .71

[1] Level of Service - Volume/Capacity Ratio (TRB Circular 212)
[2] With improved geometrics to provide acceptable levels of service (see Figure V-6)
[3] Level of service for stop sign controlled left turn from Louise Avenue
[4] Level of service with Base Case geometrics (see Figure V-6)
[5] Mitigated (see Figure V-6)
[6] New intersection

Source: Crane Transportation Group

FIGURE V-6

2005 PROJECT ALTERNATIVE A, SIGNAL REQUIREMENTS, INTERCHANGE IMPROVEMENTS AND LANE REQUIREMENTS



Impact 3: The Louise Avenue intersections with I-5 north- and southbound ramps would both be operating at unacceptable levels with the addition of Project traffic and geometrics sufficient to accommodate Base Case traffic (See Table V-9). [**significant**]

> ***Mitigation 3:*** The Louise Avenue intersections with I-5 north- and southbound ramps should be improved as presented on Figure V-6.

All project on-site roadways would be operating at acceptable levels of service if designed with the number of lanes shown on Figure V-6. In addition, all on-site intersections would be operating at acceptable levels of service (see Table V-9).

Intersections requiring signalization within the Project area are presented in Figure V-6. The Project applicant has proposed that traffic circles (roundabouts) rather than signalized intersections be provided at all intersections along East and West Califia Drive which is the major 4-6 lane arterial ring road serving Stewart Tract. By 2005, circles would be provided (at a minimum) at the East Califia Drive intersections with Mossdale Boulevard and Gold Rush Boulevard. Although there is currently minimal use of traffic circles within the United States, their popularity is slowly growing. Comments and reports by representatives from jurisdictions using traffic circles indicates that circles, if designed properly, typically provide about 10% to 20% greater capacity than a signalized intersection, resulting in less overall delay for drivers. Roundabout level of service analyses results contained in the Technical Appendix indicate acceptable operation of a major traffic circle at the Califia Drive/Mossdale Boulevard junction.

Historical data indicates accident rates do not seem to increase with use of circles. It should be noted, however, that most circles typically would be used by the same drivers on a regular basis, whereas the large tourist component of drivers on Stewart Tract will be changing constantly. Thus, there almost always will be some percentage of drivers going through the "learning curve" of how to properly and safely drive through the circles along Califia Drive.

In addition to the newness of circles, the EIR traffic consultant has observed both in the United States and overseas that the safety of pedestrians trying to cross a roadway leg providing access to a traffic circle gives rise to concern, particularly when there always will be some percentage of drivers who are not very familiar with the rules for driving through the circles. Bicycle rider safety within traffic circles will almost always be a safety issue.

Impact 4: Proposed traffic circles along Califia Drive will present a significant concern for at-grade pedestrian crossings in close proximity to each circle, and for bicycle movements through each circle. In addition, the constant supply of new drivers having to use the circles each day (some driving RV's) may produce less than safe driving maneuvers. It is also unknown how the circles will function during extreme foggy conditions in the winter as compared to using traffic signals where there are more defined controls of traffic movements. [**potentially significant**]

> ***Mitigation 4:*** Pedestrian and bicycle trails should be grade separated in close proximity to all traffic circles. It is recommended that only one traffic circle initially be constructed, and its operations closely monitored by the City to test its safety (in the event the City decides to allow any circle construction).

If traffic circles are provided only along Califia Drive, there would not be any safe at-grade intersections for pedestrian and bicycle crossings of this roadway. This would discourage crossings

along the ring road, or at a minimum create a danger. Pedestrian access to the shuttle bus system along the ring road would also be discouraged if there are no safe pedestrian crossings.

Impact 5: No safe pedestrian or bicycle trail crossings of East and West Califia Drive are detailed in the Specific Plan document, assuming that traffic circles are to be provided along this ring roadway. [**significant**]

> ***Mitigation 5:*** Provide a significant number of grade separated pedestrian, bicycle and golf cart crossings of both East and West Califia Drive, either individually or in combination with signalized intersections.

Year 2017 Impacts and Mitigation Measures

Base Case (without Project) Conditions:

Figure V-7 presents a 2017 Base Case (without Project) volumes for weekday PM peak hour conditions. Weekday AM and Saturday AM peak hour volumes are presented in the Technical Appendix (Sections T-16 and -17). The Base Case roadway/freeway system assumed in operation for this horizon year is presented in Technical Appendix section T-18. Improvements assumed for the Lathrop area freeway system for 2017 are the completion of SR 120 widening to four lanes to the east of I-5, and the full widening of I-205 to six lanes from I-5 to I-580 west of Tracy.

Improvements to Lathrop's surface roadway system as presented in Technical Appendix section T-18 have been assumed to be in place. Financed by local development, these roadways would, with one exception, provide acceptable circulation system operation for the Base Case volumes and a base against which to evaluate impacts due to Project traffic. The one exception is PM peak hour operation along Lathrop Road, from Harlan Road east to Fifth Street. If maintained as a 4-lane Arterial, this road segment would be operating unacceptably at LOS E or F conditions. During weekday AM peak hour and Saturday AM peak hour conditions, Lathrop Road just east of Harlan Road would also be on the border of unacceptable operation if maintained as a 4-lane facility.

Figure V-8 presents locations with unacceptable freeway operation with year 2017 Base Case volumes for weekday PM peak hour conditions. Weekday AM and Saturday AM peak hour locations with unacceptable freeway operation are presented in the Technical Appendix (T-19 and -20). From the Figure, Base Case volumes are expected to produce unacceptable operation on numerous segments of I-205, I-5 and SR 120 during all three peak time periods. Predominantly west- and southbound traffic flows would be at unacceptable levels during the weekday AM peak hour, with eastbound and northbound flows at acceptable levels during the weekday PM peak and Saturday AM peak traffic hours.

Table V-10 shows that ramp intersections at the Louise Avenue interchange as well as the Louise/Manthey Road-Golden Valley Parkway intersection would all be operating at acceptable levels of service with Base Case weekday and Saturday peak hour volumes.

Base Case + Project Conditions:

Analysis results are presented for Project access alternatives A and B. Alternative A (Project as proposed) access to Stewart Tract would be provided by the "partial" Mossdale interchange with I-5/I-205 and SR 120, a 4-lane Paradise Road extending northerly from a new interchange with I-205 into the western end of Stewart Tract, Golden Valley Parkway extended south from Louise Avenue (Gold

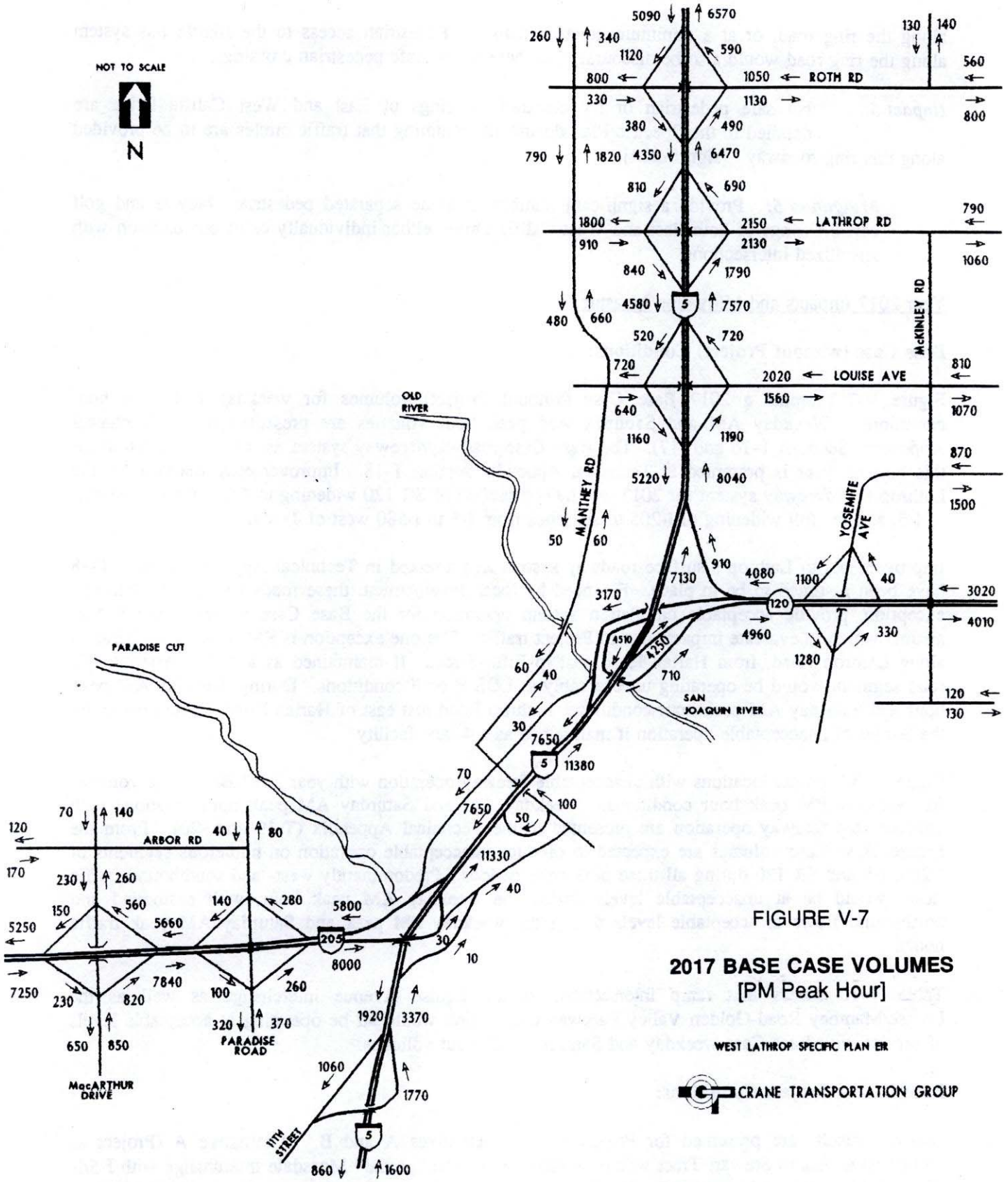


FIGURE V-7

2017 BASE CASE VOLUMES
[PM Peak Hour]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

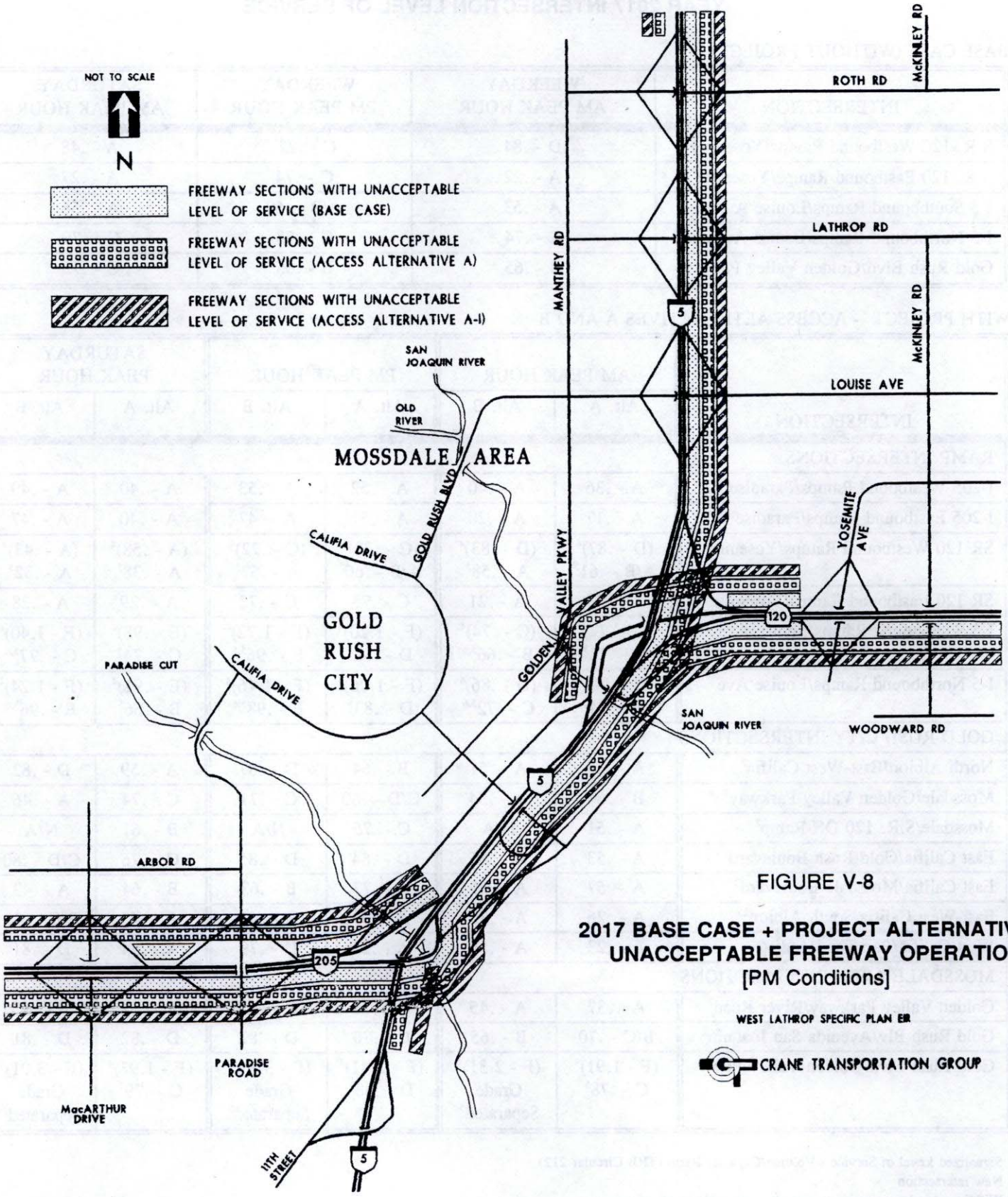


FIGURE V-8

2017 BASE CASE + PROJECT ALTERNATIVE A
UNACCEPTABLE FREEWAY OPERATION
[PM Conditions]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

TABLE V-10

YEAR 2017 INTERSECTION LEVEL OF SERVICE

BASE CASE (WITHOUT PROJECT)

INTERSECTION	WEEKDAY AM PEAK HOUR	WEEKDAY PM PEAK HOUR	SATURDAY AM PEAK HOUR
S.R. 120 Westbound Ramps/Yosemite	D - .84	C - .72[1]	A - .48
S.R. 120 Eastbound Ramps/Yosemite	A - .22	C - .74	A - .27
I-5 Southbound Ramps/Louise Avenue	A - .53	A/B - .60	A - .56
I-5 Northbound Ramps/Louise Avenue	C - .74	C - .78	C - .79
Gold Rush Blvd/Golden Valley Parkway	B - .65	B - .65	C - .75

WITH PROJECT -- ACCESS ALTERNATIVES A AND B

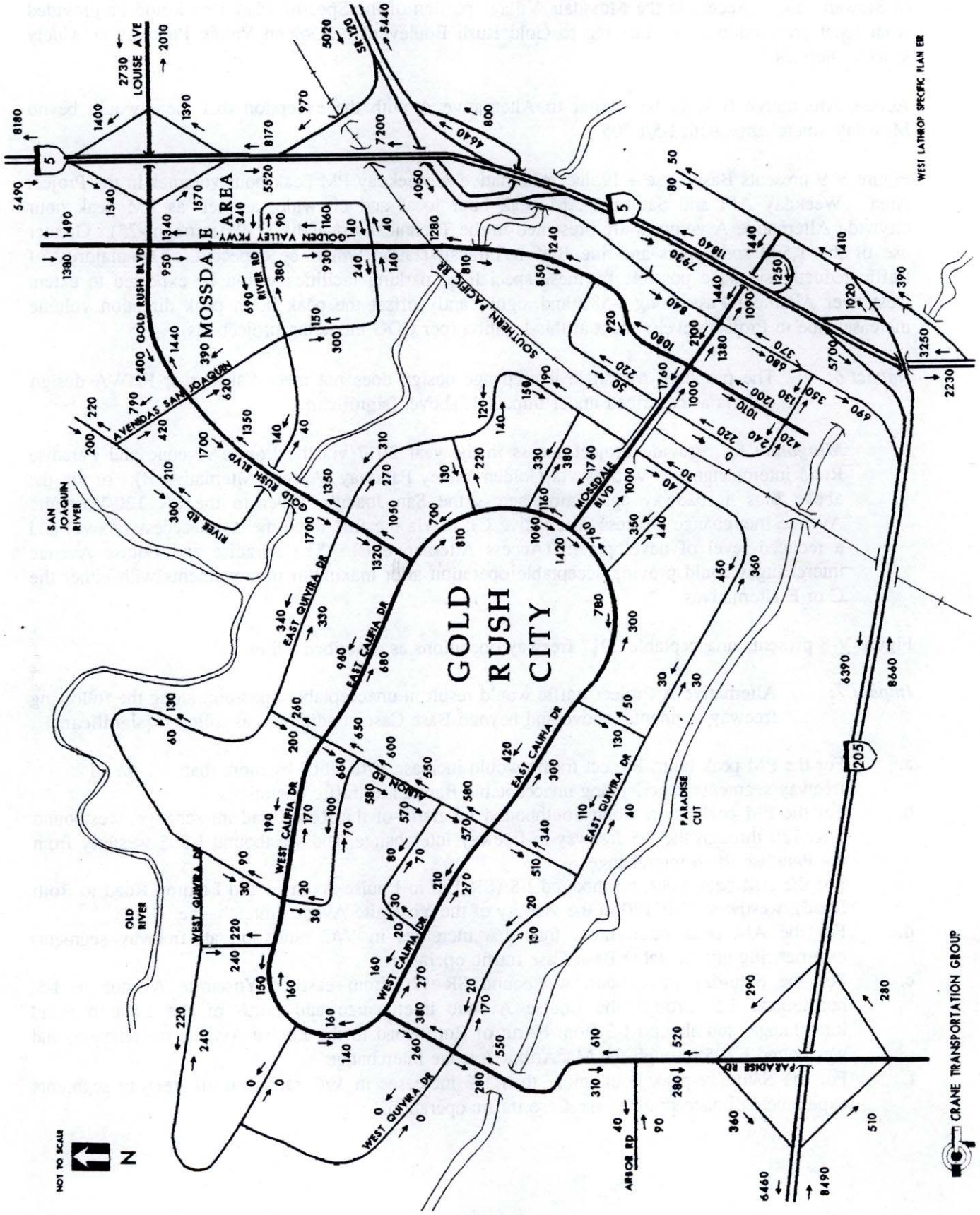
INTERSECTION	AM PEAK HOUR		PM PEAK HOUR		SATURDAY PEAK HOUR	
	Alt. A	Alt. B	Alt. A	Alt. B	Alt. A	Alt. B
RAMP INTERSECTIONS						
I-205 Westbound Ramps/Paradise Rd[2]	A - .36	A - .40	A - .52	A - .53	A - .40	A - .49
I-205 Eastbound Ramps/Paradise Rd[2]	A - .17	A - .20	A - .51	A - .47	A - .40	A - .47
SR 120 Westbound Ramps/Yosemite	(D - .87)[4] A/B - .61[5]	(D - .83)[4] A - .58[5]	(C - .78)[4] A/B - .60[5]	(C - .72)[4] A - .57[5]	(A - .58)[4] A - .38[5]	(A - .43)[4] A - .32[5]
SR 120 Eastbound Ramps/Yosemite	A - .23	A - .21	C - .73	C - .72	A - .29	A - .28
I-5 Southbound Ramps/Louise Ave	(C - .72)[4] C - .72[5]	(C - .74)[4] B - .66[5,6]	(F - 1.20)[4] D - .88[5]	(F - 1.72)[4] E - .96[5,6]	(E - .98)[4] C - .74[5]	(F - 1.40)[4] C - .77[5,6]
I-5 Northbound Ramps/Louise Ave	(E - .90)[4] A - .54[5]	(D - .86)[4] C - .72[5,6]	(F - 1.06)[4] D - .83[5]	(F - 1.46)[4] E - .98[5,6]	(E - .91)[4] B - .66[5]	(F - 1.24)[4] E - .96[5,6]
GOLD RUSH CITY INTERSECTIONS						
North Albion/East-West Califia[2]	A - .35	A - .51	B - .64	D - .87	A - .59	D - .82
Mossdale/Golden Valley Parkway[2]	B - .64	A - .34	C/D - .80	C - .71	C - .74	A - .46
Mossdale/S.R. 120 Off-Ramp[2]	A - .51	N/A	C - .75	N/A	B - .61	N/A
East Califia/Gold Rush Boulevard[2]	A - .53	A - .55	D - .84	D - .85	C - .76	C/D - .80
East Califia/Mossdale Boulevard[2]	A - .57	A - .29	C - .77	B - .63	B - .64	A - .43
East-West Califia/South Albion[2]	A - .26	A - .35	A - .59	B - .61	A - .45	B/C - .70
West Califia/Paradise Road[2]	A - .23	A - .54	A - .25	C - .79	A - .34	D - .81
MOSSDALE AREA INTERSECTIONS						
Golden Valley Parkway/River Road[2]	A - .37	A - .45	C - .73	C - .77	A - .53	B - .62
Gold Rush Blv/Avenida San Joaquin[2]	B/C - .70	B - .65	C - .76	D - .82	D - .82	D - .81
Gold Rush Blvd/Golden Valley Pkwy	(F - 1.91)[4] C - .78[5]	(F - 2.31)[4] Grade Separated[5]	(F - 2.41)[4] D - .88[5]	(F - 3.39)[4] Grade Separated[5]	(F - 1.97)[4] C - .79[5]	(F - 3.01)[4] Grade Separated[5]

[1] Signalized Level of Service - Volume/Capacity Ratio (TRB Circular 212)
[2] New intersection
[3] With improved geometrics to provide acceptable levels of service
[4] Level of service with Base Case geometrics
[5] Mitigated by project
[6] Mitigation includes loop on-ramps

Source: Crane Transportation Group

FIGURE V-9

2017 BASE CASE + PROJECT ALTERNATIVE A VOLUMES
[PM Peak Hour Conditions]



Rush Boulevard) into the eastern part of Stewart Tract, and Gold Rush Boulevard extended southwesterly from the Louise Avenue interchange across the San Joaquin River onto the central part of Stewart Tract. Access to the Mossdale Village portion of the Specific Plan area would be provided from local area roadways connecting to Gold Rush Boulevard or Golden Valley Parkway at widely spaced intervals.

Access Alternative B wold be similar to Alternative A with the exception that there would be no Mossdale interchange with I-5/I-205.

Figure V-9 presents Base Case + Project Alternative A weekday PM peak hour volumes in the Project Area. Weekday AM and Saturday AM peak hour local and citywide, as well as PM peak hour citywide Alternative A volumes are presented in the Technical Appendix (T-21 through -25). Greater use of the 1,500 space park-and-ride Bart bus/transit station would be expected. The majority of traffic reductions made possible by these specialized parking facilities would be expected to extent west over Altamont Pass along I-580 and significantly offset the peak hour, peak direction volume increases due to Project development at this location (per COG modeling projections).

Impact 6: The proposed Mossdale interchange design does not meet Caltrans or FHWA design criteria as described under Impact 1, above. [**significant**]

Mitigation 6: Provide Project access in the year 2017 via the Louise Avenue and Paradise Road interchanges, as well as via Golden Valley Parkway (Access Alternative B); or via the above plus a roadway connection across the San Joaquin River to the SR 120/Yosemite Avenue interchange (Access Alternative C); or via the first three means of access (above) and a reduced level of development (Access Alternative E). The Paradise and Louise Avenue interchanges could provide acceptable operation after maximum improvements with either the C or E alternatives.

Figure V-8 presents unacceptable 2017 freeway operations as described below.

Impact 7: Alternative A Project traffic would result in unacceptable operation along the following freeway segments (above and beyond Base Case conditions), as follows: [**significant**]

a. For the PM peak hour, Project traffic would increase V/C ratios by more than 1% on all freeway segments experiencing unacceptable Base Case traffic operations.
b. For the PM peak hour, along Southbound I-5 north of the Roth Road interchange, westbound S.R, 120 through the I-5 freeway-to-freeway interchange, and westbound I-205 westerly from the Paradise Road interchange.
c. For the AM peak hour, northbound I-5 (SR 120 to Louise Avenue, and Lathrop Road to Roth Road), westbound SR 120 in the vicinity of the Yosemite Avenue interchange.
d. For the AM peak hour, more than 1% increases in V/C ratios on all freeway segments experiencing unacceptable Base Case traffic operations.
e. For the Saturday peak hour, westbound SR 120 from east of Yosemite Avenue to I-5, northbound I-5 through the Louise Avenue interchange and north of the Lathrop Road interchange, southbound I-5 from North of Roth Road to the Louise Avenue interchange, and westbound I-205 through the MacArthur Avenue interchange.
f. For the Saturday peak hour, more than 1% increases in V/C ratios on all freeway segments experiencing unacceptable Base Case traffic operation.

Mitigation 7: The following freeway widening would be required to provide acceptable freeway operation for 2017 Base Case (without Project) traffic conditions:

a. Widen I-205 (extending west of MacArthur Drive) to 8 lanes.
b. Widen I-205 (from MacArthur Drive to I-5) to 10 lanes.
c. Widen I-5 (from SR 120 to Lathrop Road) to 10 lanes.
d. Widen I-5 (from Lathrop Road to north of Roth Road) to 8 lanes.
e. Widen I-5 (from SR 120 to I-205) to 14 lanes.
f. Widen SR 120 (east of I-5) to 6 lanes.

None of the above widenings are programmed by Caltrans, nor is funding currently available or projected to be available for these improvements. Therefore, it is imperative that realistic regional impact fees or levies be imposed to provide these improvements **or** to provide alternative means of travel. As in the case for 2005 improvements, financial incentives and disincentives imposed during commute periods would decrease dependence on the automobile.

Improvements for Base Case conditions would also provide acceptable peak hour operation for Base Case + Project traffic at all locations, with the following exceptions:

g. I-205 west of MacArthur Drive would require additional widening to 10 lanes.
h. I-5 north of Roth Road would require widening to 10 lanes.

The project should contribute its appropriate fair-share of regional traffic improvement mitigation fees toward regional freeway improvements.

A TDM program should be established to promote and require all project businesses to provide flex-time work schedules and to promote transportation modes other than the automobile.

Volume levels at the Louise Avenue interchange would increase greatly with the addition of Project traffic.

Impact 8: The Louise Avenue intersections with the I-5 north- and southbound ramps would both be operating at unacceptable levels with the addition of Project traffic (see Table V-10). [**significant**]

Mitigation 8: The Louise Avenue intersections with the I-5 north- and southbound ramps should be improved as presented in Figure V-10.

All project on-site roadways would be operating at acceptable levels of service if designed with the number of lanes shown on Figure V-10. In addition, all on-site intersections or roundabouts would be operating at acceptable levels of service (see Table V-10).

Intersections requiring signalization within the Project area are presented in Figure V-10. Traffic circles, rather than signals, are proposed at all intersections along Califia Drive. By 2017, circles would be provided (at a minimum) at the Paradise Road, Albion Road (north), Albion Road (south), Mossdale Boulevard and Gold Rush Boulevard intersections. [see previous discussion for the 2005 horizon year on the pros and cons of using traffic circles]

The proposed project would provide significantly increased traffic volumes off-site at other surface street locations within the City of Lathrop.

Impact 9: The following off-site roadway locations would experience significant impacts due to Project traffic: [**significant**]

a. Louise Avenue (Harlan Road to 5th Street) would experience LOS F operation as a 4-lane arterial.
b. Lathrop Road (5th Street to McKinley Road) would experience LOS F operation as a 4-lane arterial.
c. Golden Valley Parkway/Manthey Road (from Gold Rush Boulevard to Lathrop Road) would experience LOS F operation as a 2-lane arterial.

Mitigation 9: The City of Lathrop should plan for the ultimate widening of both Lathrop Road and Louise Avenue within the City to 6-lane facilities east of I-5. The Project applicant should provide a fair-share contribution toward both improvements.

The Project applicant should provide a fair-share contribution toward the widening of Golden Valley Parkway from two to four lanes between Gold Rush Boulevard and Lathrop Road.

Access Alternative B would create the same conditions as Access Alternative A (see above), with the exceptions described below.

Figure V-11 presents 2017 Base Case + Project Alternative B weekday PM peak hour Project area volumes. Weekday AM and Saturday AM peak hour Project area and citywide volumes, as well as PM peak hour citywide volumes, are presented in the Technical Appendix (sections T-26 through T-30). Little regional traffic use of the park-and-ride facility would be expected with Alternative B (other than by Stewart Tract or Mossdale Village commuters) due to the lack of adjacent freeway access. However, BART Express bus/transit station parking and resultant lower freeway volumes would be expected at about the same level as with Alternative A.

Figure V-12 presents locations with unacceptable freeway operation with 2017 Base Case + Alternative B volumes for weekday PM peak hour conditions. Weekday AM and Saturday AM peak hour Base Case + Alternative B unacceptable freeway operating conditions are presented in the Technical Appendix (T-31 and -32).

Impact 10: 2017 Alternative B Project traffic would result in unacceptable operation along freeway segments similar to, but not exactly the same as, those of Alternative A (above and beyond Base Case conditions).

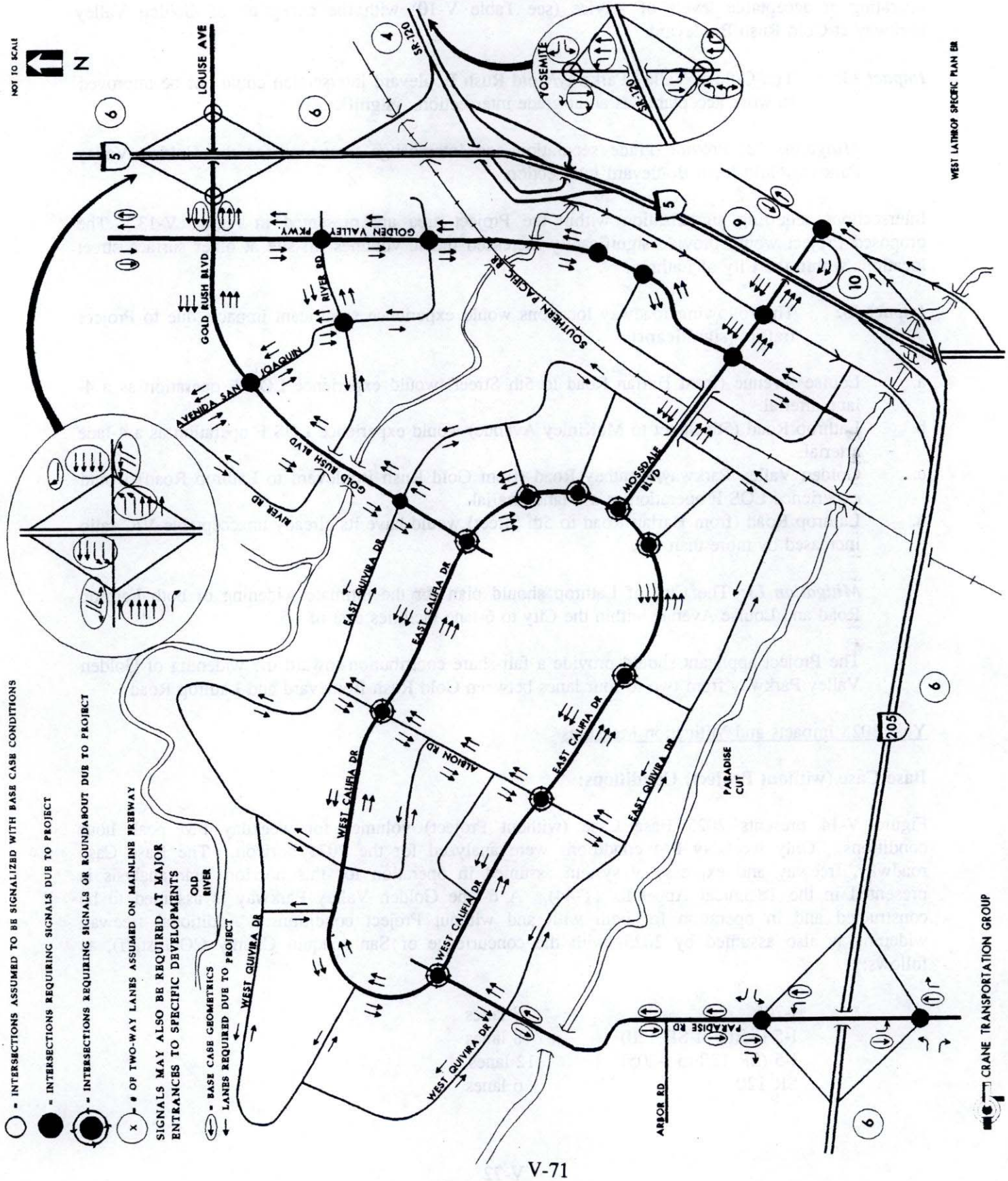
Mitigation 10: The same freeway widening mitigation would be applicable as that for Alternative A (see Mitigation 7).

Impact 11: The Louise Avenue intersections with I-5 north- and southbound ramps would both be operating at unacceptable levels with the addition of Project area traffic (see Table V-10). [**significant**]

Mitigation 11: The Louise Avenue/I-5 Southbound Ramp intersection would operate at acceptable levels if improved as presented in Figure V-10. However, the Louise Avenue intersection with the I-5 northbound ramp, even if improved as per Figure V-10, with a loop ramp in the southeast quadrant of the interchange, would not operate at acceptable levels of service. [**significant unmitigatable**]

FIGURE V-10

2017 PROJECT ALTERNATIVE A SIGNAL REQUIREMENTS, INTERCHANGE IMPROVEMENTS AND LANE REQUIREMENTS



All Project on-site roadways would be operating at acceptable levels of service if designed with the number of lanes shown in Figure V-13. All on-site intersections and roundabouts would also be operating at acceptable levels of service (see Table V-10) with the exception of Golden Valley Parkway at Gold Rush Boulevard.

Impact 12: The Golden Valley Parkway/Gold Rush Boulevard intersection could not be improved to work acceptably as an at-grade intersection. [**significant**]

Mitigation 12: Provide grade separation and interchange treatment for the Golden Valley Parkway/Gold Rush Boulevard intersection.

Intersections requiring signalization within the Project area are presented in Figure V-13. The proposed Project would provide significantly increased traffic volumes off-site at other surface street locations within the City of Lathrop.

Impact 13: The following roadway locations would experience significant impacts due to Project traffic: [**significant**]

a. Louise Avenue (from Harlan Road to 5th Street) would experience LOS F operation as a 4-lane arterial.
b. Lathrop Road (5th Street to McKinley Avenue) would experience LOS F operation as a 4-lane arterial.
c. Golden Valley Parkway/Manthey Road (from Gold Rush Boulevard to Lathrop Road) would experience LOS F operation as a 2-lane arterial.
d. Lathrop Road (from Harlan Road to 5th Street) would have its already unacceptable V/C ratio increased by more than 1%.

Mitigation 13: The City of Lathrop should plan for the ultimate widening of both Lathrop Road and Louise Avenue within the City to 6-lane facilities east of I-5.

The Project applicant should provide a fair-share contribution toward the widening of Golden Valley Parkway from two to four lanes between Gold Rush Boulevard and Lathrop Road.

Year 2025 Impacts and Mitigation Measures

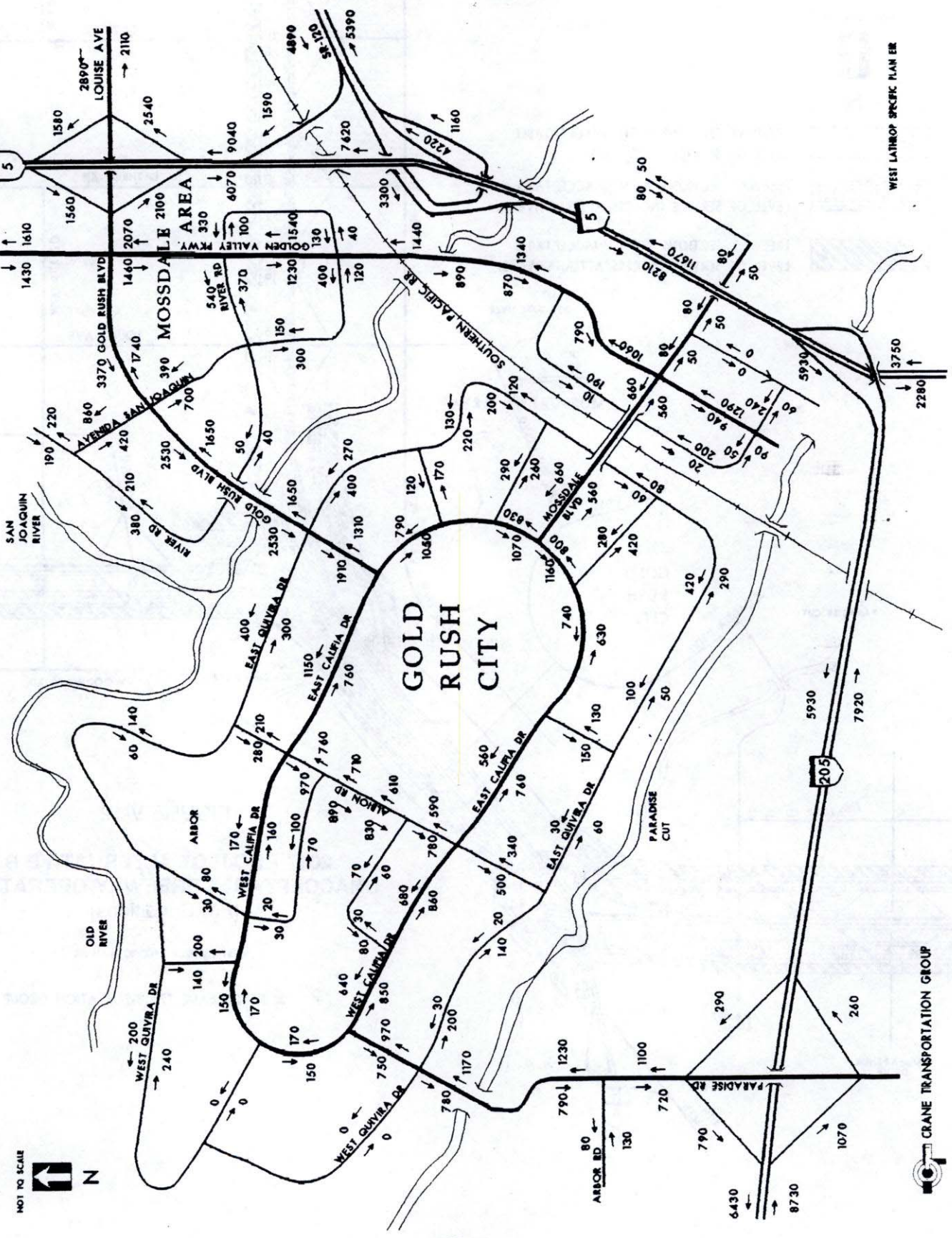
Base Case (without Project) Conditions:

Figure V-14 presents 2025 Base Case (without Project) volumes for weekday PM peak hour conditions. Only weekday PM conditions were analyzed for the 2025 horizon. The Base Case roadway, freeway and expressway system assumed in operation for this horizon year analysis is presented in the Technical Appendix (T-44). A 6-lane Golden Valley Parkway is assumed to be constructed and in operation for both with and without Project conditions. Additional freeway widening is also assumed by 2025 (with the concurrence of San Joaquin County COG staff), as follows:

I-205	8 lanes
I-5 (north of SR 120)	8 lanes
I-5 (SR 120 to I-205)	12 lanes
SR 120	6 lanes

FIGURE V-11

2017 PROJECT ALTERNATIVE B VOLUMES
[PM Peak Hour]



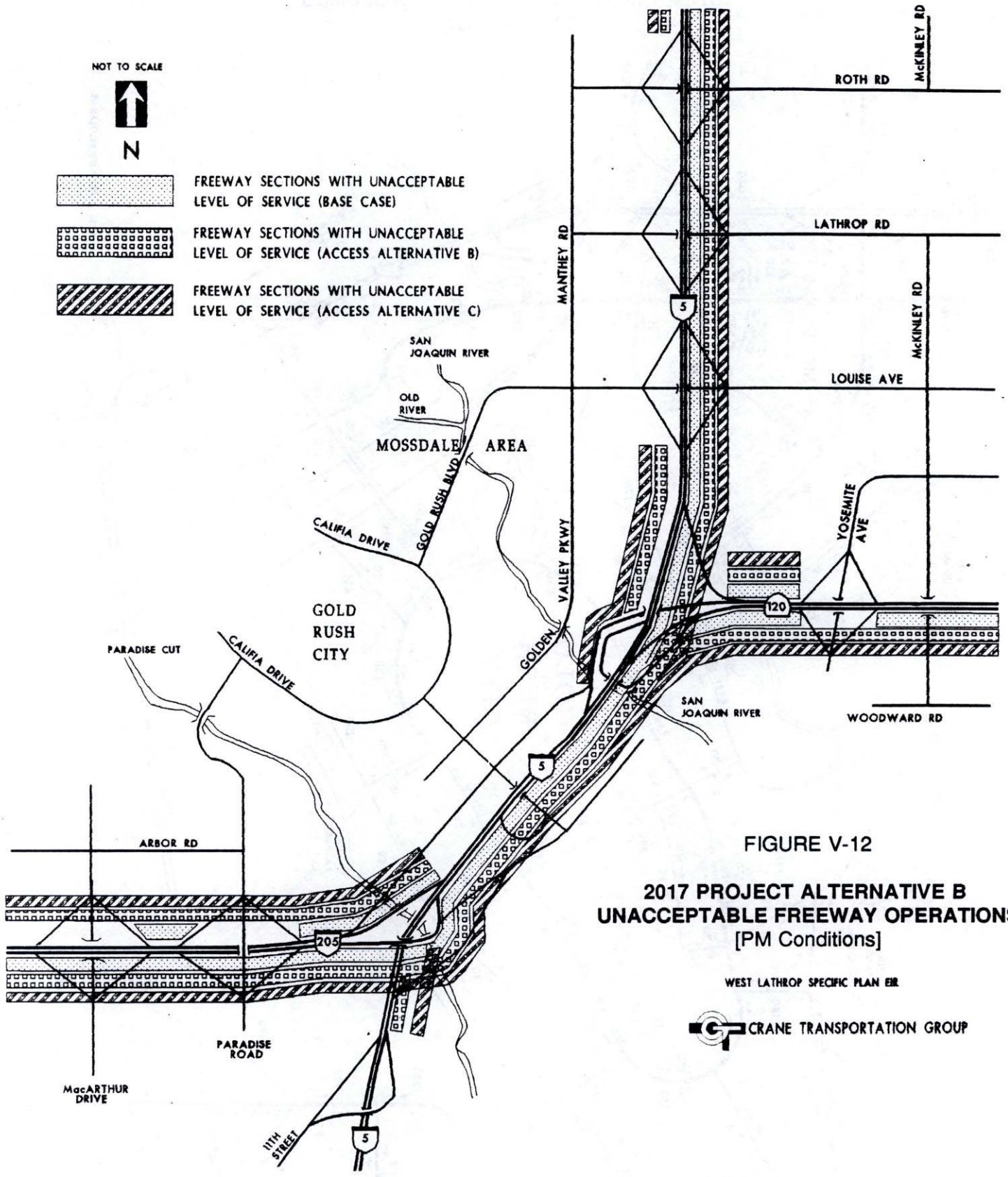


FIGURE V-12

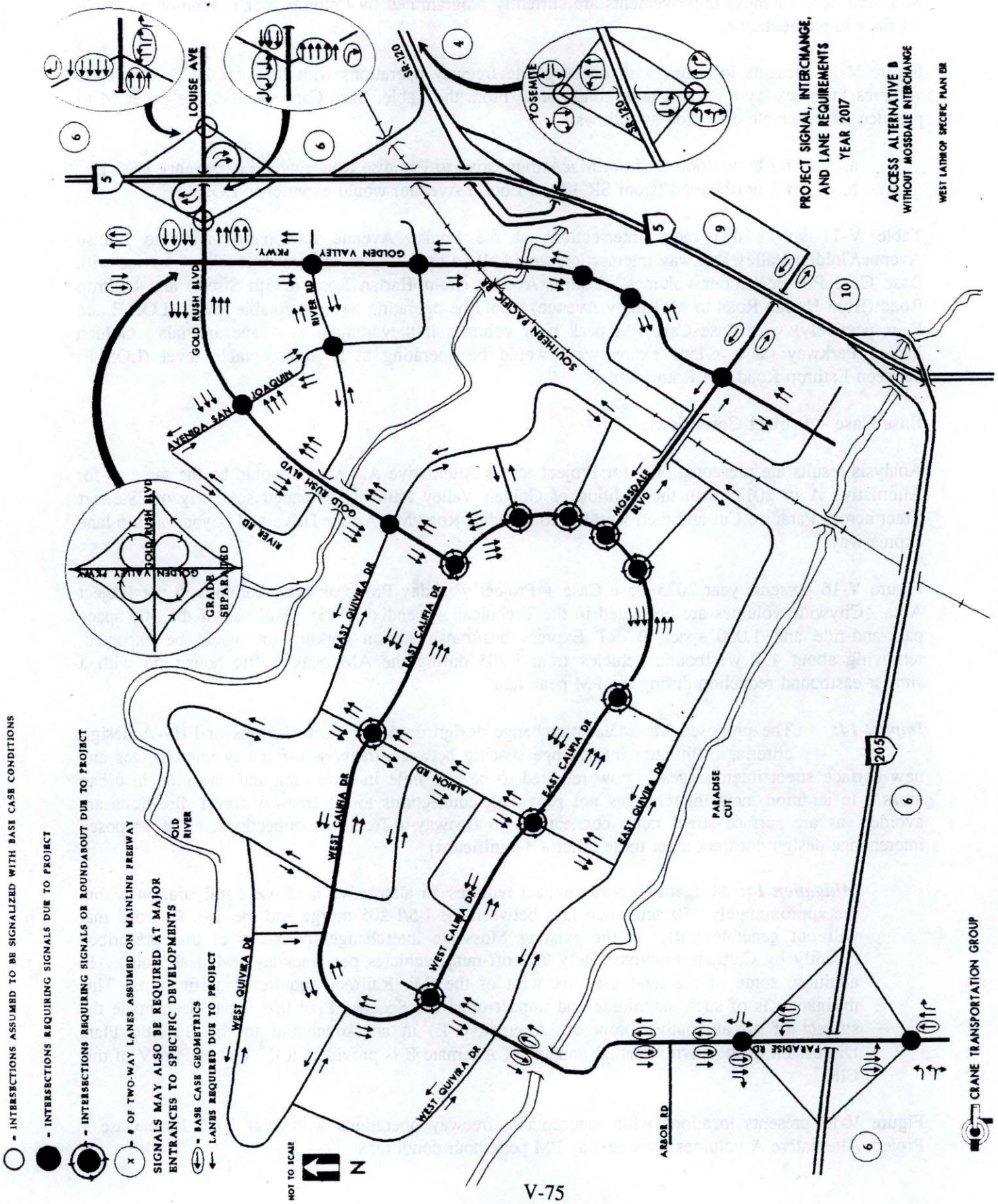
2017 PROJECT ALTERNATIVE B
UNACCEPTABLE FREEWAY OPERATIONS
[PM Conditions]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

FIGURE V-13

2017 PROJECT ALTERNATIVE B SIGNAL REQUIREMENTS, INTERCHANGE IMPROVEMENTS AND LANE REQUIREMENTS



Note that none of these improvements are currently programmed by Caltrans, nor is funding available for their implementation.

Figure V-15 presents locations with unacceptable freeway operations with the year 2025 Base Case volumes for weekday PM peak hour conditions. From the Table, Base Case volumes are expected to produce unacceptable operation as follows:

a. I-205 westbound (from MacArthur Drive to Paradise Road) would experience LOS E.
b. I-5 northbound (from SR 120 to Louise Avenue) would experience LOS D/E.

Table V-11 shows that ramp intersections at the Louise Avenue interchange and the Louise Avenue/Golden Valley Parkway intersection would all be operating at acceptable levels of service with Base Case PM peak hour volumes. Louise Avenue (from Harlan Road to 5th Street) and Lathrop Road (from Harlan Road to McKinley Avenue) would be operating at unacceptable levels (LOS E and F, respectively) with Base Case PM peak hour volumes if they remain as 4-lane arterials. Golden Valley Parkway (as a 6-lane expressway) would be operating at an unacceptable level (LOS F) between Lathrop Road and Roth Road.

Base Case + Project Conditions:

Analysis results are presented only for Project access Alternative A. Access would be the same as for Alternative A in 2017, with the addition of Golden Valley Parkway extended southerly off Stewart Tract across Paradise Cut and then westerly to Paradise Road/MacArthur Drive and beyond as a 6-lane expressway.

Figure V-16 presents year 2025 Base Case + Project weekday PM peak hour volumes in the Project Area. Citywide volumes are presented in the Technical Appendix (T-45). Full use of the 500 space park-and-ride and 1,000 space BART Express bus/transit station parking lot would be expected, removing about 410 westbound vehicles from I-205 during the AM peak traffic hour, and with a similar eastbound reduction during the PM peak hour.

Impact 14: The proposed Mossdale interchange design does not meet Caltrans or FHWA design criteria. Minimum interchange spacing between freeway-to-freeway interchanges and new surface street interchanges is now required to be two mile in rural area and one mile in urban areas. In addition, new interchanges not providing connections to all freeway travel directions are avoided, as are surface street ramp connections to freeway-to-freeway connections. The proposed interchange design does not meet these criteria. [**significant**]

> ***Mitigation 14:*** Mitigation of this impact requires an alternative land use configuration within the approximately 450 acres that lays between the I-5/I-205 merge and the S.P. Railroad that will not generate traffic at the existing Mossdale interchange in excess of that prescribed recently by Caltrans (approximately 700 off-ramp vehicles per weekday PM peak hour). In addition, some of the land use mix west of the S.P. Railroad requires modification. This mitigation is of such magnitude and impact upon the Specific Plan that it has been made the subject of an alternative proposal (Alternative E) in an Addendum to the Specific Plan. Discussion of the environmental impacts of Alternate E is provided at the end of Part V of this EIR.

Figure V-15 presents locations with unacceptable freeway operations with year 2025 Base Case + Project Alternative A volumes for weekday PM peak hour conditions.

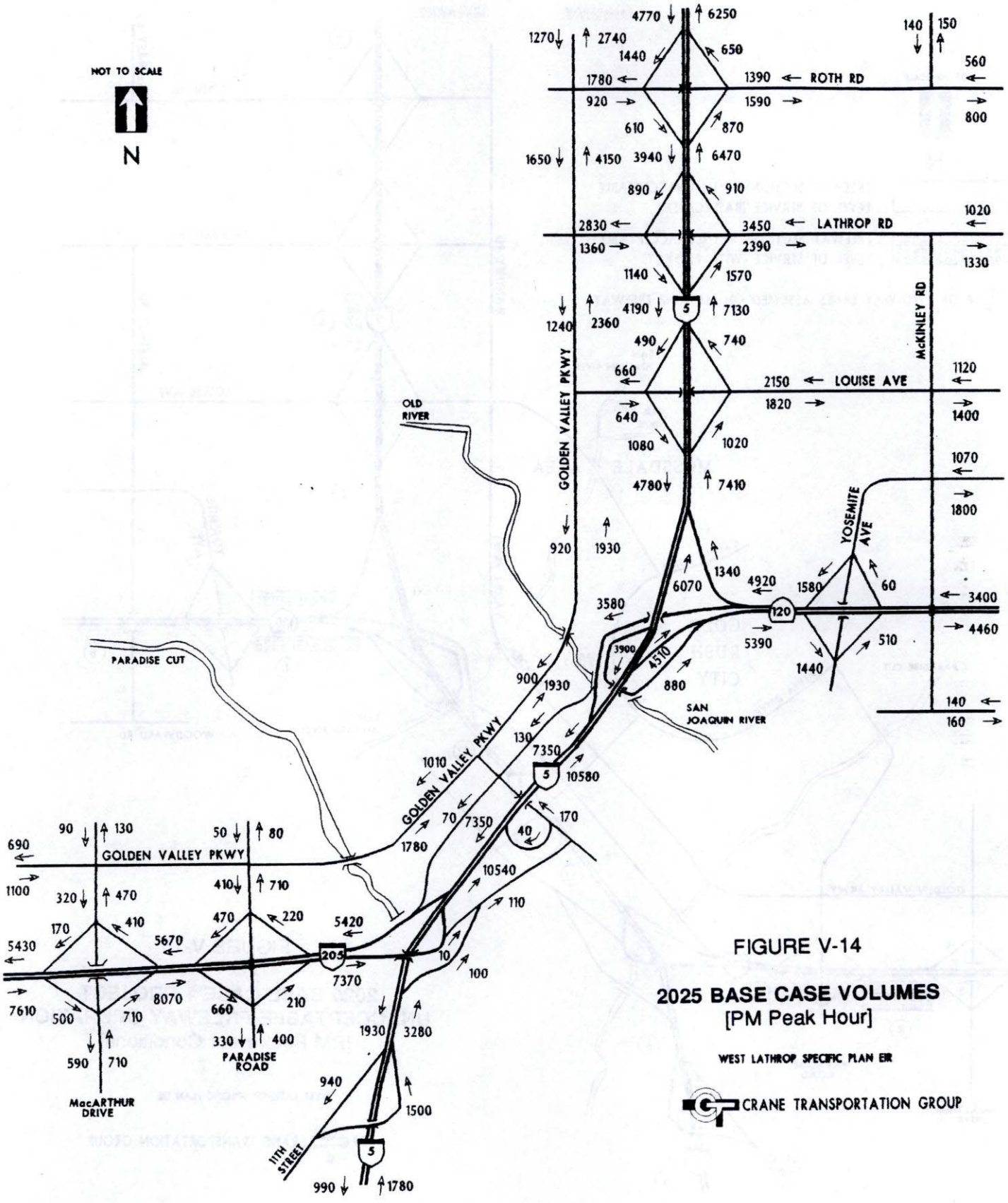


FIGURE V-14

2025 BASE CASE VOLUMES
[PM Peak Hour]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

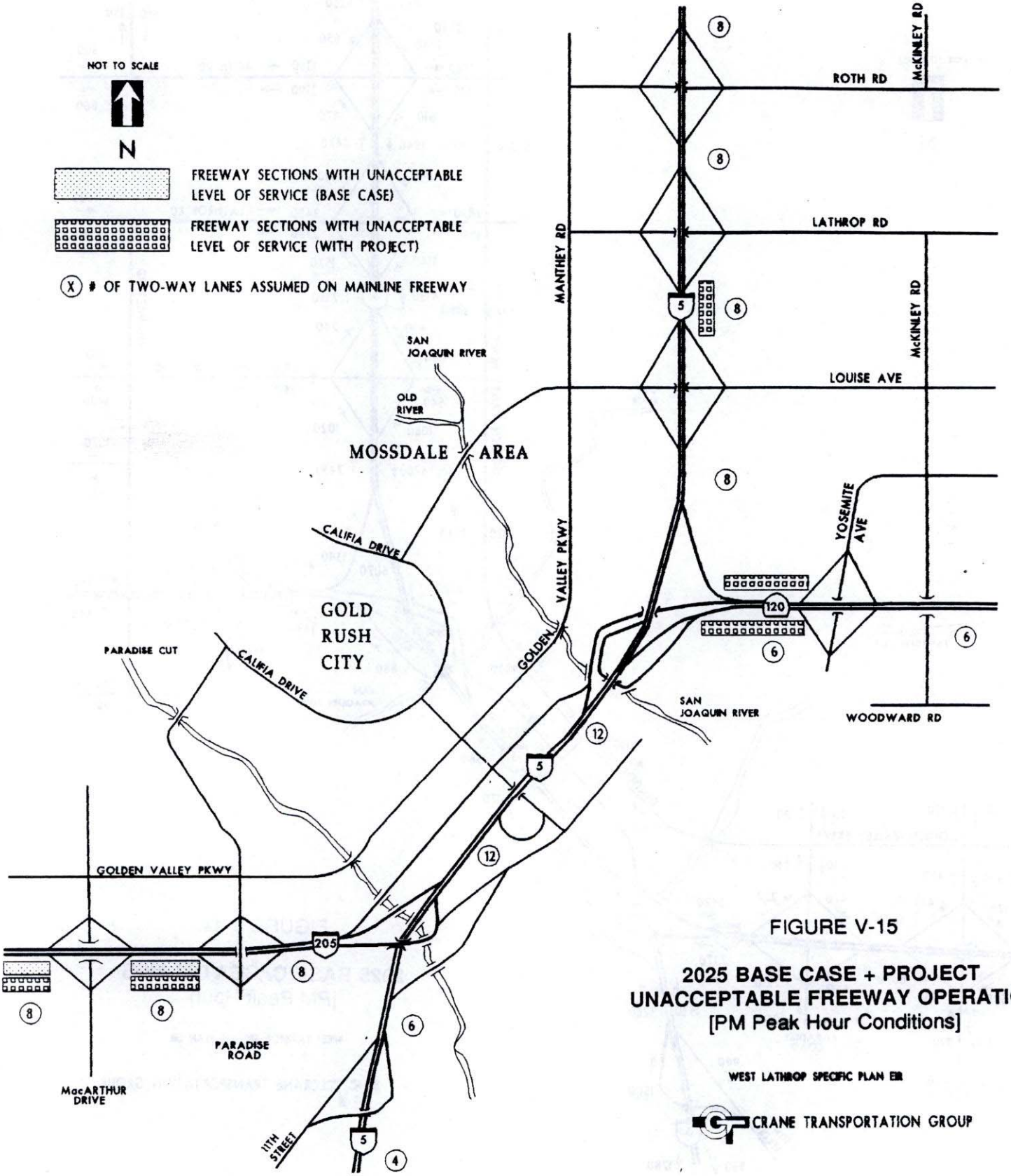


FIGURE V-15

2025 BASE CASE + PROJECT
UNACCEPTABLE FREEWAY OPERATION
[PM Peak Hour Conditions]

WEST LATHROP SPECIFIC PLAN EIR

CRANE TRANSPORTATION GROUP

TABLE V-11

YEAR 2025 INTERSECTION LEVEL OF SERVICE

BASE CASE (WITHOUT PROJECT)

Intersection	Weekday PM Peak Hour
S.R. 120 Westbound Ramps/Yosemite	C - .77[1]
S.R. 120 Eastbound Ramps/Yosemite	C - .76
I-5 Southbound Ramps/Louise Avenue	A/B - .60
I-5 Northbound Ramps/Louise Avenue	D - .85
Gold Rush Blvd/Golden Valley Parkway	C/D - .80

WITH PROJECT -- ACCESS ALTERNATIVE A (WITH MOSSDALE INTERCHANGE)

Intersection	Weekday PM Peak Hour
RAMP INTERSECTIONS	
I-205 Westbound Ramps/Paradise Road[2]	C - .79
I-205 Eastbound Ramps/Paradise Road[2]	B - .64
S.R. 120 Westbound Ramps/Yosemite	(D - .85)[3] D - .85[4]
S.R. 120 Eastbound Ramps/Yosemite	(C - .78)[3] C - .75[4]
I-5 Southbound Ramps/Louise Avenue	(F - 1.22)[3] D - .86[4]
I-5 Northbound Ramps/Louise Avenue	(F - 1.21)[3] D - .83[4]
Mossdale/I-5/I-205 Off-Ramp[2]	A - .46
GOLD RUSH CITY INTERSECTIONS	
North Albion/East-West Califia[2]	D - .86
Mossdale/Golden Valley Parkway[2]	Grade Separation Required
Mossdale/S.R. 120 Off-Ramp[2]	B - .66
East Califia/Gold Rush Boulevard[2]	D - .82
East Califia/Mossdale Boulevard[2]	D/E - .90
East-West Califia/South Albion[2]	A - .59
West Califia/Paradise Road[2]	B - .61
MOSSDALE INTERSECTIONS	
Golden Valley Parkway/River Road[2]	C - .78
Gold Rush Blvd/Avenida San Joaquin[2]	C - .71
Gold Rush Blvd/Golden Valley Parkway	(F - 2.16)[3] Grade Separation Required[4]

[1] Signalized Level of Service - Volume/Capacity Ratio
[2] New intersection
[3] Level of service with Base Case geometrics
[4] Mitigated by project (see Figure V-17)
Source: Crane Transportation Group

Impact 15: Alternative A Project traffic would result in unacceptable PM peak hour operation of LOS E along the following freeway segments: [**significant**]

a. SR 120 eastbound from I-5 to the Yosemite Avenue interchange.
b. I-5 northbound from Louise Avenue to Lathrop Road.
c. Eastbound I-205, from west of MacArthur Drive to the Paradise Road interchange, would have its V/C ratio increased by more than 1%.

Mitigation 15: TDM measures will be required for Project employment uses, and fair-share contributions toward freeway improvements should be imposed. However, the impact will be so severe as to require an alternative land use configuration as described under Mitigation 14, above.

Volume levels at the Louise Avenue interchange would increase greatly with the addition of Project traffic.

Impact 16: The Louise Avenue intersections with the I-5 north- and southbound ramps would both be operating at unacceptable levels with the addition of Project traffic (see Table V-11). [**significant**]

Mitigation 16: The Louise Avenue intersections with the I-5 north- and southbound ramps should be improved as presented in Figure V-17.

All Project on-site roadways would be operating at acceptable levels of service if designed with the number of lanes shown on Figure V-17. However, this would require widening Golden Valley Parkway through the Project site.

Impact 17: Golden Valley Parkway would operate at an unacceptable level of service through the Project site (Stewart Tract and Mossdale Village) as a 6-lane expressway with the addition of Project traffic. [**significant**]

Mitigation 17: Widen Golden Valley Parkway from six to eight lanes through the Project site.

All on-site intersections would be operating at acceptable levels (see Table V-11), with the exception of Golden Valley Parkway/Gold Rush Boulevard and Golden Valley Parkway/Mossdale Boulevard.

Impact 18: The Golden Valley Parkway at-grade intersections with Gold Rush and Mossdale Boulevards would be operating at unacceptable levels, even with maximum lane improvements. [**significant**]

Mitigation 18: Provide grade separation and interchange treatment at the Golden Valley Parkway intersections with Gold Rush and Mossdale Boulevards. Adequate rights-of-way should be retained for both improvements.

Intersections requiring signalization within the Project area are presented in Figure V-17. The Project would provide significantly increased traffic volumes off-site at other locations within the City of Lathrop.

Impact 19: The following roadway locations would experience significant impacts due to Project traffic: [**significant**]

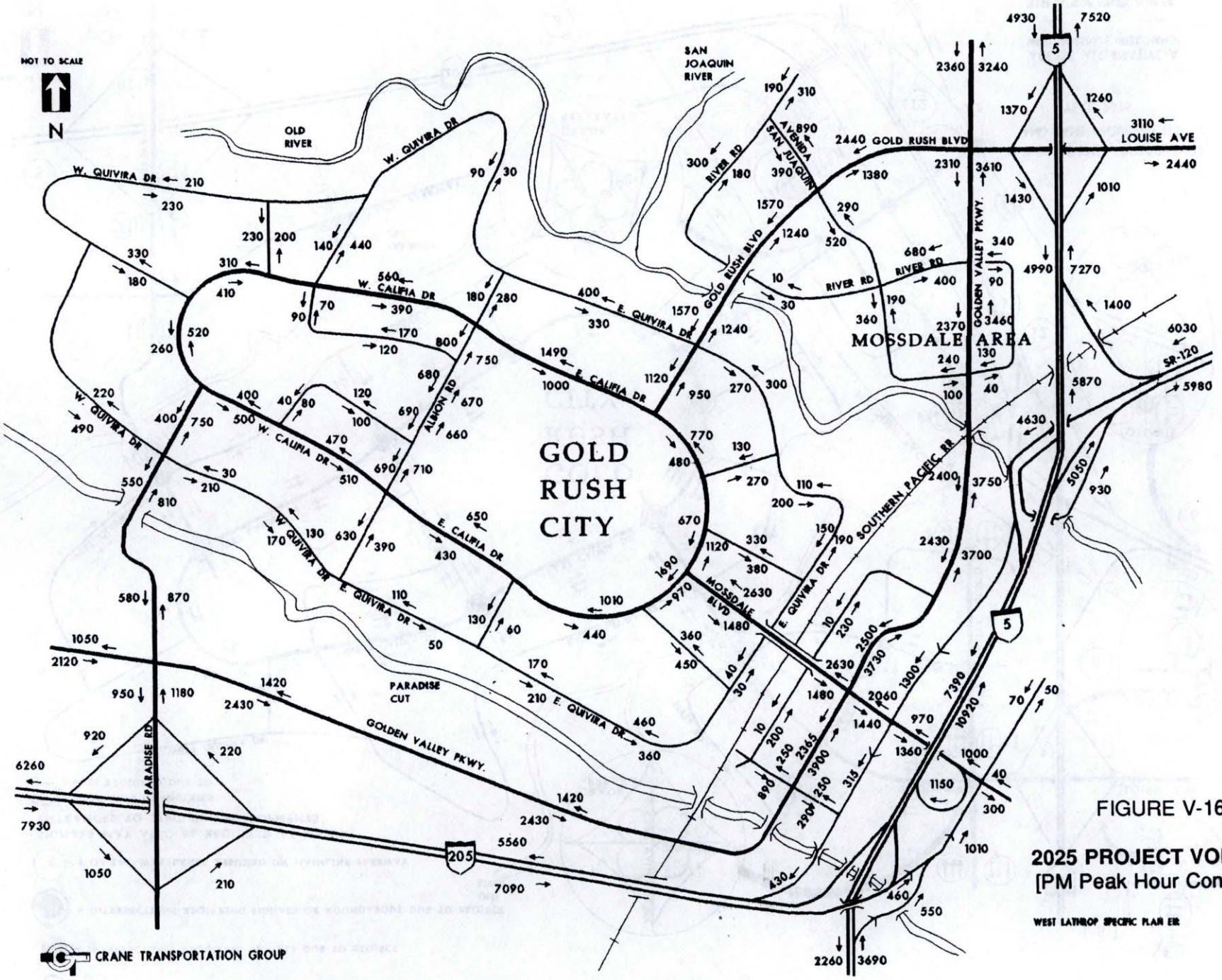


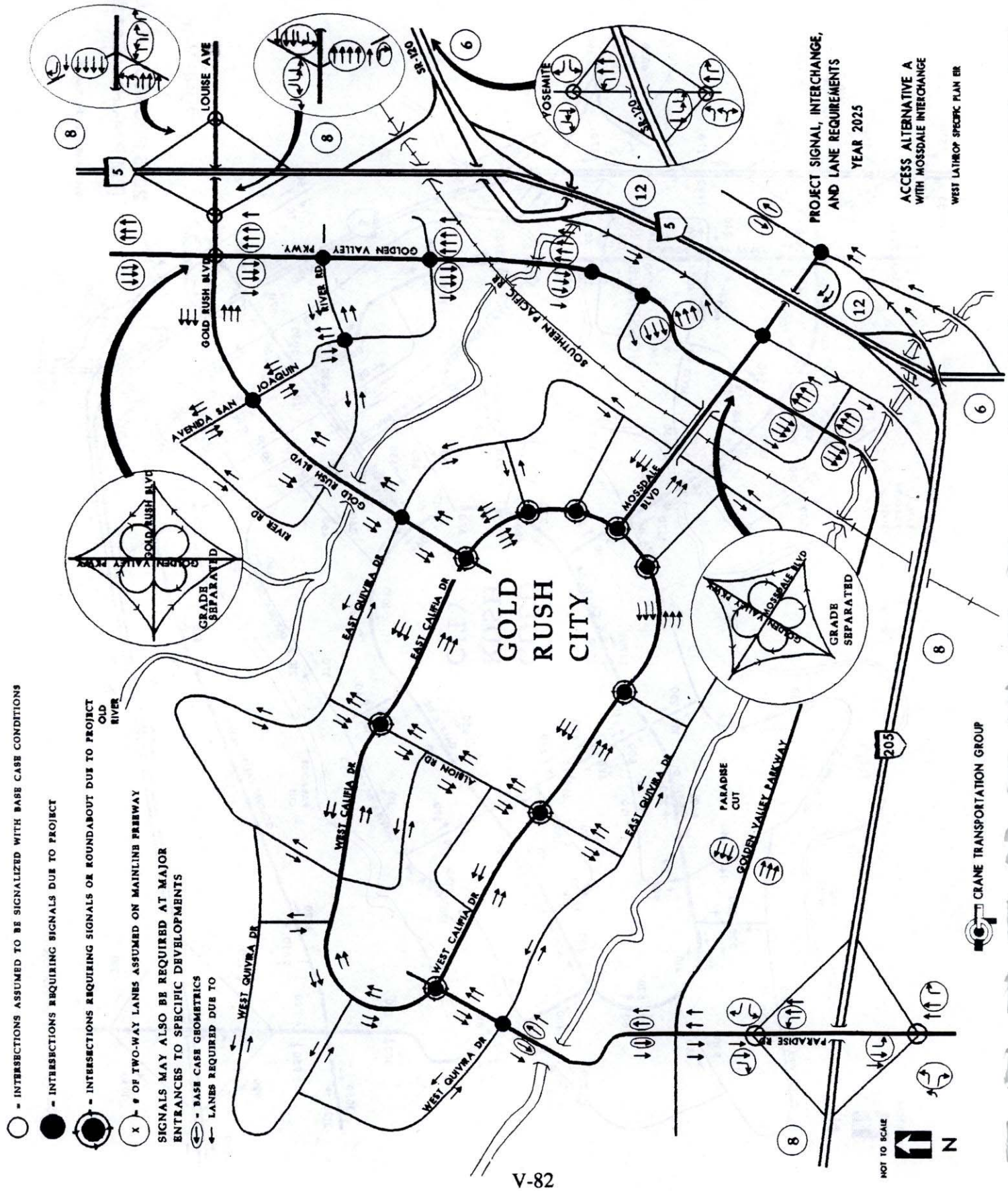
FIGURE V-16

2025 PROJECT VOLUMES
[PM Peak Hour Conditions]

WEST LATHROP SPECIFIC PLAN EIR

FIGURE V-17

2025 PROJECT ALTERNATIVE A SIGNAL REQUIREMENTS, INTERCHANGE IMPROVEMENTS AND LANE REQUIREMENTS



a. Lathrop Road, from Harlan Road to McKinley Avenue, would have its V/C ratio increased by more than 1% at locations already experiencing unacceptable operation as a 4-lane arterial roadway.

b. Louise Avenue, from Harlan Road to 5th Street, would have its V/C ratio increased by more than 1% at locations already experiencing unacceptable operation as a 4-lane arterial roadway.

c. Golden Valley Parkway, from Lathrop Road to Roth Road, would have its V/C ratio increased by more than 1% at a location already experiencing unacceptable operation as a 6-lane expressway.

Mitigation 19: The Project should provide for a fair-share contribution of traffic impact fees toward widening these three roadways.

AIR QUALITY

Existing Conditions

The description which follows is supplemental to that provided in Part III.

Meteorological Influences on Air Quality:

An area's meteorology is often an important mediator of air pollutant impact severity. Atmospheric stability, wind speed, wind direction, and the influence of local terrain on these parameters control the speed with which pollutants disperse as one moves away from a pollutant release point to a receptor. Episodes of high atmospheric stability (also known as temperature inversions) severely limit the ability of the atmosphere to disperse pollutants vertically, while low wind speeds and confining terrain have a similar effect on horizontal dispersion.

Throughout the year, the strength (or weakness) of the Pacific High, a semi-permanent high pressure cell centered over the eastern Pacific, is a dominant influence on the climate of northern California. During the late spring, summer, and early fall, descending warm air from the Pacific High forms a stable temperature inversion over a cool coastal layer of air, inhibiting vertical mixing of the latter air mass. Even so, there is usually vigorous horizontal mixing in the surface layer because of the air flow produced by the Pacific High; strong northwest winds and relatively good air quality predominate at this time.

In the early fall and late spring, however, the surface winds weaken. As a consequence, the capacity for the horizontal dispersion of pollutants is limited. Since this slow-moving surface air mass is held in place vertically by the Pacific High, air pollutants which build up then are not readily dispersed. Lack of cloud cover and relatively high surface temperatures (both frequent occurrences in portions of the State east of the coastal mountain ranges) can promote photochemical pollutant formation if precursors, such as reactive organic compounds (ROG) and oxides of nitrogen (NO_x) are present.

Even though the overall inversion associated with the Pacific High weakens considerably in the winter, local inversions (caused by cooling of air close to the ground) can form in some areas (particularly sheltered valleys) during the evening and early morning hours. The combined effects of these inversions and the light winds typically experienced then creates a high potential for air pollutant buildup.

Regulatory Context:

National ambient air quality standards (NAAQS) were established by EPA for several major pollutants. These pollutants are termed "criteria" pollutants because the EPA's choice of NAAQS is supported by specific published evidence. The NAAQS are two-tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (e.g., impairment of visibility, damage to vegetation and property, etc.). The NAAQS are shown in Table V-12. The five criteria pollutants which have attracted the greatest regulatory concern nationwide are: ozone, carbon monoxide (CO), suspended particulate matter (TSP), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2).

TABLE V-12

FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[16]	Federal Standards[17] Primary[18]	Federal Standards[17] Secondary[19]
Ozone	1-hour	0.09 ppm	0.12 ppm	).12 ppm
Carbon Monoxide	1-hour 8-Hour	20.00 ppm 9.00 ppm	35.00 ppm 9.00 ppm	35.00 ppm 9.00 ppm
Nitrogen Dioxide	1-Hour Annual Average	0.25 ppm --	-- 0.053 ppm	-- 0.053 ppm
Sulfur Dioxide	1-Hour Annual Average	0.25 ppm --	-- 0.03 ppm	-- --
Suspended Particulate Matter (PM_{10})	24-Hour Ann'l. Geom. Mean Ann'l. Arith. Mean	50 ug/m^3 30 ug/m^3 --	150 ug/m^3 -- 50 ug/m^3	150 ug/m^3 -- 50 ug/m^3
Sulfates	24-Hour	25 ug/m^3	--	--
Lead	30 Day Average Calendar Quarter	1.5 ug/m^3 --	-- 1.5 ug/m^3	-- 1.5 ug/m^3
Hydrogen Sulfide	1-Hour	0.03 ppm	--	--
Vinyl Chloride	24-Hour	0.010 ppm	--	--
Visibility Reducing Particles[20]	1 Observation	< 10 miles	--	--

16 California standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide and particulate matter are values that are not to be exceeded. Standards for remaining pollutants are not to be equaled or exceeded.

17 Federal standards, other than ozone and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentration above the standard is equal to or less than one.

18 Federal primary standards reflect the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by EPA.

19 Federal secondary standards reflect the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of pollution.

20 Prevailing visibility is defined as the greatest visibility which is attained or surpassed around at least half of the horizon circle, but not necessarily in continuous sectors.

Air Quality Problems in the San Joaquin Valley:

The causes of the violations of California and Federal standards for ozone in the San Joaquin Valley are complex. Unlike many air pollutants, ozone is not emitted directly into the atmosphere, but is produced in the atmosphere by a complex series of photochemical reactions involving reactive organic compounds (ROG) and nitrogen oxides (No_x). No single source accounts for most of the ROG and No_x emissions and the many sources are spread throughout the air basin. The San Joaquin Valley's intense heat and sunlight during the summer months (unfortunately) are ideal for the formation of ozone. Ozone levels can vary widely at the monitoring stations, depending on location and time of year, but the highest levels are generally recorded at the more southerly of the monitoring stations. In addition to the adverse effects on human health (see Table III-3), ozone is the pollutant primarily responsible for damage to crops and natural vegetation in California. Ozone injury to plants can occur as either acute injury (i.e., tissue death or death of the whole plant) at moderate to high concentrations (0.15 ppm and above for two to eight hours), or as chronic injury (i.e., reduced crop yield or impaired ecosystem stability) resulting from repeated exposure to ozone at low to moderate concentrations (0.04 to 0.2 ppm for a few days to several months).

In contrast to ozone, CO is a sub-regional problem in the Valley, because CO is a non-reactive pollutant with one major source -- motor vehicles. Ambient CO distributions closely follow the spatial and temporal distributions of vehicular traffic, and are strongly influenced by meteorological factors such as wind speed and atmospheric stability. The one-hour and eight-hour CO standards are occasionally exceeded in the Valley's largest cities, which are subject to a combination of high traffic density and susceptibility to the occurrence of surface-based radiation inversions during the winter months.

The major sources of particulates in the Valley are agricultural operations and burning, although demolition/construction activity and the entrainment of dust by motor vehicles can be important sources in urban areas. Ambient concentrations of particulates can reach levels which reduce visibility through much of the year.

The major sources of NO_x, compounds which have an important role in the formation of ozone, are vehicular, residential, and commercial fuel combustion. NO_2 is the most abundant form of ambient NO_x. The NO_2 standard has not been exceeded anywhere in the Valley over the last ten years.

The burning of high sulfur fuels for activities such as electricity generation petroleum refining, and industrial processes are the major sources of ambient SO_2. The highest levels of sulphur dioxide are recorded by monitoring stations located around Bakersfield. The SO_2 standard is currently being met throughout the Valley.

Air Quality Planning and Control in the San Joaquin Valley:

To make all deliberate progress toward the attainment of NAAQS/CAAQS, the SJVUAPCD finalized an *Air Quality Attainment Plan* (AQAP) in January 1992 (1991 Air Quality Attainment Plan, San Joaquin Valley Air Basin, SJUVAPCD, 1/31/92). The AQAP includes all feasible emission control measures which are under the jurisdiction of the SJVUAPCD to implement. However, the AQAP did not achieve the 5% per year reductions mentioned in the California Clean Air Act, nor did it project specific an attainment date for the ozone NAAQS/CAAQS. A regional air quality modeling system was developed subsequently and it was used to develop the *Ozone Attainment Demonstration Plan* (OADP), which was adopted in November 1994 (Ozone Attainment Demonstration Plan, SJUVAPCD, 11/14/94). The OADP predicted attainment of the ozone NAAQS by 1999, assuming the adoption of

the AQAP control measures, the implementation of an enhanced motor vehicle inspection and maintenance program in the Stockton and Modesto metropolitan areas, and revised growth estimates for diesel emissions, oil production, and military bases.

The AQAP has implemented 46 "retrofit" control measures to reduce emissions from existing stationary sources and has revised the New Source Review procedures to achieve no net increase in emissions from new or modified stationary sources. All new stationary sources will require Best Available Control Technology (BACT) and offsets for any emissions of non-attainment pollutants; an Emission Reduction Credit Banking system has been established to facilitate offset transfers.

The AQAP has also implemented new controls on mobile sources. Indirect source (i.e., a facility that generates or attracts motor vehicles) controls include:

- Enhanced SJVUAPCD review of and comment on new projects during the CEQA process.
- Promotion of the inclusion of Air Quality Elements in city and county General Plans.
- Development of a New and Modified Indirect Source Review Rule - This Rule would require project applicants to mitigate or offset emissions of ozone precursors from indirect sources by one or more of the following strategies:

    1) Site design or location that encourages alternative transit modes and/or reduces vehicle miles traveled.

    2) On-site/off-site mitigation of emissions.

    3) Payment of a mitigation fee to fund emission reduction programs.

    4) Air quality permit prior to construction or operation for "larger" projects.

Transportation control measures (TCMs) include:

- *Traffic Flow Improvements* - Increase traffic flow speed through signal system and capacity improvements.
- *Public Transit* - Increase the proportion of people to whom transit service is available by expanding routes, schedules, and equipment.
- *Passenger Rail and Support Facilities* - Increase inter-city rail ridership and provide for multi-modal stations linking public and private transit systems.
- *Rideshare Program* - Increase the use of carpools/vanpools.
- *Park and Ride Lots* - Provide parking lots at strategic locations to facilitate rideshare and transit connections.
- *Bicycling Program* - Accommodate the use of bicycling as an alternative to motorized transport by establishing bikeways.

- *Trip Reduction Programs* - Require employers to reduce employee trips by flexible work hours, ridesharing, etc.

- *Parking Management* - Remove existing space, reduce space requirements for new developments, and/or set aside space for carpools/vanpools.

- *Telecommunications* - Reduce travel by using electronic communication systems.

- *Fleet Operator Alternative Fuels Program* - Begin replacing gasoline or diesel trucks with low-emitting alternative fuel models. This would apply initially to fleet operators with more than fifty vehicles and eventually to fleet operators with more than twenty vehicles.

The SJVUAPCD estimates that, even with the expected significant population and employment growth foreseen in the San Joaquin Valley over the next five years, ozone precursor and CO emissions are expected to decline by the amounts shown in Table D, if all the control measures proposed by the AQAP were fully implemented.

While the AQAP does not specifically address PM_{10} control, it is expected that control measures which reduce ROG and NO_x emissions will have a beneficial impact on PM_{10} levels. Future air quality plans will deal more directly with the PM_{10} problem.

Sensitive Receptors:

Air quality standards are set to protect people who are most sensitive to their health effects. The term "sensitive receptor" refers to specific population groups and to land uses where they reside for long periods. The most commonly identified sensitive population groups and land uses are:

Sensitive Population Group	Sensitive Land Use Category
Children	Residences, Schools, Playgrounds, & Child Care Centers
Elderly	Residences, Retirement Homes, & Convalescent Homes
Acutely Ill	Hospitals/Clinics
Chronically Ill	Convalescent Homes

Significance Criteria:

The SJVUAPCD has established the following criteria for judging the significance of air quality impacts:

- Air pollution emissions from stationary sources regulated under SJVUAPCD permit powers are significant if they exceed "Best Available Control Technology" (BACT) thresholds and must be reduced to the maximum extent that current control technology allows. Furthermore, if, those emissions surpass an "Offset" threshold, emissions from existing sources in the air basin must be reduced so that no net increase in air pollutant emissions occurs.

TABLE V-14

COMPARISON OF PROJECT EMISSIONS WITH SJVUAPCD BACT AND OFFSET SIGNIFICANCE THRESHOLDS, AND WITH PLANNING EMISSION INVENTORIES
[San Joaquin Valley Air Basin]

POLLUTANT	Analysis Year	Source	Daily Emissions (lbs)	Over BACT Threshold?	Over Offset Threshold?	Compar-son with 1999
ROG		BACT Threshold	0			
		Offset Threshold	0			
	1999	SJV Total	819,140			
	2005	Project Total	2,102	Yes	Yes	0.3%
	2017	Project Total	1,979	Yes	Yes	0.2%
	2025	Project Total	2,737	Yes	Yes	0.3%
NO_x		BACT Threshold	0			
		Offset Threshold	0			
	1999	SJV Total	958,120			
	2005	Project Total	3,060	Yes	Yes	0.3%
	2027	Project Total	4,300	Yes	Yes	0.4%
	2025	Project Total	6,065	Yes	Yes	0.6%
CO		BACT Threshold	550			
		Offset Threshold	550			
	1999	SJV Total	2,970,980			
	2005	Project Total	15,496	Yes	Yes	0.5%
	2017	Project Total	15,633	Yes	Yes	0.5%
	2025	Project Total	21,326	Yes	Yes	0.7%
PM_{10}		BACT Threshold	0			
		Offset Threshold	80			
	1999	SJV Total	N/A			
	2005	Project Vehicular	2,303	Yes	Yes	N/A
	2017	Project Vehicular	3,802	Yes	Yes	N/A
	2,025	Project Vehicular	5,362	Yes	Yes	N/A

Vehicular emissions were calculated using emission rates provided by CT-EMFAC, developed by the California Department of Transportation, initialized with average fleet mix, trip lengths, speeds, trip types, and cold start/hot start percentages taken from URBEMIS3 default parameters. San Joaquin Valley on-road vehicular emissions were obtained from the Ozone Attainment Demonstration Plan, SJVUAPCD, November 1994.

Stationary source emissions were estimated based on the ratio in 1999 between on-road emissions in the air basin and stationary sources of the type included in the project according to figures contained in the emissions inventory prepared by the SJVUAPCD. Specifically, project vehicular emissions were estimated based on trip generation rates, average trip lengths and speeds and CARB emission factors. These totals were then adjusted by adding 75% for ROG, 21% for NOx and 10% for CO to provide a rough estimate of the additional emissions which would result from stationary sources.

Note that stationary sources estimates are not available for PM_{10}.

TABLE V-15

CARBON MONOXIDE CONCENTRATIONS AT INTERSECTION CURBSIDE RECEPTORS

Total: Sum of CALINE4 Value + Background

Intersection	Average	Exist	Year 2005 No project	Year 2005 Alt. A	Year 2005 Alt. B	Year 2017 No project	Year 2017 Alt. A	Year 2017 Alt. B	Year 2017 Alt. E	Year 2025 Noproject	Year 2025 Alt. A	Year 2025 Alt. B
I5NB/Louise	1-hour	9.9	10.0	10.6	13.5	10.6	11.1	13.7	13.1	10.1	11.2	N/A
	8-hour	6.9	7.0	7.4	9.5	7.4	7.7	9.6	9.1	7.1	7.9	N/A
I5SB/Louise	1-hour	6.6	9.7	10.0	12.4	8.8	11.5	13.2	12.7	9.9	11.3	N/A
	8-hour	4.0	6.8	7.0	8.7	6.1	8.0	9.2	8.9	7.0	7.9	N/A
Manthey/Louise	1-hour	3.4	6.5	9.0	13.0	7.0	10.2	9.5	9.2	7.5	11.4	N/A
	8-hour	2.4	4.5	6.3	9.1	4.9	7.1	6.6	6.4	5.2	8.0	N/A
I5 SB/I205 Ramp	1-hour	3.0	6.0	7.3	6.0	6.0	7.1	6.1	6.1	6.0	6.8	N/A
	8-hour	2.1	4.2	5.1	4.2	4.2	5.0	4.3	4.3	4.2	4.8	N/A
SR120 Off/Moss	1-hour	3.0	6.0	8.2	6.0	6.0	9.0	6.1	6.1	6.0	9.1	N/A
	8-hour	2.1	4.2	5.7	4.2	4.2	6.3	4.3	4.3	4.2	6.4	N/A
Gold Vall/Moss	1-hour	3.0	6.0	8.7	7.2	6.0	9.1	7.7	6.6	6.0	11.2	N/A
	8-hour	2.1	4.2	6.1	5.0	4.2	6.4	5.4	4.6	4.2	7.8	N/A
Circle/Moss	1-hour	3.0	6.0	8.8	7.3	6.0	9.2	7.3	6.6	6.0	9.9	N/A
	8-hour	2.1	4.2	6.2	5.1	4.2	6.4	5.1	4.6	4.2	6.9	N/A
Gld Rush/Circle	1-hour	3.0	6.0	6.0	7.7	6.0	8.9	9.0	8.6	6.0	9.6	N/A
	8-hour	2.1	4.2	4.2	5.4	4.2	6.2	6.3	5.0	4.2	6.7	N/A
CO Background	(One-Hour from Air Quality Technical Analysis Notes, Caltrans, June 1988, Page 6100-2; Eight-Hour = 0.7 x One-Hour)											
	1-hour	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	8-hour	2.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES UNDER ALTERNATIVE E

Alternative E presents the preferred land use arrangement for the eastern end of Stewart Tract, as described at the end of Part II of this EIR [see pp II-23 through II-32 in Part II.]

Limitations of the Mossdale Interchange with the I-5/I-205 Merge

As discussed earlier in Part V, proposals of the Specific Plan which depend on the continued availability of the existing Mossdale interchange within the I-5/I-205/S.R. 120 "merge" between two freeway-to-freeway interchanges will cause the "merge" and the Mossdale interchange to experience unacceptable levels of service in the short, medium and long-range. Under standards of the Federal Highway Administration and the California Department of Transportation, access to adjacent land is not permitted for a distance of two miles in either direction from the intersection of two freeways. However, in designing this section of the freeway system, the Mossdale interchange was created because of legal requirements that assure access to adjacent farmland and small marinas along the San Joaquin River. With its widely spaced "button-hook" on-ramps and off-ramps, the Mossdale interchange satisfied these access requirements without significant impact on the freeway system because of the minor traffic generated under existing land use conditions.

With Stewart Tract development as proposed by the Specific Plan (without Alternative E), the amount of traffic generated at the Mossdale interchange will be far too great to enable it to function safely and at acceptable levels of service. The situation is worsened by the conflicts with freeway traffic merging from I-5 and I-205, weaving and then diverging at the I-5/S.R. 120 split, and by conflicts of the reverse pattern of merging from I-5 and S.R. 120, weaving and then diverging at the I-5/I-205 split. Weaving conflicts with high traffic volumes introduce an increased potential for accidents during peak hours of freeway traffic, and during periods of heavy fog in winter.

The limitations and potential for utilizing the Mossdale interchange had been discussed with District 10 Caltrans staff for more than a year prior to publication of the Specific Plan. In addition to extensive traffic modeling, engineering designs were commissioned by the project sponsor that would mitigate long-range impacts of Stewart Tract development, including a complete redesign of the Mossdale interchange that eventually was disapproved by Caltrans. Proposals of the Specific Plan were developed that would depend on an "improved" Mossdale interchange as one of three principal means of freeway access to and from Stewart Tract. Among the features proposed was a large-scale 2,500 space park and ride facility close to the interchange that would have removed a significant amount of Bay Area commute traffic from the I-205 and I-580 freeways during commute hours.

It wasn't until May of 1995 that Caltrans made the determination that the existing Mossdale interchanges could accept a maximum weekday PM peak hour traffic load of no more than 700 inbound and 500 outbound trips. This effectively rules out long-range use of the existing Mossdale interchange as a principal means of access to Stewart Tract and southern reaches of Mossdale Village. Consequently, it requires an alternative approach to land use and circulation for the more than 450 acres of land between the freeway "merge" and the Southern Pacific Railroad track that parallels the freeway "merge" on the west.

Limited Land Use to be Served by the Mossdale Interchange

Alternative E (see Figure II-5, p. II-25) land use proposals between the freeway merge and the S. P. Railroad is based on the maximum peak hour capacity for the Mossdale interchange determined by Caltrans, as discussed above. This alternative would effectively remove all commercial land use and

park and ride facilities from the area between the freeway merge and the S.P. Railroad except for a 50 acre farmers' market. Remaining acreage is designated Urban Reserve to reflect land use policies of the General Plan. As a practical matter, remaining acreage would continue in agricultural use until such time that increased traffic access from the freeway merge might be permitted.

Other Revisions to the Land Use Pattern and Circulation System Serving the Eastern End of Stewart Tract

Other changes in land use and circulation that are proposed under Alternative E are also shown on Figure II-5 and are described in Part II. In addition to the Gold Rush Boulevard crossing of the San Joaquin River, Golden Valley Parkway is extended to Stewart Tract west of and parallel to the S.P. Railroad. It is noteworthy that there would not be any traffic connection between the Mossdale interchange and development west of the S.P. Railroad.

Impacts and Mitigation Measures

All of the significance criteria described under the various topics of environmental analysis provided in Parts IV and V of this EIR remain valid for Alternative E.

Impacts Generally:

Despite the land use changes presented by Alternative E, a worst case condition remains for traffic and air quality, and virtually all of the impacts and mitigation measures described for the Specific Plan remain valid for Alternative E. The revised land use and circulation proposals of Alternative E have been subjected to additional traffic and air quality analysis to better understand the effects on the West Lathrop Specific Plan Project area and the City as a whole.

Traffic Impacts:

The traffic impacts of Alternative E are shown on Figures V-18 and -19, for the 2017 horizon year, with only the limited availability of the Mossdale interchange described above. Figure V-18 shows projected traffic volumes on the entire roadway system covered by the Lathrop General Plan, while Figure V-19 shows more closely the projected volumes for Mossdale Village and Stewart Tract. In comparing these projections with those of the Specific Plan as proposed, overall impacts on PM peak hour freeway traffic remain essentially the same. The following impacts are worthy of mention:

[B] 1. By the year 2017, PM peak hour northbound ramp congestion can be expected at the Louise Avenue/I-5 interchange, with operations at unacceptable (LOS F) level of service.

[S] 2. Even limited use of the Mossdale interchange could cause traffic problems if a road connection between the interchange and the area of Stewart Tract west of the S.P. Railroad track is provided.

Traffic Mitigation:

[B] 1. The potential for ramp congestion at the Louise Avenue interchange would be mitigated by the construction of loop on-ramps in the southeast and northwest quadrants of the interchange. Adequate space should be reserved for this purpose as development on adjacent land occurs.

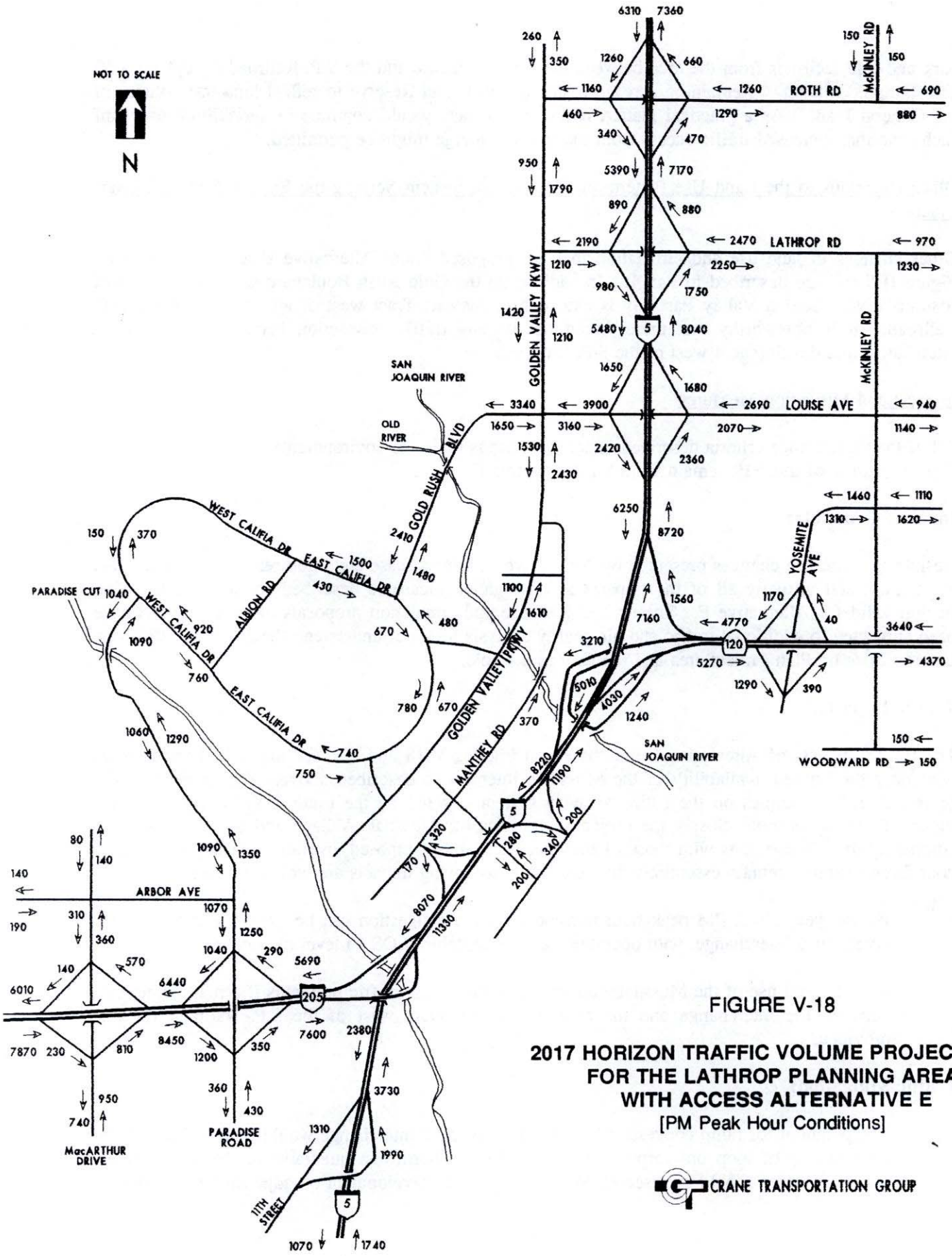


FIGURE V-18

2017 HORIZON TRAFFIC VOLUME PROJECTIONS FOR THE LATHROP PLANNING AREA WITH ACCESS ALTERNATIVE E

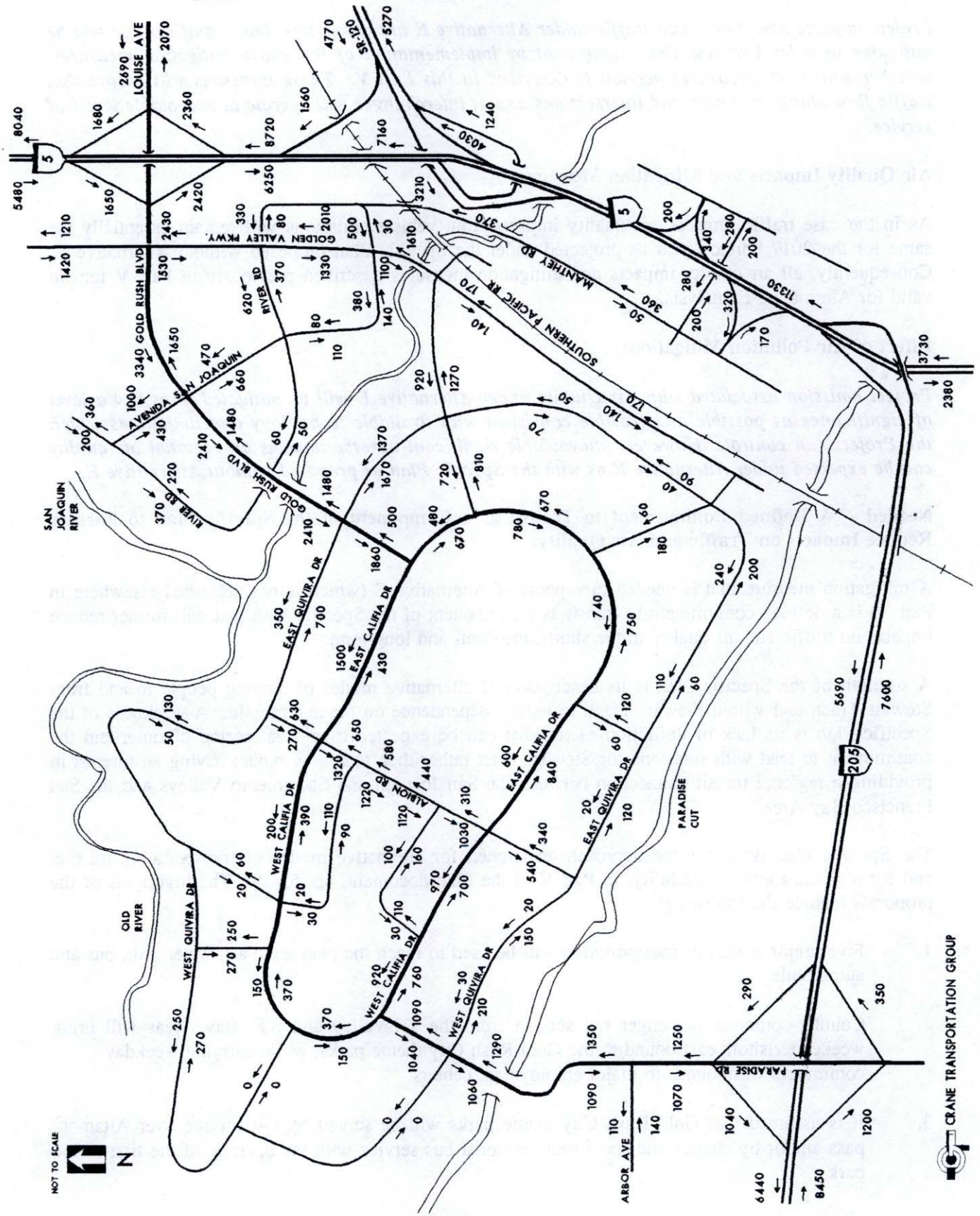
[PM Peak Hour Conditions]

CRANE TRANSPORTATION GROUP

FIGURE V-19

2017 HORIZON TRAFFIC VOLUME PROJECTIONS FOR MOSSDALE VILLAGE AND STEWART TRACT, WITH ACCESS ALTERNATIVE E

[PM Peak Hour Conditions]



Effect of Traffic Mitigation:

Project impacts associated with traffic under Alternative E are either less than significant or will be mitigated to a level of less than significant by implementation of the above mitigation measures, together with those measures previously described in this Part V. These measures will ensure that traffic flow along roadways and intersections and at interchanges will operate at acceptable levels of service.

Air Quality Impacts and Mitigation Measures:

As in the case traffic impacts, air quality impacts from vehicle emissions will remain essentially the same for the 2017 horizon year as projected under the Specific Plan proposed without Alternative E. Consequently, all air quality impacts and mitigation measures described previously in Part V remain valid for Alternative E analysis.

Effect of Air Pollution Mitigation:

Project emission associated with Air Quality under Alternative E will be mitigated to as low a level of significance as possible and feasible consistent with available technology and limitations which the Project can control. However, unavoidable significant adverse impacts on regional air quality can be expected under Alternative E as with the Specific Plan as proposed without Alternative E.

Needed -- A Defined Commitment to Transit as a Component of the Specific Plan to Further Reduce Impacts on Traffic and Air Quality:

A mitigation measure that is needed in support of Alternative E (which is not described elsewhere in Part V) is a defined commitment to transit as a component of the Specific Plan that will further reduce impacts on traffic and air quality in the short-, medium- and long-term.

A strength of the Specific Plan is its description of alternative modes of moving people to and from Stewart Tract, and within Stewart Tract, to reduce dependence on the automobile. A weakness of the Specific Plan is its lack of definition as to what can be expected over what period of time, and the commitment to lead with solutions for Stewart Tract rather than to follow others having an interest in providing a regional transit connection between the San Joaquin and Sacramento Valleys and the San Francisco Bay Area.

The Specific Plan describes the approach envisioned for alternative modes of transportation on-site, and for regional transit availability, in Part V of the Plan document, pp. 52-59. The highlights of the proposals include the following:

1. Five major modes of transportation will be used to reach the plan area: air, water, rail, bus and automobile.

2. Counter-commute passenger rail service from the Tri-Valley and S.F. Bay Areas will bring weekend visitors east-bound to the Gold Rush City theme parks, while carrying weekday commuters westbound to major employment centers.

3. It is assumed that Gold Rush City theme parks will be served by rail service over Altamont pass and/or by charter and fixed route regional bus service with the opening of the first theme park.

4. A multi-modal transit center will be developed on-site as part of Phase 1 development. This will be developed in conjunction with a 2,500 space park & ride transit station parking facility for commuters.

5 Several types of high-occupancy vehicle service are expected to access the plan area, including sub-regional bus systems from nearby cities and shuttle buses from the Stockton airport.

6. Movements within Stewart Tract will be facilitated by a system of waterways (using small boats), a trail system, a skyway system along a central spine, and various modes of transit including boats, shuttles, and overhead vehicles. Transit vehicles will convey visitors between theme parks and the multi-modal transportation center and parking facilities, and between hotels, motels and recreation lodging facilities.

7. Local transit is also to be provided within Mossdale Village, connecting the Village with other activity centers of the community. Initial transit service will be provided by buses. The Golden Valley Parkway corridor will include right-of-way for a future light rail system connecting with Tracy, Manteca and Stockton.

All of these approaches to regional and on-site transit service are plausible and necessary. The weakness is in not defining more specifically the timing and staging of multi-modal services within the plan area and the actions which the Project sponsor expects to take in advancing the availability of regional transit to serve Stewart Tract. In Part IV of this EIR, a commitment to transit is discussed that seeks significant reduction in use of the automobile by the year 2005 [see p IV-26]. The initial commitment is expected to produce a 68% attendance by auto, 10% by train, and 22% in combination by bus, air and water modes. By 2015, transit alone is expected to account for as much as 30% of attendance traffic.

Of special note is a proposal discussed during Specific Plan preparation but not yet endorsed by the Project sponsor for providing transit from remote parking lots along the S.P. Railroad west of Stewart Tract and north along the I-5 corridor. Under this proposal, special trains could move between these remote lots and Gold Rush City during peak periods of theme park activity, which would reduce freeway traffic through the entire Lathrop planning area. This proposal appears ripe for consideration as part of the Specific Plan with preparation of the Alternative E addendum to the Specific Plan. Under Alternative E, three remote parking lots are to be located away from Stewart Tract as a means of mitigating traffic impacts on the freeway system. These lots will, in combination, replace the large park and ride facility formerly proposed with access from the Mossdale interchange. They will be located north along I-5, east along S.R. 120 and west along I-205. These three remote parking lots could easily provide double duty, serving commuters on weekdays and theme park visitors on weekends.

Perhaps the key statement in Part IV is the following apparent commitment to transit which should be implemented from the beginning of the Project:

> "Transit is to be considered as much a part of the proposal as any other type of infrastructure needed, such as water supply and liquid waste treatment and disposal. As such, the various transit modes are to be available from the beginning, with service expansion as needed. This approach constitutes a major departure in planning to meet the transportation requirements of a large-scale and traffic intensive project."

The Specific Plan comes close to meeting this challenge. What is needed is to have the above citation made a part of the Specific Plan and the Development Agreement between the City and the Stewart Tract developer. This would be augmented by the inclusion of specific phased actions in support of both on-site and off-site non-auto modes of transportation in Part VII of the Specific Plan document pertaining to Plan implementation.

Other Impacts:

Other impacts of the Project (other than those related to traffic and air quality) as modified by the proposals of Alternative E can also be expected to produce positive benefits resulting from less intensive activities, with the following positive results:

[B] 1. Early access to Stewart Tract would be provided by Gold Rush Boulevard and Golden Valley Parkway from the I-5/Louise Avenue interchange on the north, and eventually from the proposed I-205/Paradise Road interchange on the west.

[S] 2. About 400 acres would be retained in agricultural use. This acreage would continue to be available as foraging habitat for the Swainson's Hawk, and would reduce the amount of storm water runoff and light and glare generated by the Project.

[S] 3. The agricultural lands retained would be available for purposes of marshaling equipment and supplies needed for large-scale evacuation from Stewart Tract in the event of a natural or man-caused disaster.

[S] 4 The visual impact of Stewart Tract development as viewed from the freeway would be lessened by the greater distance to large concentrations of commercial development west of the S.P. Railroad.

[S] 5. Sand deposits of regional significance as classified and designated by the State Mining and Geology Board would remain largely unaffected.

[S] 6. A substantial reduction in housing for permanent occupancy will occur, with concomitant reductions in demands for school services, electrical and natural gas utility services, solid waste management, and general governmental services.

Effect of Other Impacts and Mitigation under Alternative E:

None of the above changes in impact will result in other impacts that have not already been identified and analyzed in this EIR, and for which mitigation measures have not already been described.. These changes will be significant positive and do not require further discussion.

PART VI

ALTERNATIVES TO THE PROPOSED PROJECT

INTRODUCTION

CEQA requires that alternatives should be discussed in the context of what is reasonable and feasible, that the alternative of "no project" be described, that additional significant effects (if any) be described, and that discussion focus on alternatives capable of eliminating or reducing any significant adverse physical environmental effects to a level of insignificance. More specifically, Section 15126 (d) sets forth the following requirements in describing alternatives to the proposed action:

"(d) Alternatives to the Proposed Action. Describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, and evaluate the comparative merits of the alternatives.

(1) If there is a specific proposed project or a preferred alternative, explain why the other alternatives were rejected in favor of the proposal if they were considered in developing the proposal.

(2) The specific alternative of "no project" shall also be evaluated along with the impact. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the alternatives.

(3) The discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

(4) If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed but in less detail than the significant effects of the project as proposed.

(5) The range of alternatives required in an EIR is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives foster informed decision-making and informed public participation. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

Types of Alternatives Analyzed

The presentation of alternatives begins with a description of the four alternatives examined by the General Plan EIR. They include the "No Project" alternative, two alternatives that call for a lesser degree of urbanization as a means to further mitigate environmental impacts, and a fourth alternative seeking greater levels of population and urban expansion to the northern boundary of the planning area used in preparing

the Lathrop General Plan. The first of the lesser growth alternatives (Alt.1) calls for reductions in levels of development on both sides of the San Joaquin River. The second (Alt. 2) calls for a reduction east of the river and elimination of Gold Rush City west of the river.

A second set of alternatives present design alternatives to the West Lathrop Specific Plan within the framework of development policy established by the General Plan.

Given the first set of alternatives covered by the General Plan EIR, it is not necessary to reevaluate them in detail in describing alternatives to the Specific Plan. As described in Citizens of Goleta Valley et al v. Board of Supervisors ("Goleta II") (1990) 52 Cal.3d 553 [276 Cal.Rptr. 410], a project-specific EIR "...is not ordinarily an occasion for the reconsideration or overhaul of fundamental land use policy." Moreover, "...to require a reexamination of basic land use policy with every permit application would impose an unnecessary and wasteful burden on local governments." This principle also applies to a Specific Plan EIR, and is annunciated in AB 1888 signed into law in 1993. AB 1888 states that environmental analysis provided in a General Plan EIR can be used, under the tiering process, as a basis for later project reviews under CEQA. In light of the above, alternatives to the Specific Plan deal with different configurations of development rather than with the kind or type of development proposed.

ALTERNATIVES PRESENTED IN THE GENERAL PLAN EIR

The Alternative of "No Project"

Project Description:

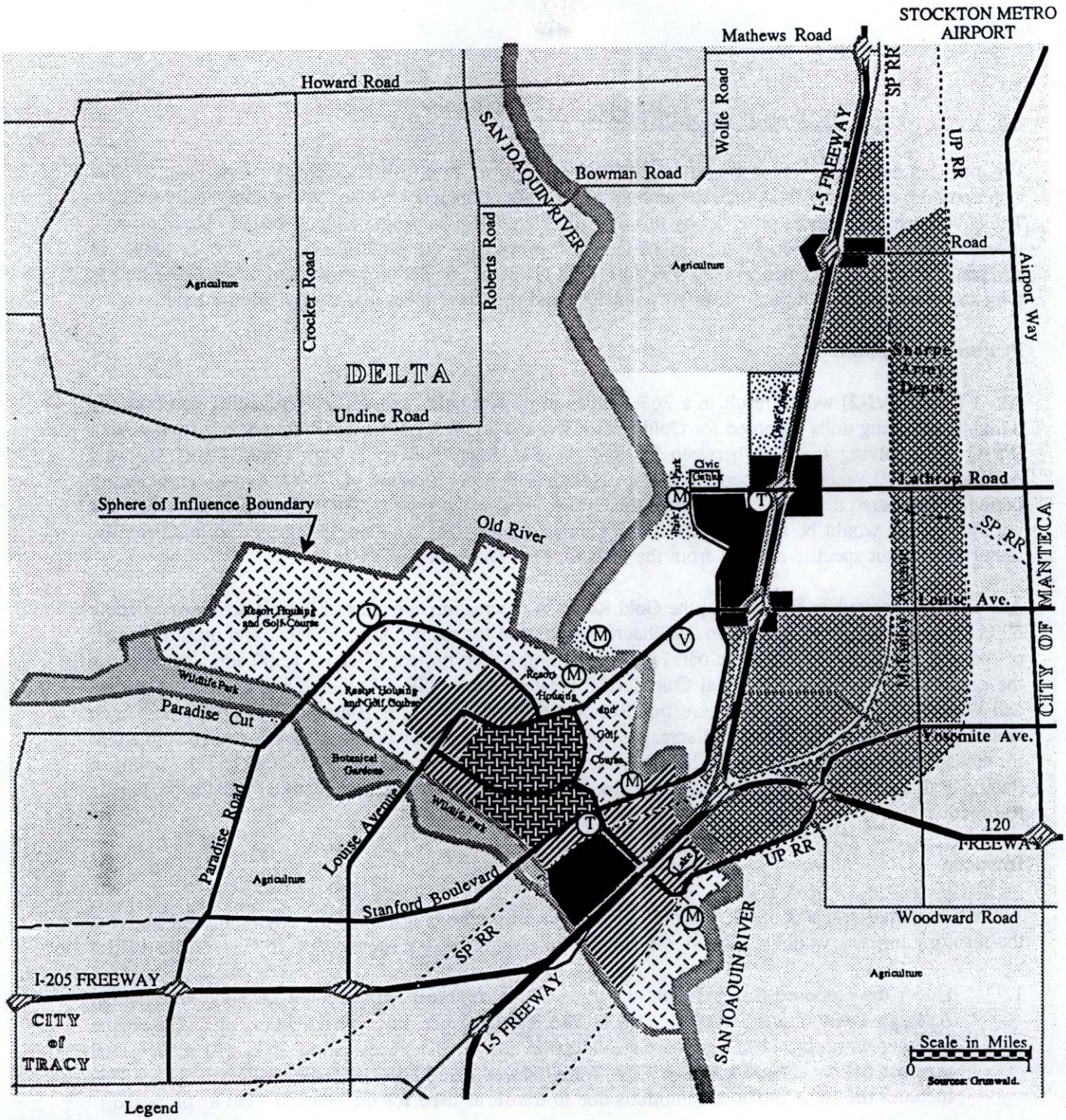
This alternative would involve retaining the status quo with respect to the City's sphere-of-influence and City limits and effectively limit development to the City limits as depicted by the General Plan that was inherited from the County by the City upon incorporation. That early General Plan was adopted by the City and followed until the City adopted its current General Plan in 1991.

Impacts:

The General Plan previously adopted by the City (prior to December, 1991) is no longer adequate as a guide to future development of the community. As prepared by the County, that early version called for a level, extent and character of development consistent with a future as a relatively small unincorporated community, as compared to a city having significant employment potential serving the region. The City's strategic location and growth potential within the region was not at all reflected in the original General Plan prepared by the County. Consequently, it is not feasible to retain the original Plan.

The alternative of "no project" is also not feasible because the preparation, adoption and maintenance of a General Plan is mandated by provisions of the California Government Code. Failure by any city or county to meet these requirements is considered grounds for serious sanction by the State, including a halt to all development review and approval activities by the City until the plan is prepared and/or updated in accordance with State Law.

Mitigation Measures: No mitigation measures are required.



Legend

- Commercial: Stores and Offices
- Industrial and Service Commercial
- Residential Villages
- Community and Open Space
- Theme Park
- Recreation Commercial
- Recreation Residential
- (M) Marinas
- (V) Village Center
- (T) Transit Stations

FIGURE VI-1

20 YEAR GENERAL PLAN
(As Adopted, December, 1991)

Alt. 1 - Reducing the Area of Urban Expansion

If population and employment growth occurs at a much lower rate than anticipated by the General Plan as proposed [see Figure VI-1], then the amount of urban development expected will automatically decline. The environmental analysis provided by this Specific Plan EIR assumes a buildout scenario based on high levels of market absorption in support of land use proposals, and worst-case impacts over time. In contrast, Alt's. #1 and #2 deliberately seek to reduce levels of population growth and urban expansion as a means to mitigate traffic and air quality impacts, and the irreversible loss of agricultural land.

Project Description:

Alt. 1 [Figure VI-2] would result in a 26% reduction in population growth by eliminating 1,000 of the retirement housing units proposed for Gold Rush City, and another 1,500 units within Sub-Planning Area (SPA) #2 involving the area between I-5 and the San Joaquin River. This would lower the total population in 20 years from about 30,000 to 24,000, with a net increase of 17,000 during the planning period as compared to about 23,000 under the General Plan as proposed. The reduction in housing units within SPA #2 would be made generally throughout the SPA for both single-family and multi-family, rather than to cut specific acreage from the General Plan Diagram.

Alt. 1 would also reduce the scale of the Gold Rush City recreation commercial project activities by about 50%. It would eliminate more than 2,200 acres designated for recreation residential, and more than half of the area designated for wildlife park, while retaining a core project of about 1,500 acres centered on the proposed theme park. Regional Commercial between the I-5/SR 120 merge and the U.P. Railroad, and Waterfront Commercial and Recreation Residential between the U.P. Railroad and San Joaquin River would also be eliminated. Industrial acreage would also be reduced by eliminating industrial designations for lands located generally south of the east-west line of Vierra Road-Yosemite Avenue and the Southern Pacific Railroad to the sphere-of-influence line that would follow the alignment of the Union Pacific Railroad.

Impacts:

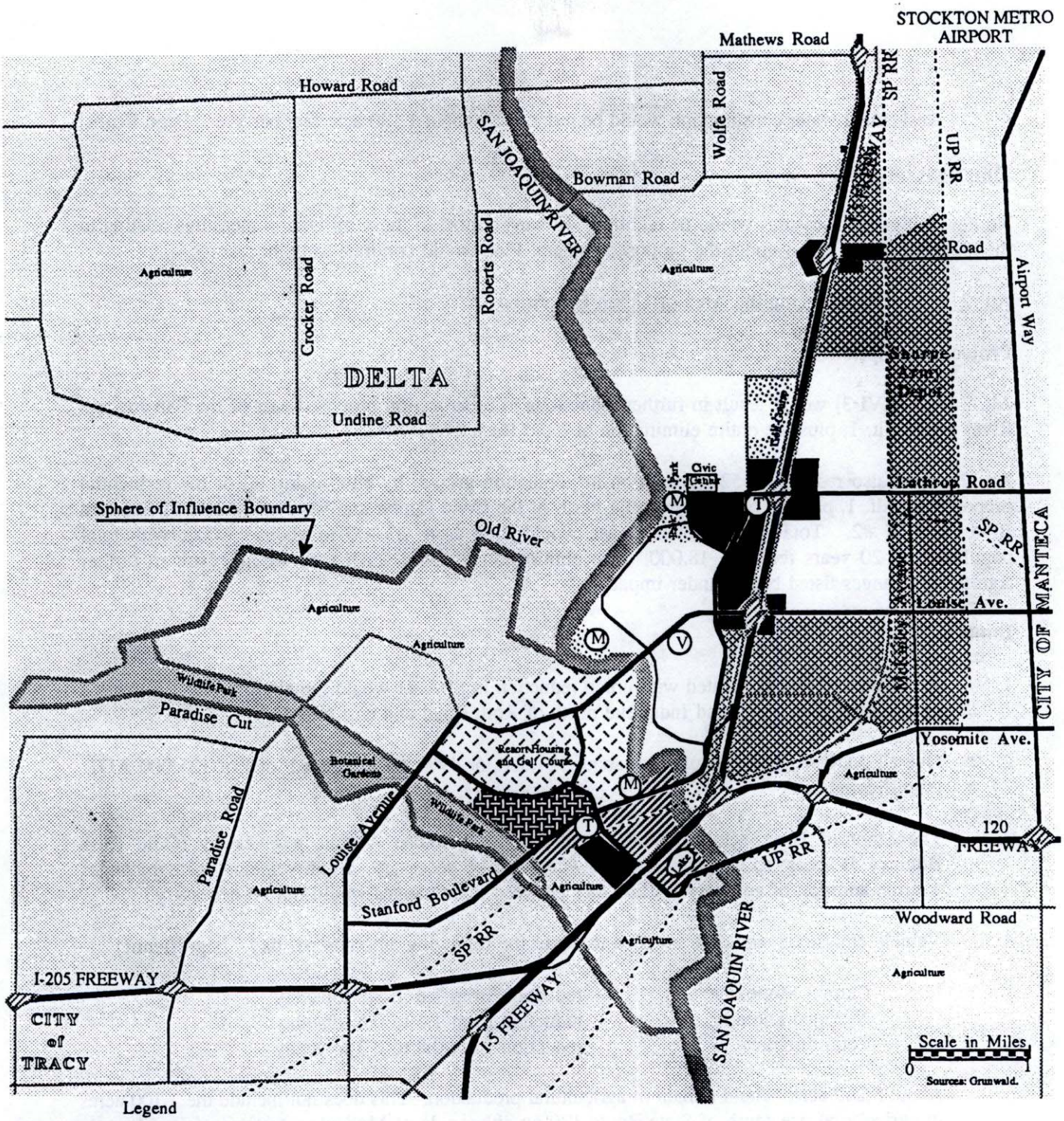
While the primary impacts of Alt. 1 would be positive with respect to mitigating environmental impacts, the resulting impacts would still be significant, as follows: (note: #'s sequence as in General Plan EIR)

1. Under the proposed General Plan, the three SPA's combined will account for approximately an Average Daily Traffic (ADT) of about 246,000 trips per day. A reduction of 6,000 people together with associated commercial, industrial and other non-residential trips will reduce total trips per day by about 53,000, or 22 %, for a reduced total of 193,000. [**significant**] [Note: This includes the same traffic assumptions due to transit as used for the General Plan as proposed.]

2. Vehicle emissions would be reduced by about the following amounts per day: [**significant**]

   - Carbon Monoxide: reduction from 7.8 to 6.0 tons/day.
   - Nitrogen Dioxide: reduction from 1.6 to 1.2 tons/day.
   - Total organics: reduction from 0.8 to 0.6 tons/day.

5. About 3,600 acres would remain in agricultural production. This does not include the 1,100 acres of housing and commercial development once proposed (in the Draft General Plan/EIR document) on either side of McKinley Avenue south of SR 120. [**significant**]



Legend

- Commercial: Stores and Offices
- Industrial and Service Commercial
- Residential Villages
- Community and Open Space
- Theme Park
- Recreation Commercial
- Recreation Residential
- (M) Marinas
- (V) Village Center
- (T) Transit Stations

FIGURE VI-2

20 YEAR GENERAL PLAN: ALT. 1

The Lathrop General Plan Diagram
December 1991

6. Residential water consumption would be reduced by about 1,130 acre feet per year. [**significant**]

Mitigation Measures

No new mitigation measures would be required. However, most of those mitigation measures relating to the levels of urbanization under the proposed General Plan would continue to be necessary.

Alt. 2 - Further Reducing the Area of Urban Expansion

Project Description:

Alt. 2 [Figure VI-3] would result in further reductions in urbanization proposed east of the San Joaquin River under Alt. 1, plus the entire elimination of Gold Rush City.

Alt. 2 would also result in a 52% reduction in population growth by eliminating all of the residential proposed by Alt. 1, plus all of the residential north of the Civic Center and west of the line of Stanford Blvd. in SPA #2. Total population increase would drop from 23,000 to about 11,000, with total population in 20 years reaching 18,000. The elimination of Gold Rush City would result in further significant changes listed below under impacts.

Impacts:

1. All of the impacts associated with urban reduction in SPA #1 would remain, plus the elimination of Service Commercial and Industrial north of Roth Road and east of I-5.

2. Overall ADT would be reduced by about 121,000, or 49%, for a reduced total of 125,000 ADT. [**significant**]

3. The Stanford Blvd. (Golden Valley Parkway) and Louise Avenue expressway (Gold Rush Boulevard) access to the Stewart Tract would not be necessary. Improvements to interchanges and the addition of auxiliary traffic lanes between interchanges would not be necessary.

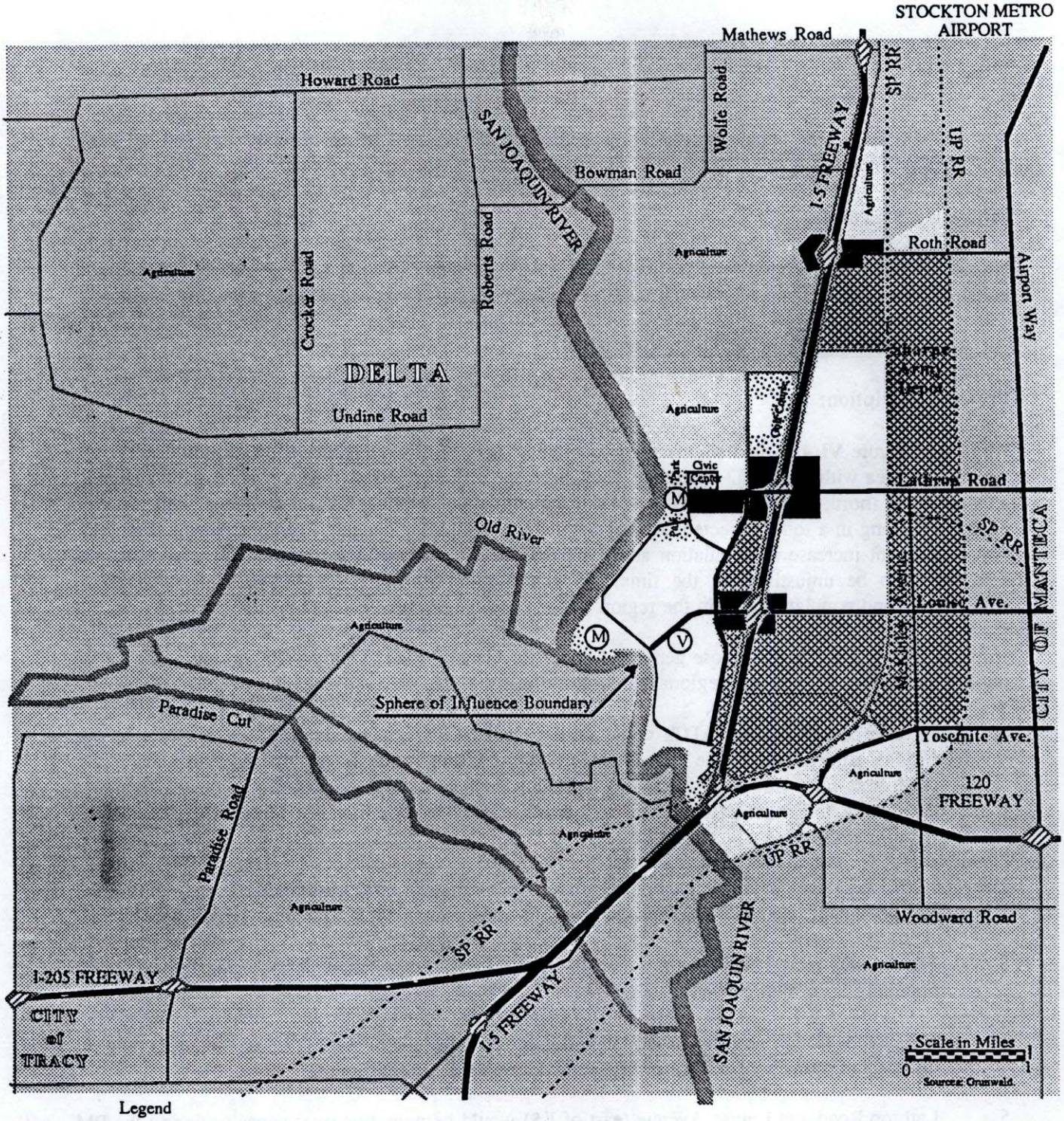
4. Vehicle emissions would be reduced to about the following amounts per day: [**significant**]

   - Carbon Monoxide: reduction from 7.8 to 3.8 tons/day
   - Nitrogen Dioxide: reduction from 1.6 to 0.6 tons/day
   - Total organics: reduction from 0.8 to 0.3 tons/day

5. About 5,200 acres would remain in agricultural production. This does not include the 1,100 acres in agricultural use south of State Route 120 on either side of McKinley Avenue. [**significant**]

6. About 5,200 acres of suitable foraging habitat for the Swainson's hawk would be retained; other wildlife habitat associated with agriculture would remain. However, two previously mapped nesting sites along the San Joaquin River would continue to be threatened by residential development proposed east of the river. [**significant**]

7. There would be less intensive use of the San Joaquin River environment for water-related recreation, including boating. Only two marinas would remain in the Plan, along the east side of the San Joaquin River. [**significant**]



Legend

- Commercial: Stores and Offices
- Industrial and Service Commercial
- Residential Villages
- Community and Open Space
- Theme Park
- Recreation Commercial
- Recreation Residential
- (M) Marinas
- (V) Village Center
- (T) Transit Stations

FIGURE VI-3

20 YEAR GENERAL PLAN: ALT. 2

The Lathrop General Plan Diagram
December 1991