FINAL ENVIRONMENTAL IMPACT REPORT

VOLUME 1: FINAL EIR

VILLAGES OF PATTERSON DEVELOPMENT PLAN PROJECT

STATE CLEARINGHOUSE NO. 2006032043

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Prepared for the City of Patterson by:

TURNSTONE CONSULTING

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INTRODUCTION

A. OVERVIEW

This Environmental Impact Report (EIR) has been prepared by the City of Patterson, as "Lead Agency," pursuant to the California Environmental Quality Act (California Public Resources Code Section 21000 and following, "CEQA") and the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 and following, "CEQA Guidelines"). The EIR has been prepared to address the potential impacts of the Villages of Patterson Development Plan project, which envisions a traditionally-designed, pedestrian-oriented, master-planned community on an approximately 692-acre site immediately north and east of the city limits of Patterson.

B. ORGANIZATION OF THE EIR

This EIR presents six subsequent chapters and six appendices. Chapter I, Summary, briefly describes the project analyzed in the EIR and lists impacts and related mitigation measures in a table, identifying impacts as significant or less than significant and indicating mitigation measures that correspond to the impacts. Chapter I also summarizes the alternatives analyzed in the EIR. Chapter II, Project Description, provides a detailed description of the Villages of Patterson Development Plan project. The analyses of impacts and mitigation measures are presented in Chapter III, Environmental Setting, Impacts, and Mitigation Measures, by environmental topic. Chapter IV, Other CEQA Considerations, includes statutory sections and a list of significant, unavoidable impacts that would occur if the proposed project were implemented. Chapter V, Alternatives, presents and analyzes three alternatives, including the No Action alternative. Chapter VI, Authors and Persons Consulted, lists the preparers of the EIR and those consulted in its preparation. Six appendices are presented at the end of the EIR: Appendix A: Villages of Patterson Notice of Preparation / Initial Study Environmental Checklist Form; Appendix B: Traffic Study; Appendix C: Biotic Study; Appendix D: Environmental Site Assessments, Phase I; and Appendix E: Water Supply Assessment.

Volume 2 of this EIR, Comments and Responses, contains comments on the Draft EIR and responses to those comments, as described below in Section C. CEQA Process.

C. CEQA PROCESS

The City of Patterson is the Lead Agency for the preparation of this EIR, and has the principal responsibility for carrying out or approving the proposed project. An Initial Study and Notice of Preparation of a Draft EIR were published by Patterson on March 8, 2006, and circulated for

public information and review through the State Clearinghouse in Sacramento, at the City of Patterson Community Development Department, and direct mail to public agencies and interested individuals. A formal public scoping meeting was held on March 22, 2006, to receive public input on the information that should be included in the Draft EIR. Written comments on the scope of the Draft EIR were also received from public agencies and interested individuals.

The City of Patterson Community Development Department held a public hearing on August 10, 2006, to provide the public with an opportunity to present oral comments on the Draft EIR. Comments were also submitted in the form of letters and e-mail.

Public comments, and responses to those comments that raise environmental issues, were published in a separate Comments and Responses volume on November 15. 2006. Certain responses to comments called for specific revisions to the Draft EIR text. These changes clarified or corrected the Draft EIR text but did not change any analyses or conclusions of the Draft EIR. On December 12, 2006 the Patterson City Council certified the Draft EIR, together with the Comments and Responses, as a Final EIR, finding it to be accurate and complete.

For clarity and convenience, this Final EIR (Volume 1) consolidates and executes the revisions to the EIR text that are called for by the Comments and Responses (Volume 2). A vertical line in the left margin (such as this) indicates material that is new or revised since publication of the Draft EIR.

As explained in Chapter II, Project Description, decision-makers, including the City and the Local Agency Formation Commission (LAFCO), use the information in the Final EIR in their deliberations on the proposed project. In order to approve the proposed project, written findings must be prepared by the City of Patterson, as Lead Agency, for each significant impact identified in the EIR. These findings identify each significant impact; determine whether the project has been changed to reduce significant impacts to less-than-significant levels; find that changes that would reduce significant impacts are within the jurisdiction of another public agency; or find that mitigation measures or alternatives that would reduce significant impacts are infeasible for identified legal, social, economic, technological, or other reasons, as provided in Section 15091 of the CEQA Guidelines. If significant unavoidable impacts remain after all feasible mitigation measures are imposed on the project, in order to approve the project decision-makers must adopt a written statement of overriding considerations, explaining how they have balanced these significant unavoidable adverse environmental impacts against the benefits of the proposed project.

I. SUMMARY

A. OVERVIEW OF THE PROPOSED PROJECT

The Villages of Patterson Development Plan envisions a traditionally-designed, pedestrian-oriented, master-planned community immediately north and east of the city limits of Patterson. The Plan Area occupies the approximately one-square-mile area formed by State Highway 33 and the California Northern Railroad right-of-way to the west, Eucalyptus Avenue to the north, Sycamore Avenue to the east, and Walnut Avenue to the south (the Plan Area does not include the existing light industrial properties located between the California Northern Railroad right-of-way and N. 1st Street, south of Salado Creek). The Plan Area also includes an approximately 40-acre area at the northeast corner of Olive Avenue and Sycamore Avenue (the eastern half of which is currently owned and used by the City of Patterson as a stormwater detention basin to collect runoff from northeastern Patterson), and an approximately 19-acre area at the southwest corner Walnut Avenue and Sycamore Avenue. The portion of the Plan Area north of Olive Avenue is outside of the City's existing Sphere of Influence but is included in the City's General Plan.

The Development Plan would establish a detailed framework for development of the Plan Area by identifying allowable land uses and their locations, and providing development standards and design guidelines. It would govern review and approval of future specific development projects as they are proposed under the Development Plan. The Development Plan calls for a mixed-use central core ("The Village Circle") surrounded by four residential neighborhood quadrants ("Villages") offering a diverse range of housing types and integrated commercial/office uses, with sites reserved for parks, schools, and other public uses. A commercial/office/light industrial area is planned for the western edge of the site to buffer the Plan Area from the California Northern Railroad and State Highway 33. The Villages of Patterson Plan Area would be linked by a system of roads, parks, and bicycle/pedestrian trails. At buildout, the Villages of Patterson is expected to accommodate up to approximately 3,100 dwelling units (d.u.), up to about 723,800 square feet (s.f.) of commercial/office/light industrial uses, and up to about 267,900 s.f. of Public/Quasi-Public uses.

The Development Plan would establish the general layout and detailed design standards for roadways and intersections in the Plan Area to implement Patterson's General Plan Circulation Element, creating an integrated roadway and pedestrian/bicycle trail system by extending existing streets into the Plan Area. The City of Patterson would provide water supply distribution services, wastewater collection and treatment services, and stormwater collection for the Plan Area through connection to and expansion of these existing service systems to serve the Plan

Area. Patterson Irrigation District Laterals 3 North (also known as Lateral C) and 4 North (also known as Lateral D) would be piped underground in irrigation easements to continue to serve the agricultural lands to the north of the project site. As part of the proposed project, construction of a fire station/police satellite station is planned for the northwest corner of Olive Avenue and N. 1st Street. Various school sites are provided in the Plan Area.

The Villages of Patterson project would require a number of approvals including the following:

- Certification of this EIR;
- Amendments to the City's General Plan Land Use map;
- Prezoning of the Plan Area;
- Amendments to the City's Infrastructure Master Plans;
- Approval of a Water Supply Assessment;
- Approval of a Villages of a Patterson Preliminary and Final Development Plan;
- Approval of a Vesting Tentative Subdivision Map(s);
- Approval of a Development Agreement(s) between the City and applicants;
- Initiate Application to LAFCO (for approvals described below);
- Creation of, or annexation to, a Mello-Roos District;
- Approval of Williamson Act contract cancellations;
- Approval of Water Supply Verifications for any qualifying subdivision;
- Creation of, or annexation to, a fire assessment district;
- Adoption of amendments to the Service Review and Master Service Element for the City's Sphere of Influence by LAFCO;
- Amendment to the City's Sphere of Influence by LAFCO; and
- Reorganization to annex the entire Plan Area to the City, remove the Plan Area from fire and irrigation districts and add it to City service areas by LAFCO.

B. ENVIRONMENTAL EFFECTS FOUND TO BE LESS THAN SIGNIFICANT

A Notice of Preparation / Initial Study for the proposed project was published on March 8, 2006 (Appendix A to this EIR). On the basis of the Initial Study, the City of Patterson determined that an Environmental Impact Report (EIR) was required. The Initial Study determined that the effects of the project in the following issue areas would either be less than significant or would be reduced to a less-than-significant level by mitigation measures included in the project, and thus

required no further analysis in the EIR: mineral resources, public services,[1] recreation, wastewater, geology/soils, and population/housing.

A number of project impacts identified in the EIR were found to be less than significant, requiring no mitigation. These impacts are listed below and are further discussed in this document.

- Development of residential uses under the Villages of Patterson project could create potential land use compatibility conflicts with surrounding, ongoing agricultural operations.
- Development under the Villages of Patterson Development Plan may create the potential for conflict between the proposed commercial and light industrial uses at the western edge of the Plan Area and adjacent residential uses to the east.
- Development of the proposed Villages of Patterson project would alter distant views across the project site from Sycamore Avenue to the Diablo Range.
- Development of the Villages of Patterson project would change the existing expansive agricultural visual character of the project vicinity.
- Proposed commercial development under the Villages of Patterson Development Plan would require higher levels of outdoor lighting than surrounding residential development, creating the potential for glare on nearby residential properties.
- Development of the proposed project may burden continued agricultural operations surrounding the project site, and within the project site prior to development under the proposed Development Plan.
- Development of the Villages of Patterson project would contribute substantial amounts of traffic to intersections along State Route 33 that are located very close together and intersect with SR 33 at oblique angles, making turning difficult.
- Proposed development in the Villages of Patterson Development Plan would affect traffic on roadway segments in the vicinity of the Plan Area.
- The Villages of Patterson project would contribute to the demand for bicycle and pedestrian facilities in the City of Patterson.
- The Villages of Patterson project would contribute to traffic volumes on roadway and freeway segments in the project study area.
- Motor vehicle emissions would locally contribute to elevated concentrations of carbon monoxide.
- Emissions during project operation would cause sensitive receptors to be exposed to TACs.
- Emissions of objectionable odors could occur during project operation.

[1] Although the Initial Study found that environmental impacts related to the provision of services would be less-than-significant for the purposes of CEQA, the City's capacity to provide services under the proposed project will be analyzed in a Municipal Services Review (MSR) as required by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. Also, as discussed below, impacts related to schools and the health care district will be discussed in this EIR for informational purposes.

- Increased traffic could cause substantial noise increases for existing sensitive receptors in the project vicinity.
- Other sources of noise associated with the proposed project or in the vicinity of the proposed project could generate noise levels inconsistent with the City's noise compatibility goals
- Future traffic could cause substantial noise levels for sensitive receptors in the Villages of Patterson Plan Area.
- Future land uses at the project site may potentially create a significant hazard to the public or the environment as a result of routine transport, use, production, or disposal of hazardous materials.
- Implementation of the project would not result in the emission or handling of hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of an existing or proposed school.
- Implementation of the proposed project would not involve development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.
- Implementation of the Development Plan would result in loss of aquatic habitat within concrete-lined laterals.
- Implementation of the Development Plan would result in loss of orchard, ruderal, and developed habitat.
- Implementation of the Development Plan would result in loss of foraging habitat for Northern Harriers and Tricolored Blackbird.
- Implementation of the Development Plan would result in loss of nesting and foraging habitat for Loggerhead Shrikes.
- The increase in impervious surfaces could adversely affect groundwater recharge.
- The proposed change in land use at the project area could affect regional groundwater quality.
- Groundwater treatment would consume substantial energy.
- Supplying water to the Villages of Patterson project would require extension of water supply conveyance infrastructure into previously unserved areas.
- Development of the proposed Villages of Patterson project may disturb or eliminate subsurface archeological resources from the prehistoric and historic eras.
- Development of the proposed Villages of Patterson project would require that segments of irrigation Laterals 3 North and 4 North be piped underground through the project site, altering Patterson's historic irrigation system.
- The project would generate additional school-aged children which would increase the demand for school facilities.
- The expansion of employment opportunities in Patterson may attract households with school-aged children resulting in a secondary impact on area schools.

- The project would generate additional people and employment opportunities which would increase the demand for health care facilities.

C. PROJECT ALTERNATIVES

The alternatives to the proposed Villages of Patterson Development Plan analyzed in this EIR are:

- No Project / No Action Alternative: This alternative assumes no new development on the project site, and a continuation of existing uses. No Sphere of Influence amendment, annexation, nor General Plan amendment by the City of Patterson would be necessary.
- Existing General Plan Alternative: This alternative assumes development of the project site consistent with existing City of Patterson General Plan land use designations for the project site: Low Density Residential (2,500 units); Heavy Industrial (155,000 gross sq. ft.); and Public/Quasi-Public (a school). A General Plan amendment would not be required under this alternative. However, a Sphere of Influence amendment and annexation of the site would be necessary.
- Decreased Project Site Alternative: This alternative assumes a similar mix of uses as that of the proposed project but confined to the portion of the project site south of Olive Avenue. The development capacity under each land use category would be decreased by roughly half that of the proposed project.
- Off-Site Alternative: This alternative assumes development of the 522-acre area to the east and southeast of the City, outside of the incorporated boundaries of the City but within the City's General Plan Area (south of Walnut Avenue, North of the Main Canal and east of State Highway 33). The alternative site would be developed with the same types and density of uses as those of the proposed project. The development capacity under each land use category would be decreased by about 25 percent from that of the proposed project, commensurate with the smaller development site.

D. POTENTIAL AREAS OF CONCERN OR UNRESOLVED ISSUES

Section 15123 of the CEQA Guidelines requires the agency preparing an EIR to disclose any areas of controversy about the project that became known to it during the preparation of the EIR.

On March 8, 2006 the City of Patterson published and circulated a Notice of Preparation / Initial Study (Appendix A to this EIR) for the proposed project for a 30-day public comment period. On March 22, 2006, the City of Patterson held a public scoping meeting to receive comments on the scope of the EIR. One member of the public spoke about the need for a new east-west expressway along the existing Zacharias Road and a new interchange at Interstate 5.

The City has received 13 letters in response to the Notice of Preparation / Initial Study. These letters raise issues concerning the following environmental topics: requirements for public utilities easements; safety along the California Northern Railroad corridor and crossings; LAFCO requirements for annexation and Williamson Act properties; water quality; scope of

transportation impacts covered in the EIR; and loss of Prime Farmland. These issues are addressed in this EIR or Notice of Preparation / Initial Study.

A number of letters concerned the need for an east-west expressway along the existing Zacharias Road and a new interchange at Interstate 5. These potential future improvements are not part of the proposed Villages of Patterson project, nor are they required as mitigation for project impacts. Discussions at the City and County level regarding these improvements are preliminary at this time. Study of the need for these improvements has not yet begun. As such, analysis of these improvements, or analysis of the proposed Villages of Patterson Project in the context of these potential future improvements, will not be discussed in this EIR.

One letter concerned project impacts on school facilities. While raising various issues that will be addressed in the EIR, the letter primarily takes issue with the state's mechanism created in 1998 to resolve school facility financing issues, legislation commonly known as "SB-50" as indicated in the letter. In short, the Patterson Joint Unified School District establishes and levies what are known as "Level II Fees" on all new residential construction within the District's boundaries. Under SB 50, the state Legislature has preempted and fully occupied the subject matter of requirements related to school facilities levied or imposed in connection with, or made a condition of, any land use approval and the mitigation of the impacts of land use approvals on the need for new school facilities.[2]

In addition, payment of fees levied by school districts under SB 50 are deemed to be "full and complete" mitigation of the impacts of any land use approvals, including actions by cities and local agency formation commissions.[3] Further, the legislature specifically states that notwithstanding the provisions of CEQA, SB-50 is deemed to provide "full and complete" school facilities mitigation.[4]

The District's letter contends that the Notice of Preparation states that "the 'Developer' has elected to only pay 'School Fees' per Dwelling Unit" under SB-50. However, the Notice of Preparation correctly points out that the District has availed itself of the authority under SB-50 to directly impose fees upon new residential construction within its boundaries. Once this is done, the provisions above apply and deem this full mitigation for school facilities under CEQA and any other law.

The letter also asserts that transportation facilities through the City to the existing high school will be adversely affected with respect to traffic, air quality and noise. Traffic, air quality and noise impacts to surrounding streets are covered in this EIR under these topic sections. The letter

[2] Government Code Section 65995(e).
[3] Government Code Section 65995(h).
[4] Government Code Section 65996(b).

further asserts that Williamson Act Contracts cannot be terminated unless an adequate Mitigation Agreement for School Facilities is first entered into. The City is aware of no such provision under California law. It should be noted that the effects of school facilities on the environment are studied in this EIR and considered throughout the document at the appropriate level of review for this master planned community. In any case, while no mitigation beyond SB-50 fees can be mandated for the project, the impacts of the project on school facilities will be addressed in the EIR out of courtesy to the school district.

Finally, during the preparation of the draft EIR, the City became aware that the Del Puerto Health Care District had undertaken a significant revision in proposed capital facilities fees for the district. The district is likely to request the City to impose these fees on projects within the City's jurisdiction as the district is without power to impose these fees directly. Consequently, the impact of the project on the need for health care district facilities will be discussed in the EIR.

E. SUMMARY TABLE OF IMPACTS AND MITIGATION

Table I-1: Summary of Impacts and Mitigation Measures summarizes the analyses contained in Chapter III for each environmental topic addressed in the EIR. Environmental impacts and their degree of significance are listed, followed by mitigation measures identified in this EIR and the level of significance after mitigation.

Table I.1: Summary of Impacts and Mitigation Measures				
Impact		**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
Land Use, Plans, and Policies				
A.1	Development of residential uses under the Villages of Patterson project could create potential land use compatibility conflicts with surrounding, ongoing agricultural operations.	**LS**	No mitigation necessary	**LS**
A.2	Development under the Villages of Patterson Development Plan may create the potential for conflict between the proposed commercial and light industrial uses at the western edge of the Plan Area and adjacent residential uses to the east.	**LS**	No mitigation necessary	**LS**
Visual Resources				
B.1	Development of the proposed Villages of Patterson project would alter distant views across the project site from Sycamore Avenue to the Diablo Range.	**LS**	No mitigation necessary	**LS**
B.2	Development of the Villages of Patterson project would change the existing expansive agricultural visual character of the project vicinity.	**LS**	No mitigation necessary	**LS**
B.3	Proposed commercial development under the Villages of Patterson Development Plan would require higher levels of outdoor lighting than surrounding residential development, creating the potential for glare on nearby residential properties.	**LS**	No mitigation necessary	**LS**

LS = Less than Significant S = Significant SU = Significant and Unavoidable

Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
Agricultural Resources				
C.1	Implementation of the proposed project would directly result in the permanent loss of Prime Farmland.	**SU**	**C.1.** Prior to building permit issuance, applicant shall demonstrate, in a form acceptable to the City of Patterson, that mitigation for the direct permanent loss of productive agricultural land on a one-to-one acreage basis has been accomplished in one or more of the following ways: • Monetary contribution to the California Farmland Conservancy Fund under the California Farmland Conservancy Program in an amount sufficient to allow the conservation of one acre of comparable farmland in Stanislaus County (or other similar land within the San Joaquin Valley as may be acceptable to the City) for each acre of farmland covered by the building permit sought under the proposed project. The amount of such contribution shall, at a minimum, reflect the then-current value of a conservation easement for comparable agricultural land in Stanislaus County, plus 10 percent for program administration under the Farmland Conservancy Program. The per acre valuation of such easement shall be acceptable to the Community Development Director, who may require that the valuation of such easement on comparable agricultural land be documented by appraisal; or • The acquisition of a conservation easement or easements on agricultural lands of sufficient acreage to permanently conserve one acre of farmland in Stanislaus County (or other similar land within the San Joaquin Valley as may be acceptable to the City) for each acre covered by the building permit sought under the proposed project. Participation in the Williamson Act Easement Exchange Program in accordance with Government Code Section 51256 shall be credited on an acre-for-acre basis toward satisfying the requirements of this mitigation; or • Any other strategy approved by the City of Patterson for the permanent conservation of a comparable quantity and quality of	**SU**

LS = Less than Significant S = Significant SU = Significant and Unavoidable

Table I.1: Summary of Impacts and Mitigation Measures				
Impact		**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
			agricultural land in Stanislaus County (or other similar land within the San Joaquin Valley as may be acceptable to the City). Contribution to the California Farmland Conservancy Fund, acquisition of a conservation easement or an equivalent program to conserve farmland would serve to compensate for the loss of Prime Farmland. However, such mitigation would not mitigate the impact of the loss of Prime Farmland on the project site to a less-than-significant level. Restoration and/or recovery of Prime Farmland from existing urban uses would offset the direct impact of loss of Prime Farmland from new urban uses, but it is not proposed as a mitigation measure because such a measure would be unreasonably costly, inefficient and, therefore, infeasible. Reducing the amount of Prime Farmland converted to new urban uses is discussed in Chapter V, Alternatives, of this report, rather than proposed here as a mitigation measure.	
C.2	Development of the proposed project may burden continued agricultural operations surrounding the project site, and within the project site prior to development under the proposed Development Plan.	**LS**	No mitigation necessary	**LS**
C.3	Implementation of the Villages of Patterson Development Plan would contribute to the cumulative loss of Prime Farmland in the General Plan Area.	**SU**	**C.3.** Same as Mitigation Measure C.1.	**SU**
Transportation and Circulation				
D.1	Development of the proposed Villages of Patterson project would affect traffic levels of service at several study intersections. ***(cont'd.)***	**S**	**D.1.** The City shall construct the intersection improvements listed below concurrently or in advance of development in the Villages of Patterson Development Plan area that would result in sufficient vehicle trips to reduce the level of service below LOS D at study	**LS**

LS = Less than Significant S = Significant SU = Significant and Unavoidable

Table I.1: Summary of Impacts and Mitigation Measures			
Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
(cont'd.) ***(cont'd.)***		intersections. The City shall establish an appropriate funding mechanism, and Villages of Patterson developers shall either construct the improvements or contribute a fair share of the costs of these traffic mitigation measures. **D.1.a. Intersection 1. Sperry Avenue/I-5 SB Ramps.** Signalize intersection, add a southbound left turn lane and two westbound left turn lanes. **D.1.b. Intersection 2. Sperry Avenue/I-5 NB Ramps.** Signalize intersection, add an eastbound left turn lane, a westbound right turn lane, and a northbound right turn lane. **D.1.c. Intersection 3. Sperry Avenue/Rogers Road.** Add northbound left turn and right turn lanes; two westbound left turn lanes; a northbound left turn lane and a shared through/right turn lane; and a southbound through lane. **D.1.d. Intersection 4. Sperry Avenue/Baldwin Road.** Add a westbound through lane. **D.1.e. Intersection 6. Sperry Avenue/American Eagle Drive.** Add a southbound right turn lane. **D.1.f. Intersection 7. Sperry Avenue/Las Palmas Avenue.** Signalize intersection. **D.1.g. Intersection 8. Sperry Avenue/Ward Avenue.** Add two eastbound left turn lanes; restripe the intersection to convert the existing shared through/left turn lane to a shared through/right turn lane; and add a westbound left turn lane and a westbound through lane. **D.1.h. Intersection 10. Sperry Avenue/SR 33.** Signalize intersection; add eastbound left turn lane; add westbound left turn lane; add two northbound left turn lanes; add a southbound left turn lane and convert the shared through/left lane to a shared through/right lane.	

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	(cont'd.)		**D.1.i. Intersection 14. Zacharias Road/SR 33.** Add a northbound left turn lane and an eastbound left turn lane at approximately 92 percent buildout or when conditions warrant. **D.1.j. Intersection 17. SR 33/Eucalyptus Avenue.** Signalize intersection and add southbound left turn and through lanes; add a northbound through lane. **D.1.k. Intersection 18. Olive Avenue/SR 33.** Signalize intersection, add left turn lanes on all four approaches, and upgrade existing railroad crossing arms with automatic signal protection including a four-quadrant flashing light system, based on guidelines contained in the Manual of Uniform Traffic Control, Chapter 8. **D.1.l. Intersection 19. Walnut Avenue/M Street/ SR 33.** Signalize intersection, add an eastbound and westbound left turn lane, restripe the eastbound and westbound shared through/left turn lane as a shared through/right turn lane, and upgrade existing railroad crossing arms with automatic signal protection including a four-quadrant flashing light system, based on guidelines contained in the Manual of Uniform Traffic Control, Chapter 8. **D.1.m. Intersection 22. E. Las Palmas Avenue/ Sycamore Avenue.** Signalize intersection. **D.1.n. Intersection 24. West Main Avenue/ Carpenter Road.** Signalize intersection and add left turn lanes on all four approaches. **D.1.o. Intersection 25. Crows Landing Road/West Main Avenue.** Signalize intersection; add left turn lanes on all four approaches; and restripe the eastbound, northbound, and southbound approaches to convert the through and left turn lane as a shared through/right turn lane.	
D.2	Development of the Villages of Patterson project would contribute substantial amounts of traffic to intersections along State Route 33 that	**LS**	No mitigation necessary	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
	are located very close together and intersect with SR 33 at oblique angles, making turning difficult.			
D.3	Proposed development in the Villages of Patterson Development Plan would affect traffic on roadway segments in the vicinity of the Plan Area.	**LS**	No mitigation necessary	**LS**
D.4	The Villages of Patterson project would contribute to the demand for bicycle and pedestrian facilities in the City of Patterson.	**LS**	No mitigation necessary	**LS**
D.5	The Villages of Patterson project would contribute considerably to future cumulative significant impacts at study intersections. ***(cont'd.)***	**S**	**D.5.** The City shall construct the intersection improvements listed below concurrently or in advance of development in the Villages of Patterson Development Plan area that would result in sufficient vehicle trips to reduce the level of service below LOS D at study intersections. The City shall establish an appropriate funding mechanism, and Villages of Patterson developers shall contribute a fair share of the costs of these traffic mitigation measures. **D.5.a. Intersection 1. Sperry Ave/I-5 SB Off Ramps**. Signalize intersection; add an eastbound through lane; add a southbound left turn lane; and add two westbound left turn lanes. **D.5.b. Intersection 2. Sperry Ave/I-5 NB On-Ramps.** Signalize intersection; add two northbound right turn lanes; add eastbound left turn and through lanes; and add westbound right turn and through lanes. **D.5.c. Intersection 7. Sperry Ave/Las Palmas Ave.** Signalize intersection; add an eastbound right turn lane. **D.5.d. Intersection 8. Sperry Ave/Ward Ave.** Add a northbound left turn lane; add two eastbound left turn lanes, and restripe the shared through and left turn lane as a shared through and right turn lane; add a southbound right turn lane; and add westbound left turn	See below for each intersection **LS** **LS** **LS** **SU**

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Table I.1: Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
(cont'd.)		and through lanes.	
		D.5.e. Intersection 9. Sperry Ave/S. Del Puerto Ave. Add eastbound and westbound left turn and through lanes.	**SU**
		D.5.f. Intersection 10. Sperry Ave/SR 33. Signalize intersection; add two northbound left turn lanes; add eastbound left and right turn lanes; add a westbound left turn lane; and add a southbound left turn lane and restripe the shared through and left turn lane as a shared through and right turn lane.	**SU**
		D.5.g. Intersection 12. Ward Ave/American Eagle Dr. Add eastbound, westbound, northbound and southbound left turn lanes.	**SU**
		D.5.h. Intersection 13. SR 33/Ward Ave. Signalize intersection; add a northbound left turn lane.	**LS**
		D.5.i. Intersection 14. Zacharias Rd/SR 33. Signalize intersection; add two northbound left turn lanes; and add an eastbound left turn lane.	**LS**
		D.5.j. Intersection 16. Rogers Rd/SR 33. Signalize intersection; add a northbound left turn lane; add two eastbound left turn lanes; and add a southbound right turn lane.	**SU**
		D.5.k. Intersection 17. SR 33/Eucalyptus Ave. Signalize intersection. Northbound: add a northbound right turn lane; add a southbound left turn lane; and add a westbound left turn lane.	**LS**
		D.5.l. Intersection 18. Olive Ave/SR 33. Signalize intersection; add eastbound, westbound, northbound and southbound left turn lanes.	**LS**
		D.5.m. Intersection 19. Walnut Ave/M Street/SR 33. Signalize intersection; add eastbound and westbound left turn lanes and restripe shared through and left turn lanes as shared through and right turn lanes; add northbound and southbound left and right turn lanes.	**LS**
		D.5.n. Intersection 22. E. Las Palmas Ave/Sycamore Ave. Signalize intersection.	**LS**
(cont'd.)		**D.5.o. Zacharias Road between SR 33 and Baldwin Road.** Establish an annual traffic monitoring program for this segment of	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
	(cont'd.)		Zacharias Road. When conditions warrant, at morning and/or afternoon peak hour volumes of about 800 vehicles per hour, widen this segment of Zacharias Road from two to four lanes.	
D.6	The Villages of Patterson project would contribute to traffic volumes on roadway and freeway segments in the project study area.	**LS**	No mitigation necessary	**LS**
Air Quality				
E.1	Emissions of criteria pollutants during project construction would contribute to existing violations of the ambient air quality standards in the region. ***(cont'd.)***	**S**	**E.1a.** The construction plans for all project phases shall incorporate the following recommendations from the District to minimize PM_{10} emissions during construction phases: • The project developers shall review Regulation VIII of the District's regulations and submit a compliance plan to the City of Patterson prior to commencing any phase of construction. The compliance plan must demonstrate that the current requirements of Regulation VIII will be implemented. • Prior to the issuance of construction contracts, the project developers shall perform a review of new technology, such as the use of particulate filters, to determine if advances in emissions reduction are available for use. The District should be consulted during this process. • The project developers shall limit traffic speed on unpaved roads to 15 miles per hour. • The project developers shall install sandbags or other control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. • The project developers shall install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site, to prevent track-out of soil to public roadways. • The project developers shall install windbreaks at windward sides of construction areas, if necessary to prevent wind-blown dust.	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
(cont'd.)		• The project developers shall suspend excavation and grading activity when winds exceed 20 miles per hour. • The project developers shall limit the area subject to excavation, grading, and other construction activity at any one time. • The project developers shall ensure that the accumulation of mud or dirt is expeditiously removed from adjacent public streets at least once every 24 hours when construction activities are occurring (the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions). • The project developers shall implement activity management to reduce cumulative short-term impacts. **E.1b.** The developers shall implement the following measures to control construction emissions of ozone precursors: • The project developers shall use alternative-fuel construction equipment, where feasible. • The project developers shall minimize idling time (e.g., to a 10-minute maximum). • The project developers shall limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use to the minimum practical. • Prior to the issuance of construction contracts, the project developers shall perform a review of new technology, such as the use of diesel oxidation catalysts, to determine if advances in emissions reduction are available for use. The District should be consulted during this process. • The project developers shall replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set), where feasible.	

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
E.2	Emissions of criteria pollutants during project operation would contribute to existing violations of the ambient air quality standards in the region.	**SU**	**E.2a.** The site design shall implement the following design features to reduce emissions from motor vehicle activity: • The project developers shall incorporate sidewalks and bicycle paths throughout the site and connect those facilities to any nearby pedestrian and bicycle facilities, including those located at open space areas, parks, schools, or commercial areas. • The project shall include mixed residential and commercial land use, including live/work spaces, with schools and parks within walking or biking distance. • The project developers shall incorporate secure bicycle storage and parking facilities throughout the site. • Site plan design shall encourage pedestrian movement between adjacent land uses. • Incentives such as preferred location of 4 percent of parking for carpoolers and hybrid or other clean-fuel vehicles shall be provided. **E.2b.** The site design shall implement the following site design features to reduce emissions from energy consumption: • The project developers shall incorporate energy efficient building design features including automated control systems for heating and air conditioning and energy efficiency beyond the requirements of the Building Code (Title 24, California Code of Regulations), increased wall and ceiling insulation beyond Building Code requirements, light colored roof materials to reflect heat, and energy efficient lighting and lighting controls. • The project developers shall design buildings with window and/or skylight oriented to maximize natural cooling and heating in accordance with the California Energy Commission's 2005 Building Energy Efficiency Standards. • The project developers shall incorporate approved deciduous trees to provide shade on the south- and west-facing sides of buildings.	**SU**

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Table I.1: Summary of Impacts and Mitigation Measures				
Impact		**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
E.3	Motor vehicle emissions would locally contribute to elevated concentrations of carbon monoxide.	**LS**	No mitigation necessary	**LS**
E.4	Emissions during project operation would cause sensitive receptors to be exposed to TACs.	**LS**	No mitigation necessary	**LS**
E.5	Emissions of objectionable odors could occur during project operation.	**LS**	No mitigation necessary	**LS**
E.6	The project would cause a cumulatively considerable net increase of pollutants for which the San Joaquin Valley is designated as nonattainment.	**SU**	**E.6.** Same as Mitigation Measures E.2a and E.2b.	**SU**
E.7	The proposed project, including annexation of the proposed parcels to the City of Patterson, could conflict with or obstruct implementation of the District's ozone and PM_{10} attainment plans. (Less than Significant with Mitigation)	**S**	**E.7.** Participation in the Indirect Source Review program would either reduce the emissions from the project in line with the District's projections or fund off-site emission reduction programs.	**LS**
Noise				
F.1	Project-related construction could cause a substantial, though intermittent and short-term, increase in noise levels. ***(cont'd.)***	**S**	**F.1.** Construction-related activities shall be conducted in accordance with the following: • Construction activities shall be restricted to the hours between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 9:00 a.m. and 7:00 p.m. on Saturday, with no construction on Sundays or federal and state holidays; minor construction equipment servicing and maintenance will be exempted from this restriction. • During construction, mufflers shall be provided for all heavy construction equipment and all stationary noise sources in accordance with the manufacturers' recommendations. • Stationary noise sources and staging areas shall be located as far as	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
	(cont'd.)		is feasible from existing residences, or contractors shall be required to provide additional noise-reducing engine enclosures (with the goal of achieving approximately 10 dBA of reduction compared to uncontrolled engines). • Air compressors and pneumatic equipment should be equipped with mufflers, and impact tools should be equipped with shrouds or shields (with the goal of achieving the noise levels "…with feasible noise control" listed in Table III.F-5). • If for construction purposes, locating stationary construction equipment near existing residential uses is required, an eight-foot tall sound rated fence should be erected between the equipment and the sensitive receptor. The fence should be located as close to the equipment as is feasible. • Construction vehicle access routes shall be designed to minimize the impact on existing residences and occupied hospital facilities. • A "construction liaison" shall be designated to ensure coordination between construction staff and neighbors to minimize disruptions due to construction noise. Occupants and property owners of residences within 400 feet of construction activity shall be notified in writing of the construction schedule and the contact information for the construction liaison. • A qualified acoustical engineer should be retained during the construction phase of the project to determine if the noise levels generated from construction equipment at the project site to adjacent property lines are within the standards.	
F.2	Increased traffic could cause substantial noise increases for existing sensitive receptors in the project vicinity.	**LS**	No mitigation necessary	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
F.3	Future traffic could cause substantial noise levels for sensitive receptors in the Villages of Patterson Plan Area.	**LS**	No mitigation necessary	**LS**
F.4	Light Industrial activities and truck loading operations could generate noise levels inconsistent with the City's noise compatibility goals.	**S**	**F.4.** Each development that involves light industrial or commercial land uses that would include outdoor mechanical equipment shall carry out the following: • Retain a qualified acoustical engineer to review the development project during the design phase, prior to approval of building permits; • Submit a report to the City by the acoustical engineer that calculates the noise levels at the nearest residential property lines that would result from proposed mechanical equipment, determines whether noise levels would exceed the City's "Normally Acceptable" standards or those presented in Table III.F-1, and identifies means to reduce exterior noise levels to the standards, or explains why such reduction is infeasible; • Noise reduction measures that must be considered by the acoustical engineer include: – use of acoustical silencers on inlet and discharge openings of mechanical equipment, – installation of parapets or enclosures with louvers or other barriers to shield noise, – orientation of equipment so that it faces away from sensitive receptors, – orientation or setback of buildings to increase distance from sensitive receptors; • Other noise reduction measures that would accomplish the same or similar purposes should be included if applicable to the particular building proposed.	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
F.5	Other sources of noise associated with the proposed project or in the vicinity of the proposed project could generate noise levels inconsistent with the City's noise compatibility goals	**LS**	No mitigation necessary	**LS**
F.6	Cumulative development could lead to noise conflicts between incompatible land uses.	**S**	**F.6.** Same as Mitigation Measures F.1 and F.4.	**LS**
Hazardous Materials				
G.1	Site grading and development activities could result in releases of contaminants from soils or groundwater that may affect the health and safety of construction workers, future site users, and the general public. ***(cont'd.)***	**S**	**G.1a.** As a condition of approval for construction, excavation, demolition, or grading permits for the project site, the following subsurface investigations shall be performed to evaluate recognized environmental conditions identified in Phase I ESA investigations for the project site: • Limited site-wide shallow soil sampling and analysis of samples for organochlorine pesticides, chlorinated herbicides, and metals shall be collected by a qualified environmental professional in accordance with the methodology in DTSC's *Interim Guidance for Sampling Agricultural Fields for School Sites, Second Revision*, 26 August 2002, and DTSC's informal policy on redevelopment of former agricultural areas. - All sampling activities shall be conducted prior to site grading and development activities. Sampling of areas previously sampled during the PEA prepared for the proposed Eastside Middle School Site, 361 Walnut Avenue, need not be included in the sampling activities. - The project sponsor and its successors shall also ensure that sampling of areas that were formerly or are currently used for pesticides or fertilizer handling mixing and/or storage is conducted by a qualified environmental professional for the purpose of characterizing these areas, and identifying potential	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures			
Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
(cont'd.) ***(cont'd.)***		risks/hazards to construction workers and future site users. - As specified in DTSC's *Interim Guidance*, any detected organic compounds or metals above naturally-occurring concentrations must be evaluated in a risk assessment, and additional remedial action such as soils removal may be required, depending on the results of the environmental investigation and risk assessment. - The results of the soil sampling investigations shall be reported by a qualified environmental professional to the City and agency(ies) providing regulatory oversight, and the results of the investigation shall include recommendations for future actions, including additional remediation, as necessary. • Shallow soil samples shall be collected near the perimeter of existing or former structures with confirmed or suspected lead-based paint by a qualified environmental professional. The purpose of the investigation shall be to determine whether lead particles from lead-based paint may have affected soils near buildings within the project area. • Soil samples shall be collected by a qualified environmental professional to evaluate potential petroleum hydrocarbon contamination issues in the project area parcels adjacent to the railroad right-of-way prior to development. The purpose of the investigation shall be to determine potential risks/hazards to construction workers, future site users, and the general public during and following construction activities, and the need for any remediation prior to site grading and development. - Soil sampling results shall be compared to U.S. EPA Preliminary Remediation Goals (PRGs) appropriate for the proposed future land use at the parcel (i.e., residential or commercial/industrial). - If hazardous materials are identified in excess of U.S. EPA PRGs, a Human Health Risk Assessment (HHRA) shall be	

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Table I.1: Summary of Impacts and Mitigation Measures			
Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
(cont'd.)		performed by a qualified environmental professional. The HHRA shall describe measures that must be implemented to ensure that any potential added health risks to construction workers, maintenance and utility workers, site users, and the general public as a result of hazardous materials are reduced to a cumulative risk of less than 1×10^{-6} (one in one million) for carcinogens and a cumulative hazard index of 1.0 for non-carcinogens, or as required by a regulatory oversight agency. The HHRA would be subject to review and/or approval by SCERD and/or other regulatory oversight agencies. - The potential risks/hazards to human health in excess of these goals would be reduced either by remediation of the contaminated soils or groundwater (e.g., excavation and off-site disposal and/or extraction/treatment of groundwater) and/or implementation of institutional controls and engineering controls (IC/EC). IC/EC may include the use of hardscape (buildings and pavements), importation of clean soil in landscaped areas to eliminate exposure pathways, and deed restrictions. If IC/EC are implemented, an Operations and Maintenance Program must be prepared and implemented to ensure that the measures adopted are maintained throughout the life of the project. If IC/EC are implemented, the Operations and Maintenance Program would be subject to review and approval by SCERD and/or other regulatory oversight agencies. **G.1b.** As a condition of approval for construction, excavation, demolition, or grading permits for the project site, all ASTs and USTs shall be removed prior to site grading or site development activities within the proposed project area, in accordance with state and local requirements. In addition, the nine properties identified in the Brown and Caldwell Phase I ESA (2006) for the Villages of Patterson project shall also be investigated for the potential presence of undocumented	
(cont'd.)			

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Table I.1: Summary of Impacts and Mitigation Measures			
Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
(cont'd.)		ASTs and USTs. The AST and UST removals shall be completed by a qualified environmental professional, under a permit(s) obtained from the SCERD. Soil and/or groundwater samples shall be collected at the time of removal and analyzed as directed by the SCERD and the findings of the sampling effort shall be documented by the qualified environmental professional and submitted to SCERD and the City. Sampling results shall be compared to U.S. EPA PRGs, and additional actions performed, as described above in Mitigation G.1a. **G.1c.** Prior to activities involving soil disturbance on the parcel owned by the City of Patterson and used as a stormwater detention basin, a Phase I environmental site assessment or an Update of the Brown and Caldwell Phase I ESA shall be conducted by a qualified environmental professional (e.g., a California-registered environmental assessor) for this parcel. The new or updated Phase I ESA shall be conducted to identify specific current or historical land uses that have or may have included the storage or generation of hazardous materials and the potential for releases of hazardous materials that may have impacted the site. The assessment shall be performed in conformance with standards adopted by the ASTM for Phase I ESAs. The Phase I ESA (or Phase I ESA update) shall also present recommendations for further investigation of the site (if necessary). The Phase I ESA (or Phase I ESA Update) report shall be submitted to the City, upon completion. If a Phase I ESA (or Phase I ESA Update) were to indicate that a release of hazardous materials could have affected the location(s) where soil disturbance will occur, a soil and/or groundwater investigation shall be conducted prior to soil disturbance by a qualified environmental professional to assess the presence and extent of contamination at the site and the potential risks/hazards to human health and public safety from the contamination (if any). The soil and/or groundwater investigation shall be conducted in accordance	
(cont'd.)			

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Table I.1: Summary of Impacts and Mitigation Measures			
Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
(cont'd.) ***(cont'd.)***		with state and local guidelines and regulations, with oversight from a regulatory agency (e.g., SCERD). The findings of the investigation shall be documented in a written report and shall be submitted to the City and the regulatory agency. Sampling results shall be compared to U.S. EPA PRGs, and additional actions performed, as described above in Mitigation G.1a. **G.1d.** Prior to approval for any demolition, grading, or construction permits at the project site, a Construction Risk Management Plan (CRMP) shall be prepared with provisions to protect construction workers and the nearby public from health risks from residual contaminants in site soils and groundwater during project construction. • The CRMP shall summarize previous environmental investigations and health risk assessments conducted for the project site (as required in Mitigation Measures G.1a, G.1b, and G.1c). • In accordance with state and federal laws and regulations, the CRMP shall describe required worker health and safety provisions for all workers potentially exposed to contaminated soil and groundwater, including air monitoring. Action levels for contaminants of concern shall be established, with detailed descriptions of corrective actions to be taken in the event that the action levels are reached during monitoring. • The CRMP shall also provide procedures to be undertaken in the event that previously unreported contamination or subsurface hazards (such as undocumented USTs, septic systems, and wells) are discovered during construction and as also required by Education Code 17213.2 (e) for school sites; incorporate construction safety measures for excavation and other construction activities; establish detailed procedures for the safe storage, stockpiling, use, and disposal of contaminated soils and groundwater and other hazardous materials at the project site;	

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	(cont'd.)		provide emergency response procedures; and designate personnel responsible for implementation of the CRMP during the construction and operational phases of the project. • The CRMP shall be submitted to the City.	
G.2	Demolition or modification of structures with lead-based paint, asbestos-containing materials, or other hazardous building materials could release airborne particles of hazardous materials, which may affect the health of construction workers, future school site users, and the general public.	**S**	**G.2.** As a condition of approval for any demolition permit for a structure or facility potentially containing lead or asbestos under the proposed project, a lead-based paint and asbestos-containing survey shall be performed at the structure or facility by a certified environmental professional. Also, any major modification to structures/facilities constructed prior to 1980 shall require a similar lead and asbestos survey for those portions of the structure to be modified. Based on the findings of the survey, all loose and peeling lead-based paint and identified asbestos hazards shall be abated by a certified contractor in accordance with local, state, and federal requirements, including the requirements of the San Joaquin Valley Air Pollution Control District. Other hazardous materials and wastes generated during demolition or renovation activities, such as fluorescent light tubes and mercury switches, shall be classified, handled, and disposed of in accordance with applicable universal and hazardous waste regulations.	**LS**
G.3	Construction of new schools on land with previous agricultural land uses that could have involved the use of pesticides and petroleum hydrocarbons, or with structures that could potentially contain lead-based paint, asbestos-containing materials, or other hazardous building materials, could result in a health hazard to students, teachers, and other on-site	**S**	**G.3.** The project sponsor and its successors shall comply with all applicable environmental regulatory requirements and guidance documents for the siting of new schools. In accordance with existing requirements, all environmental work performed in support of school siting shall be performed by qualified environmental professionals under oversight by DTSC's School Siting Unit.	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
	personnel.			
G.4	Use and potential accidental spills of hazardous materials during construction of the proposed project could result in soil and/or groundwater contamination and adverse health effects to construction workers, the public, and the environment.	**S**	**G.4.** The Stormwater Pollution Prevention Plan (SWPPP) required for the project (see Mitigation Measure I.4a in Section III.I, Hydrology and Water Quality, p. **III.I.17 - III.I.18**) shall include emergency procedures for incidental hazardous materials releases. The procedures shall include necessary personal protective equipment, spill containment procedures, and training of workers to respond to accidental spills/releases. The SWPPP shall also include Best Management Practices, which shall include requirements for hazardous materials storage during construction to minimize the potential for releases to occur (see Mitigation Measure I.4a in Section III.I, Hydrology and Water Quality, p. **III.I.17 - III.I.18**). All use, storage, transport, and disposal of hazardous materials during construction activities shall be performed in accordance with existing local, state, and federal hazardous materials regulations.	**LS**
G.5	Future land uses at the project site may potentially create a significant hazard to the public or the environment as a result of routine transport, use, production, or disposal of hazardous materials.	**LS**	No mitigation necessary	**LS**
G.6	Implementation of the project would not result in the emission or handling of hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of an existing or proposed school.	**LS**	No mitigation necessary	**LS**

LS = Less than Significant S = Significant SU = Significant and Unavoidable

Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
G.7	Implementation of the proposed project would not involve development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	**LS**	No mitigation necessary	**LS**
Biological Resources				
H.1	Implementation of the Development Plan would result in loss of aquatic habitat within concrete-lined laterals.	**LS**	No mitigation necessary	**LS**
H.2	Implementation of the Development Plan would result in loss of orchard, ruderal, and developed habitat.	**LS**	No mitigation necessary	**LS**
H.3	Implementation of the Development Plan would result in loss of foraging habitat for Northern Harriers and Tricolored Blackbird.	**LS**	No mitigation necessary	**LS**
H.4	Implementation of the Development Plan would result in loss of nesting and foraging habitat for Loggerhead Shrikes.	**LS**	No mitigation necessary	**LS**
H.5	Implementation of the Development Plan could result in disturbance to nesting Swainson's Hawks. ***(cont'd.)***	**S**	**H.5a.** In order to assure that nesting Swainson's Hawks will not be disturbed by construction activities, a qualified ornithologist shall be retained by each developer to conduct pre-construction surveys of each development site and adjacent areas within one mile of the development site. Such surveys shall follow the survey methodology developed by the Swainson's Hawk Advisory Committee prior to any disturbance within 5 miles of a potential nest tree. Survey Period I occurs from January 1 to March 20, Period II from March 20 to April 5, Period III from April 5 to April 20, Period IV from April 21 to June 10 (surveys not recommended during this period because	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	(cont'd.)		identification is difficult as the adults tend to remain within the nest for longer periods of time), and Period V from June 10 to July 30. No fewer than three surveys shall be completed, in at least the two survey periods immediately prior to project initiation. In the event that this species is detected during protocol-level surveys, consultation with CDFG shall be required to establish site-specific procedures that ensure project initiation would not result in nest disturbance (see Mitigation Measure H.5b). **H.5b.** Nest trees on the project site(s) should not be removed unless avoidance measures are determined to be infeasible. If a nest tree must be removed, a Management Authorization (including conditions to off-set the loss of the nest tree) must be obtained. The Management Authorization will specify the tree removal period, generally between October 1 – February 1. If construction or other project-related activities which may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the developer) by a qualified biologist should be required to determine if the nest is abandoned. If it is abandoned, and if the nestlings are still alive, the developer shall fund the recovery and hacking (controlled release of captive reared young) of nestling(s).	

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
H.6	Implementation of the Development Plan would result in loss of Swainson's Hawk foraging habitat. ***(cont'd.)***	**S**	**H.6.** As a condition precedent to the City's issuance of any building permit for the project, the project sponsor (or its successor(s)) shall furnish documentation, in a form acceptable to the City, that it has provided funding for mitigation for the loss of foraging habitat for Swainson's Hawks by providing offsite Habitat Management (HM) lands as described in the CDFG's *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California* because the site is known foraging habitat for Swainson's Hawks The final acreage of off-site management lands to be provided depends on the distance between the project site and the nearest active nest site, as determined by protocol-level nest surveys. The acreage of offsite HM lands provided should be derived from the following recommendations included in the 1994 CDFG staff report for projects within one mile of an actual nest tree: • One acre of HM land (at least 10 percent of the HM land requirements shall be met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90 percent of the HM lands protected by a conservation easement [acceptable to the Department] on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's Hawk) for each acre of development authorized (1:1 ratio); or • One-half acre of HM land (all of the HM land requirements shall be met by fee title acquisition or a conservation easement [acceptable to the Department] which allows for the active management of the habitat for prey production on the HM lands) for each acre of development authorized (0.5:1 ratio).	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	(cont'd.)		• Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands) at the rate of $400 per HM acre.	
H.7	Implementation of the Development Plan would result in loss of occupied Burrowing Owl habitat. ***(cont'd.)***	**S**	**H.7a.** In conformance with federal and state regulations regarding the protection of raptors, a habitat assessment in accordance with CDFG protocol for Burrowing Owls shall be completed prior to the start of construction on each parcel in the Project Area. Burrowing Owl habitat on each development site and within a 500-foot (150 m) buffer zone around each development site within the VOP area shall be assessed ("Assessment Area"). If the habitat assessment concludes that the Assessment Area lacks suitable Burrowing Owl habitat, no additional action would be warranted. However, if suitable habitat is located on the Assessment Area, all ground squirrel colonies shall be mapped at an appropriate scale, and the following mitigation measures shall be implemented: • In conformance with federal and state regulations regarding the protection of raptors, a pre-construction survey for Burrowing Owls, in conformance with CDFG protocol, shall be completed no more than 30 days prior to the start of construction within suitable habitat at the project site(s) and buffer zone(s). Three additional protocol-level surveys shall also be completed per CDFG protocol prior to construction. • Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
(cont'd.)		CDFG authorizing the eviction. • A 250-foot (76 m) buffer, within which no new activity will be permissible, shall be maintained between project activities and nesting Burrowing Owls during the nesting season. This protected area shall remain in effect until August 31, or at the CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently. • If accidental take (disturbance, injury, or death of owls) occurs, the CDFG shall be notified immediately. **H.7b.** If preconstruction surveys determine that Burrowing Owls occupy the site and avoiding development of occupied areas is not feasible, then habitat compensation on off-site mitigation lands shall be implemented. Habitat Management (HM) lands comprising existing Burrowing Owl foraging and breeding habitat shall be acquired and preserved. An area of 6.5 acres (the amount of land found to be necessary to sustain a pair or individual owl) shall be secured for each pair of owls, or individual in the case of an odd number of birds. As part of an agreement with the CDFG, the project applicant shall secure the performance of its mitigation duties by providing the CDFG with security in the form of funds that would: • Allow for the acquisition and/or preservation of 6.5 acres of HM lands; • Provide initial protection and enhancement activities on the HM lands, potentially including but not limited to such measures as fencing, trash clean-up, artificial burrow creation, grazing or mowing, and any habitat restoration deemed necessary by CDFG; • Establish an endowment for the long-term management of the HM lands; and • Reimburse the CDFG for reasonable expenses incurred as a result of the approval and implementation of this agreement. Pending CDFG approval, HM lands providing foraging habitat for	
(cont'd.)			

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Table I.1: Summary of Impacts and Mitigation Measures				
Impact		**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
	(cont'd.)		Swainson's Hawks may also be used to mitigate impacts to Burrowing Owls provided the HM lands provide existing Burrowing Owl foraging and breeding habitat.	
H.8	Implementation of the Development Plan would result in cumulative loss of Swainson's Hawk foraging habitat.	**S**	**H.8.** Same as Mitigation Measure H.6.	**LS**
H.9	Implementation of the Development Plan would result in indirect impacts to downstream biological resources.	**S**	**H.9.** Same as Mitigation Measure I.4a.	**LS**
Hydrology and Water Quality				
I.1	Placement of housing and other types of development in areas subject to flooding could result in severe hardship and property damage for project occupants.	**S**	**I.1.a**: The proposed project drainage plan shall include designs for permanent conveyances features capable of passing the 100-year flood flows through the site. The drainage design shall demonstrate, through detailed hydraulic analysis, that FEMA-estimated flood flows would be conveyed within the banks of the conveyance features (i.e. housing and other susceptible development shall not be inundated). The proposed drainage plan shall be reviewed and approved by the City of Patterson Public Works Department. The City shall conduct inspections to ensure that the drainage plan is implemented during project construction. **I.1b.** The project proponent shall design and construct the project so that the lowest finished floors of all residential buildings on lots adjacent to the 1 percent chance floodplain will be elevated at least one foot above the local 100-year flood elevation identified by the hydraulic analyses called for in Measure I.1a. The finished floor elevations shall be confirmed by a licensed surveyor prior to issuance of occupancy permits. Compliance with the requirements of the NFIP will be further documented by processing of a Letter of Map Revision with FEMA, which will update the mapping of the special flood hazard areas to appropriately depict the post-project conditions.	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
I.2	Impervious surfaces and placement of structures in a floodplain would increase the amount of runoff, potentially exacerbating existing local flooding problems downstream of the Plan Area.	**S**	**I.2.** The expanded detention basin and improvements to Sycamore Avenue shall be designed so that any overland flow is released uniformly at low velocity and with flow depths less than ten inches. Design-level drainage plans for each phase of development of the Plan Area shall be submitted to the City of Patterson for review and approval.	**LS**
I.3	The increase in impervious surfaces could adversely affect groundwater recharge.	**LS**	No mitigation necessary	**LS**
I.4	Construction activities and post-construction land uses could result in degradation of water quality in nearby surface water bodies by reducing the quality of storm water runoff. ***(cont'd.)***	**S**	**I.4a.** Each developer who proposes to carry out construction within the project area shall prepare and implement an SWPPP designed to reduce potential impacts to surface water quality through the construction and life of the project whether or not the development site is over one acre. The SWPPP would act as the overall program document designed to provide measures to mitigate potential water quality impacts associated with implementation of the proposed project. It is not required that the SWPPP be submitted to the RWQCB, but must be maintained on-site and made available to RWQCB staff upon request. The SWPPP shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with storm water. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain. An important component of the storm water quality protection effort is educating the site supervisors and workers about practices and procedures. To educate on-site personnel and maintain awareness of the importance of storm water quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures			
Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
(cont'd.)		The SWPPP shall specify a monitoring program to be implemented by the construction site supervisor, and must include both dry and wet weather inspections. In addition, in accordance with State Water Resources Control Board Resolution No. 2001-046, monitoring would be required during the construction period for pollutants that may be present in the runoff that are "not visually detectable in runoff." Each developer shall retain an independent monitor to conduct regular inspections and provide written reports to the City of Patterson Public Works Department to ensure compliance with the SWPPP. RWQCB personnel, who may make unannounced site inspections, are empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented. BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, watering for dust control, perimeter silt fences, placement of hay bales, and sediment basins. The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control, that is, keeping sediment on the site. End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions. **I.4b.** As a condition of approval of the final grading plans, the project sponsor shall prepare a Project Stormwater Management Plan (SMP) to be reviewed and approved by the City Engineer for the Plan Area. The SMP will be the guiding document detailing practices for mitigating water quality in the post-construction phase. The SMP	
(cont'd.)			

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Table I.1: Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	(cont'd.)		shall provide operations and maintenance guidelines for all of the BMPs identified in the SMP, include measures designed to mitigate potential water quality degradation of runoff from all portions of the completed development (including roof and sidewalk runoff), and clearly identify the funding sources for the required on-going maintenance. The project sponsor or the consultant retained by the sponsor to prepare the SMP shall thoroughly review and comply with the requirements of the most current municipal Phase II General Permit for storm water discharges (Order No. 2003-0005-DWQ). In general, passive, low-maintenance BMPs are preferred. Yet to be developed residential, commercial, and light industrial parcels generally provide many opportunities for innovative storm water management, including permeable pavers, concave lawn/infiltration basins, grassy swales, and dry-wells connected to roof downspouts. The final design team for each development project in the Plan Area shall review and incorporate the concepts included in *Start at the Source, Design Guidance Manual for Stormwater Quality Protection* in the project design, and shall prepare an SWPPP in compliance with the Project SMP. The City of Patterson Department of Public Works shall ensure that the Project Stormwater Management Plan is prepared prior to approval of any grading plans. The City of Patterson Department of Public Works shall review and ensure that the SWPPP for each development project within the Plan Area complies with or updates the Project Stormwater Management Plan.	
I.5	Existing water supply wells at the project area, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality. ***(cont'd.)***	**S**	**I.5.** Prior to approval of a grading plan for development of a particular parcel or subarea of the project area, a well survey shall be conducted to determine the location and characteristics of each well for that particular parcel or subarea. The survey shall be conducted and documented by a State-registered geologist or engineer, and the results submitted to the City for review.	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
	(cont'd.)		The water supply wells shall either be: 1. Properly abandoned in compliance with the California Department of Water Resources, California Well Standards and Stanislaus County Code, Chapter 9.36 prior to final approval of the grading plan, or 2. Inspected by a qualified professional to determine whether each well is properly sealed at the surface to prevent infiltration of water-borne contaminants into the well casing or surrounding gravel pack. The California Well Standards require an annular surface seal of at least 20 feet. If any of the wells are found not to comply with this requirement, the applicant shall retain a qualified well driller to install the required seal. Documentation of the inspections and seal installations, if any, shall be provided to the City prior to final approval of the grading plan.	
I.6	The proposed change in land use at the project area could affect regional groundwater quality.	**LS**	No mitigation necessary	**LS**
Water Supply				
J.1	Treatment of groundwater and disposal of concentrated brine created as a byproduct of groundwater treatment could result in construction of new physical facilities on agricultural land, resulting in loss of agricultural land and temporary construction impacts, and in production of a waste product that may require special disposal methods.	**SU**	**J.1.** If the City sites the treatment facility or evaporation ponds for salts on agricultural land, the City shall require new development to pay its pro-rata share of the cost of an agricultural conservation easement, in the manner discussed in Mitigation Measure C.1, for the acreage converted for use as evaporation ponds.	**SU**
J.2	Groundwater treatment would consume substantial energy.	**LS**	No mitigation necessary	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
Impact		**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
J.3	Pumping groundwater to serve the Villages of Patterson project and other existing and planned demand could create one or more "cones of depression" beneath the City's wells.	**S**	**J.3.a.** The City shall sample groundwater quality semiannually to assess water quality and shall conduct additional studies to better understand the direction and rate of groundwater flow in the confined aquifer. These investigations will allow the City to optimize the arrangement of new water supply wells to maximize water quality and minimize the severity of the resulting cone of depression and associated impacts. To the extent feasible, new wells shall be located at greater spacings to reduce the cone of depression and maximize their distance from nearby users. This would reduce the risk and/or severity of the potential impacts from subsidence discussed above. **J.3.b.** The City shall implement a subsidence monitoring program. Subsidence shall be monitored annually at each well and new wells shall be designed to prevent damage to the wells from subsidence as described in the groundwater study. **J.3.c.** If, in the unlikely event that an existing user of the confined aquifer finds its well affected by the City's pumping, the City shall compensate that user for the cost of deepening the pump setting and the increased cost of operating the well to draw water from greater depths. New development in the City's sphere of influence shall be required to pay its fair share of such costs.	**LS**
J.4	Supplying water to the Villages of Patterson project would require extension of water supply conveyance infrastructure into previously unserved areas.	**LS**	No mitigation necessary	**LS**
Historical Resources				
K.1	Development of the proposed Villages of Patterson project may disturb or eliminate subsurface archeological resources from the prehistoric and historic eras.	**LS**	No mitigation necessary	**LS**

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Table I.1: Summary of Impacts and Mitigation Measures				
	Impact	**Level of Significance Prior to Mitigation**	**Mitigation Measure(s)**	**Level of Significance After Mitigation**
K.2	Development of the proposed Villages of Patterson project would require that segments of irrigation Laterals 3 North and 4 North be piped underground through the project site, altering Patterson's historic irrigation system.	**LS**	No mitigation necessary	**LS**
Community Services – Schools				
L.1	The project would generate additional school-aged children which would increase the demand for school facilities.	**LS**	No mitigation necessary	**LS**
L.2	The expansion of employment opportunities in Patterson may attract households with school-aged children resulting in a secondary impact on area schools.	**LS**	No mitigation necessary	**LS**
Community Services - Health Care District				
L.3	The project would generate additional people and employment opportunities which would increase the demand for health care facilities.	**LS**	No mitigation necessary	**LS**

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II. PROJECT DESCRIPTION

A. OVERVIEW

The Villages of Patterson Development Plan envisions a traditionally-designed, pedestrian-oriented, master-planned community on an approximately 692-acre site immediately north and east of the city limits of Patterson. The Development Plan would establish a detailed framework for development of the Plan Area by identifying allowable land uses and their locations, and by providing development standards and design guidelines. It would govern review and approval of future specific development projects as they are proposed under the Development Plan.

The Development Plan calls for a mixed-use central core (The Village Circle) surrounded by four residential neighborhood quadrants (Villages) offering a diverse range of housing types and integrated commercial/office uses, with sites reserved for parks, schools, and other public uses. A commercial/office/light industrial area is planned for the western edge of the site to buffer the Plan Area from the California Northern Railroad and State Highway 33. The Villages of Patterson Plan Area would be linked by a system of roads, parks, and bicycle/pedestrian trails. At buildout, the Villages of Patterson is expected to accommodate up to approximately 3,100 dwelling units (d.u.), up to about 723,800 square feet (s.f.) of commercial/office/light industrial uses, and up to about 267,900 s.f. of Public/Quasi-Public uses.

The Villages of Patterson Development Plan would be implemented in phases, with anticipated commencement in 2007, and buildout by approximately 2020.

B. PROJECT OBJECTIVES

The overall goal of the Villages of Patterson Development Plan is to create a well-planned, walkable community with integrated neighborhoods and a sense of place, consistent with the policies of the City of Patterson's General Plan. The objectives of the proposed project are as follows:

- *Affordable Housing*: Housing in the Patterson area has become increasingly unaffordable in recent years. An objective of the project is to provide a significant amount of housing affordable to very-low, low, and moderate income persons and families.
- *East-West Balance in the Community*: The most recent growth in Patterson has been on the west side of town near Interstate-5 with the continuing buildout of the West Patterson projects. An objective of the project is to balance this west side growth with east side opportunities so that the community does not become out of balance with all public facilities on the west side. The proposed project includes schools, fire and police facilities, and neighborhood and regional parks and sports facilities, all currently lacking on the east side of Patterson.

- *Increased Housing Density*: Residential growth in the San Joaquin Valley has traditionally been of the low density residential variety which consumes a maximum amount of agricultural land. An objective of the project is to introduce denser single-family housing types into the Central Valley market so that the cumulative effect on consuming agricultural land is lessened through increased housing densities.
- *Homage to Patterson's History*: Patterson originally was laid out by its founder using radiating street designs from a city center circle modeled upon Paris and Washington, D.C. An objective of the project is to add to this strong sense Patterson has of its historical origins by creating a second major city circle with a street and trail pattern radiating out from this community center.
- *Land for Local Serving Job Creation*: Patterson has an abundance of old and substandard small industrial land and of new business park land in the West Patterson Business Park. Neither of these provides a quality location for new or growing local and smaller businesses. The West Patterson Business Park has turned out to be of primary interest to large companies and the older industrial areas cater to a limited market. An objective of the project is to provide quality locations for job creation for smaller new and growing local companies.
- *Smart Growth*: Recent new residential development in Patterson has been of a typical type usually associated with suburban sprawl. An objective of the Plan is to create a "smart growth" community that is "walkable" with natural neighborhood focal points.

C. PROJECT LOCATION

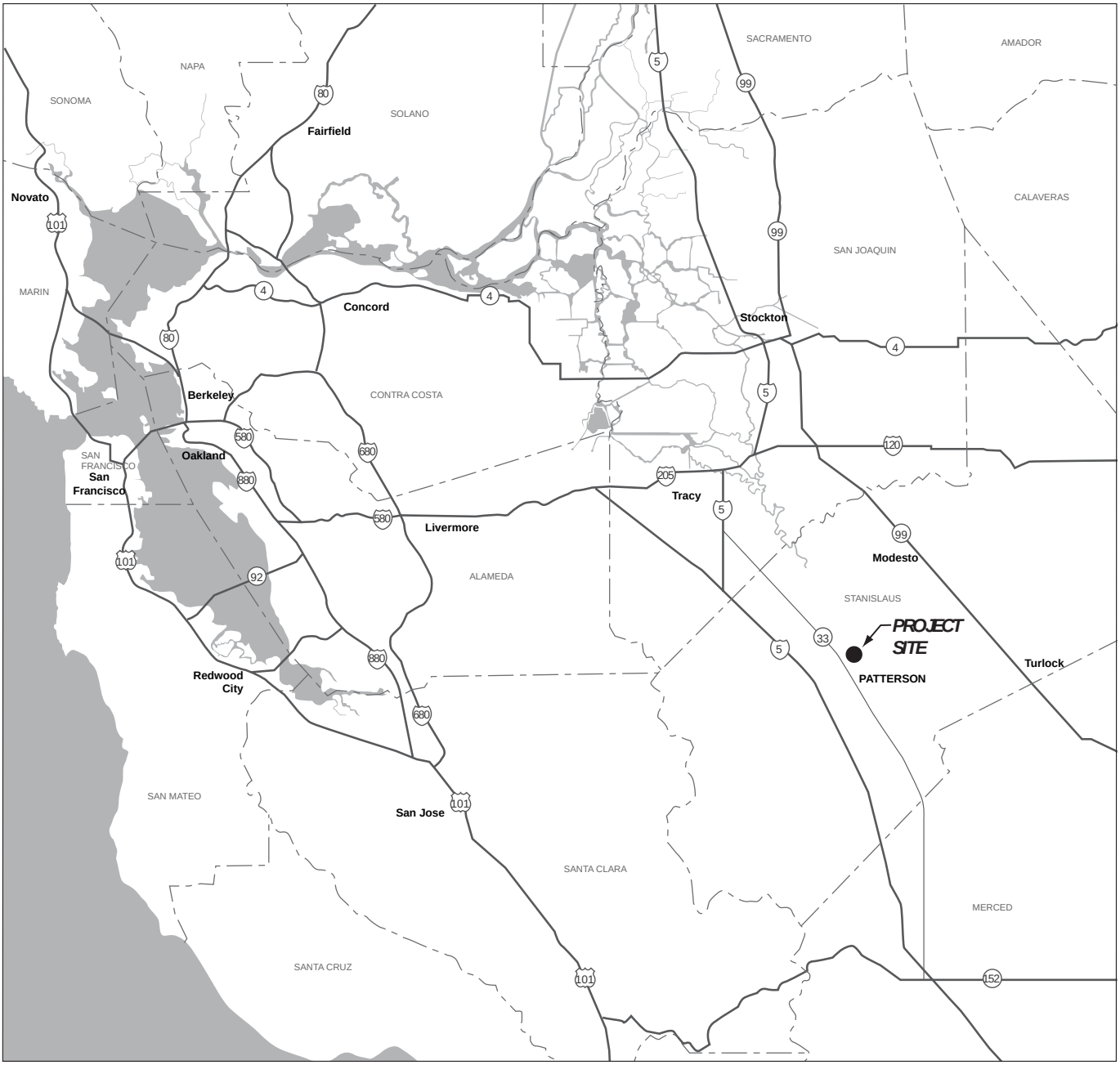
REGIONAL LOCATION

The City of Patterson is located along Interstate 5 in western Stanislaus County, about 89 miles southeast of San Francisco, 45 miles southeast of Livermore, 14 miles southwest of Modesto, and 92 miles south of Sacramento **(see Figure II-1: Regional Location)**.

PLAN AREA BOUNDARIES

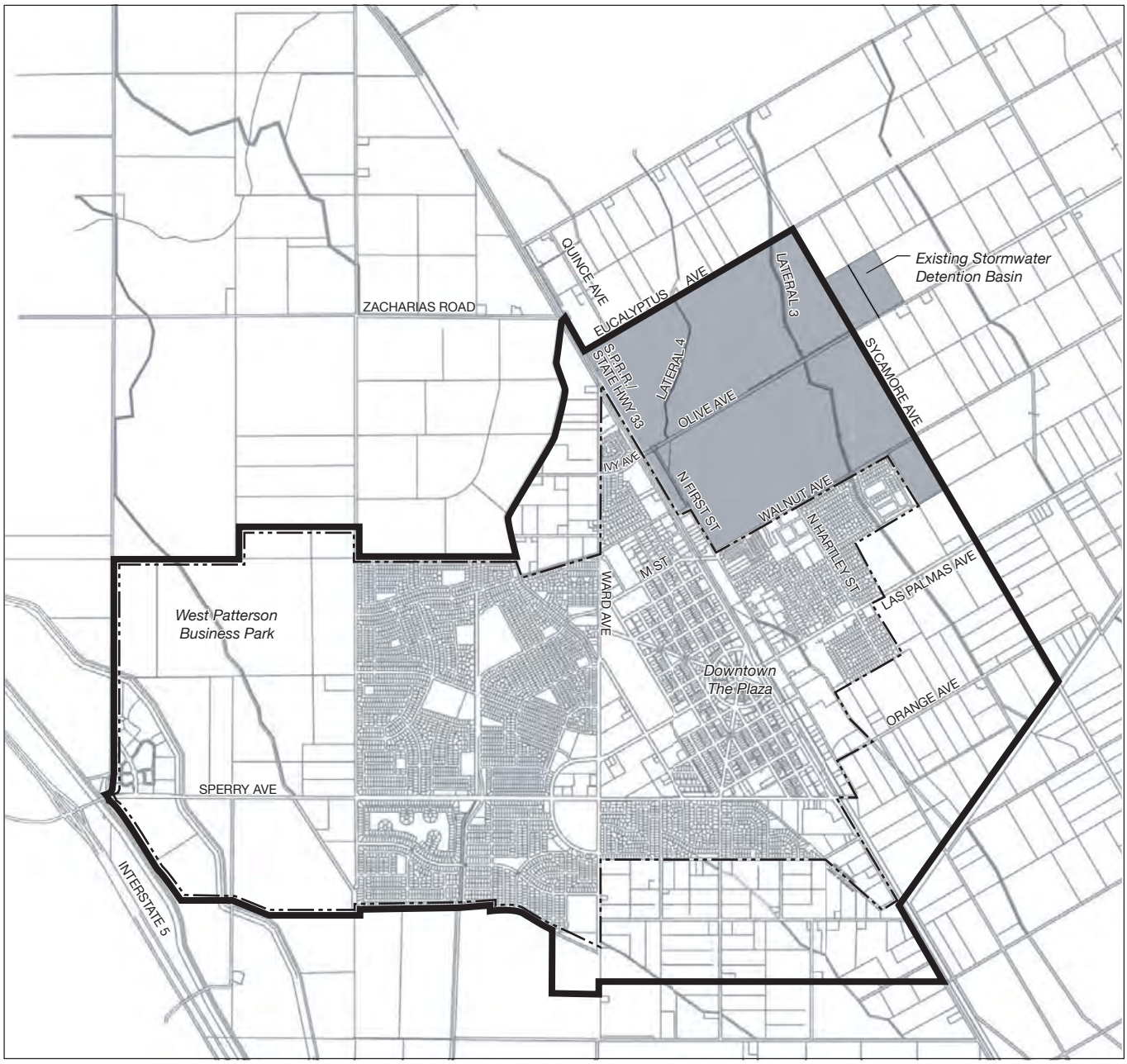
The approximately 692-acre Villages of Patterson Development Plan Area (the "Plan Area," or "project site") is north and east of the City of Patterson[1] in unincorporated Stanislaus County, contiguous to and outside of the incorporated boundaries of Patterson **(see Figure II-2: City of Patterson and Project Site)**. The City of Patterson's adopted sphere of influence includes the southern portion of the project site, south of Olive Avenue.

[1] For descriptive purposes in this EIR, Highway 33 and Sycamore Avenue are generally considered to run "north-south." Eucalyptus Avenue, Olive Avenue, and Walnut Avenue are generally considered to run "east-west."



SOURCE: Turnstone Consulting

FIGURE II-1: REGIONAL LOCATION



SOURCE: City of Patterson and William Hezmalhalch Architects, Inc.

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FEET

Villages of Patterson Plan Area

Patterson General Plan Area

Patterson City Limits

FIGURE II-2: CITY OF PATTERSON AND PROJECT SITE

The Plan Area occupies the approximately one-square-mile area formed by State Highway 33 and the California Northern Railroad right-of-way to the west, Eucalyptus Avenue to the north, Sycamore Avenue to the east, and Walnut Avenue to the south (except that the Plan Area does not include the existing light industrial properties located between the California Northern Railroad right-of-way and N. 1st Street, south of Salado Creek[2]). The Plan Area also includes an approximately 40-acre area at the northeast corner of Olive Avenue and Sycamore Avenue (the eastern half of which is currently owned and used by the City of Patterson as a stormwater detention basin), and an approximately 19-acre area at the southwest corner Walnut Avenue and Sycamore Avenue.

EXISTING CONDITIONS

The 692-acre Plan Area is nearly flat and contains 59 separate parcels of sizes ranging from one-half acre to 58 acres (**see Figure II-3: Existing Conditions on the Project Site and Patterson General Plan Land Use Designations**). The Plan Area consists primarily of agricultural uses (particularly orchards and row crops) and contains about 35 farm and residential compounds, consisting of homes, farm structures, garages, sheds, and associated out buildings. Patterson Irrigation District Laterals 3 North and 4 North run generally north-south through the project site. An approximately 9-acre area between the California Northern Railroad right-of-way and N. 1st Street south of Olive Avenue is occupied by a fence manufacturer, Vinyl Fence Co.

The Setting discussion for each environmental topic discussed in Chapter III of this EIR describes existing conditions within the Plan Area and vicinity in greater detail, as these relate to each environmental topic.

EXISTING GENERAL PLAN LAND USE DESIGNATIONS

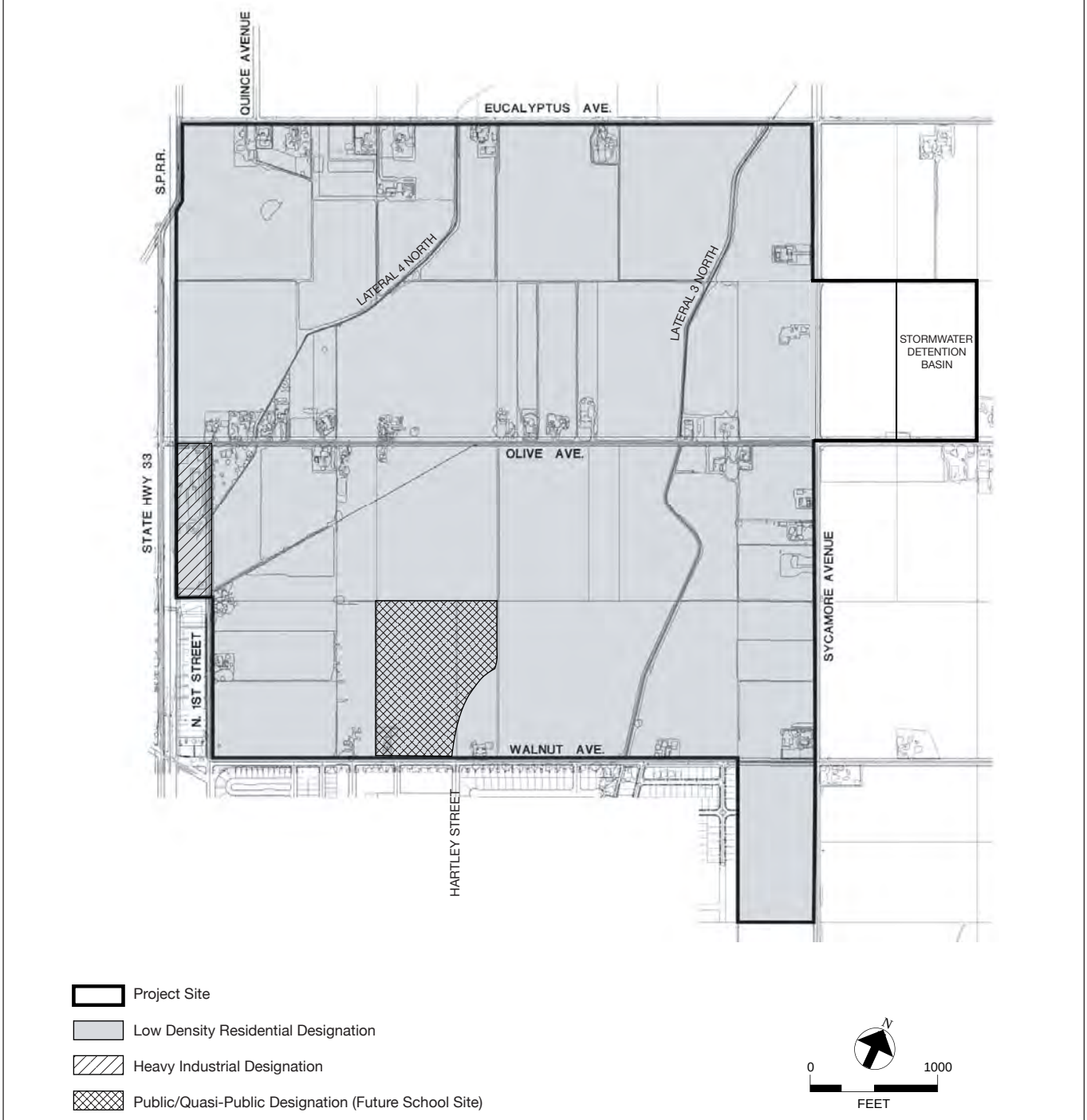
Stanislaus County

The *Stanislaus County General Plan* land use designation for most of the Villages of Patterson project site is "General Agriculture." An approximately 106-acre area along Walnut Avenue, west of Lateral 3 North, is designated "Urban Transition" under the County's General Plan.

City of Patterson

Most of the 692-acre Plan Area is within the City of Patterson's General Plan Area, except for the portion of the Plan Area east of Sycamore Avenue (about 40 acres). The City's current General

[2] This area is within the City of Patterson and is designated Light Industrial under the City of Patterson's General Plan.



SOURCE: City of Patterson and William Hezmalhalch Architects, Inc.

FIGURE II-3: EXISTING CONDITIONS ON THE PROJECT SITE AND PATTERSON GENERAL PLAN LAND USE DESIGNATIONS

Plan land use designation for most of the Plan Area is "Low Density Residential" (about 616 acres). A small area between the California Northern Railroad right-of-way and N. 1st Street north of Salado Creek is currently designated "Heavy Industrial" under the City's General Plan (about 9 acres, the Vinyl Fence Co. site). An area along Walnut Avenue, west of Hartley Street (about 27 acres), is currently designated Public/Quasi-Public.

D. DESCRIPTION OF PROPOSED PROJECT

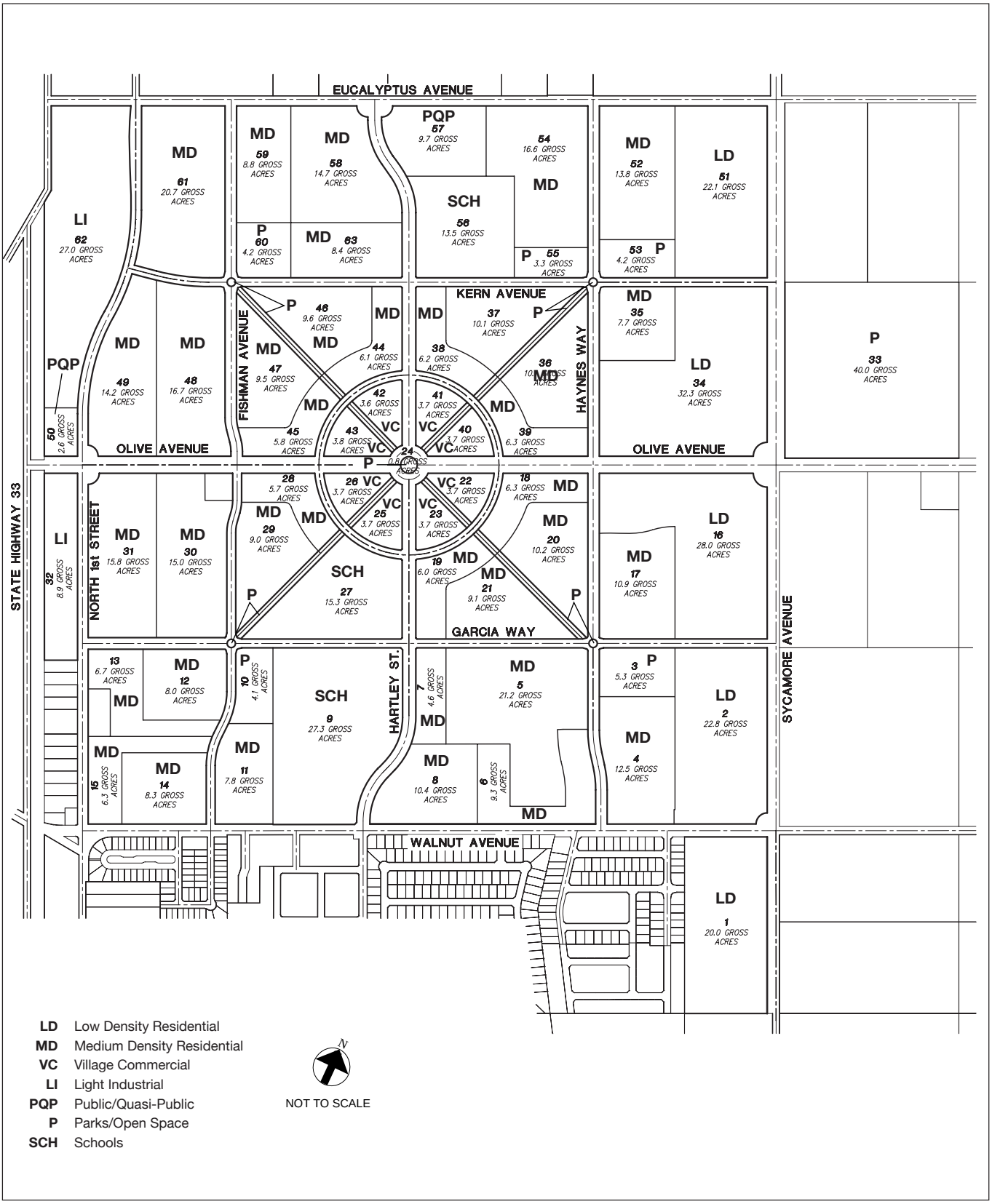
LAND USE PLAN

The Villages of Patterson Development Plan identifies proposed land use categories and their location (**see Figure II-4: Proposed Master Land Use Plan**), and proposed development densities for each land use category (**see Table II-1: Land Use Summary)**. Development standards for each land use category are provided, consistent with the City's General Plan land use designations. These include standards governing allowable density, permitted and conditional uses, lot dimensions, setbacks, building dimensions, and parking requirements. Design guidelines for each land use category are also provided to guide the design and review of development projects, establish an overall visual identity and character for the community, promote high-quality design, and encourage a pedestrian scale and orientation for buildings within the Plan Area.

Downtown Core

The Downtown Core (DC) land use designation, as defined in the Patterson General Plan, would be applied to a total of about 26 acres (currently designated Low Density Residential), comprised of seven of the eight wedge-shaped areas of The Village Circle (VC). (See **Figure II-4**.) The DC designation would allow for a mix of multi-unit residential (about 112 dwelling units, including live-work activities), commercial (up to about 100,000 s.f. total including office, retail, and home-based business), and civic uses.

Use restrictions for the Villages of Patterson Downtown Core designation would be generally consistent with those of the corresponding Downtown Core Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.40. However, they would be somewhat more restrictive by prohibiting banks which would otherwise be allowable as a permitted use under Downtown Core zoning, and prohibiting other uses (like gun shops, hotels, medical offices, mortuaries, and nightclubs) that would otherwise be allowable as a conditional uses under Downtown Core zoning. Allowable residential densities range from 12-20 units per acre under the Downtown Core designation



SOURCE: GDR Engineering Inc.

FIGURE II-4: PROPOSED MASTER LAND USE PLAN

Table II-1: Land Use Summary[a]

Land Use Designation	Acreage (ac)	Residential Capacity (du)	Non-Residential Capacity (gsf)
Residential			
Low Density Residential (1.1-5 DU/Acre)	125.2 ac	531 du	NA
Medium Density Residential (5.1-12 DU/Acre)	371.8 ac	2,457 du	NA
Subtotal	**497.0 ac**	**2,988 du**	**NA**
Village Circle (Downtown Core)			
Subtotal	**25.9 ac**	**112 du**	**100,000 gsf**
Light Industrial			
LI Area 62	27.0 ac	NA	468,700 gsf
LI Area 32	8.9 ac	NA	155,100 gsf
Subtotal	**35.9 ac**	**NA**	**623,800 gsf**
Public/Quasi-Public			
PQP Area 50	2.6 ac	NA	56,600 gsf
PQP Area 57	9.7 ac	NA	211,300 gsf
Subtotal	**12.3 ac**	**NA**	**267,900 gsf**
School			
SCH Area 56	13.5 ac	NA	NA
SCH Area 9	27.3 ac	NA	NA
SCH Area 27	15.3 ac	NA	NA
Subtotal	**56.1 ac**	**NA**	**NA**
Parks			
P Area 3	5.3 ac	NA	NA
P Area 10	4.1 ac	NA	NA
P Area 53	4.2 ac	NA	NA
P Area 33	40.0 ac	NA	NA
P Area 55	3.3 ac	NA	NA
P Area 60	4.2 ac	NA	NA
P Area 24	0.8 ac	NA	NA
Village Circle Area 40 [b]	3.7 ac	NA	NA
Subtotal	**65.6**	**NA**	**NA**
Plan Area Total	**692.0 ac**	**3,100 du**	**991,700 gsf**

Notes:

a. This table represents a preliminary distribution of maximum densities. The distribution of densities between planning areas may shift.

b. The Village Circle park could be in any of the eight Planning Areas that comprise The Village Circle.

Source: The Villages of Patterson Development Plan, October 2005.

Development standards for the Villages of Patterson Downtown Core designation would be those of the corresponding Downtown Core Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.40.

Residential

The Low Density and Medium Density land use designations, as defined in the Patterson General Plan, would be applied to a total of about 497 acres (currently designated Low Density Residential), accommodating a total of up to 2,988 dwelling units. (See **Figure II-4**.)

- *The Low Density Residential designation* (LR, at 1.1 to 5.0 d.u. per acre) would be applied to a total of about 125 acres. It is expected to accommodate a total of about 531 dwelling units. It would be the predominant land use designation for the eastern edge of the Plan Area.
- *The Medium Density Residential designation* (MR, at 5.1 to 12.0 d.u. per acre) would be applied to a total of about 372 acres. It is expected to accommodate a total of about 2,457 dwelling units. It would be the predominant land use designation for most of the Plan Area..

Permitted, Conditional, and Prohibited Uses for each of these designations would be those of the corresponding Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.16. The Development Plan would establish special development standards for each residential land use designation in the Plan Area that differ from those set forth generally for the corresponding Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.16. In keeping with the project's objectives promoting the creation of a compact, walkable, diverse community, the Villages of Patterson Development Plan would establish relaxed development standards. These would allow for smaller minimum lot dimensions; reduced front, side, and rear yard setbacks; and higher maximum height limits.

Light Industrial

The Light Industrial (LI) land use designation, as defined in the Patterson General Plan, would be applied to two areas totaling about 36 acres at the westernmost portion of the Plan Area, adjacent to the California Northern Railroad right-of-way. The proposed LI area south of Olive Avenue is currently designated Heavy Industrial (about 9 acres). The other proposed LI area at the northwest corner of the project site is currently designated Low Density Residential (about 27 acres).

The LI designation would allow for commercial, retail, office, warehouses, and light manufacturing uses, at an allowable Floor Area Ratio (FAR) of 0.4. Given the site constraints of these narrow areas, it is anticipated that they would serve smaller light industrial users than those served by the West Patterson Business Park. The Light Industrial designation under the proposed

Development Plan is expected to accommodate about 623,800 s.f. of Light Industrial development.

Use restrictions for the Villages of Patterson Light Industrial designation would be generally consistent with those of the corresponding Light Industrial Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.52. The Villages of Patterson Light Industrial land use designation specifies Prohibited Uses (like banks, bars, gun shops, hotels, medical offices, mortuaries, and nightclubs) that are not otherwise specified as Prohibited Uses for Light Industrial zoning under the Zoning Ordinance.

Development standards for the Villages of Patterson Light Industrial land use designation would be those of the corresponding Light Industrial Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.52.

Public/Quasi Public

The Public/Quasi Public (PQP) designation, as defined in the Patterson General Plan, would be applied to two areas at the northern and western edges of the Plan Area, totaling about 12 acres, currently designated Low Density Residential. The PQP designation would allow for public uses, such as fire and police stations, community centers, libraries and houses of worship, at an allowable FAR of 0.5. The Public/Quasi Public designation would accommodate about 267,900 s.f. of Public/Quasi Public development. Proposed school sites would also be designated PQP under the Patterson General Plan, but are treated separately for descriptive purposes in the Development Plan (see below).

Permitted and Conditional Uses and development standards for the Villages of Patterson Public/Quasi Public land use designation would be those of the corresponding Public/Quasi Public Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.60.

Schools

Three school sites totaling about 56 acres are identified for the Plan Area. The proposed school site along Walnut Avenue west of Hartley Street (about 27 acres) is currently designated Public/Quasi-Public. The potential school sites are at the northwest corner of Garcia Way and Hartley Street (about 15 acres), and at the southeast corner of Kern Avenue and Hartley Street (about 16 acres). They are currently designated Low Density Residential.

Schools would be consistent with the PQP land use designation as defined in the Patterson General Plan. The Patterson Unified School District would construct the first of these schools at the northwest corner of Walnut Avenue and Hartley Street.

Parks

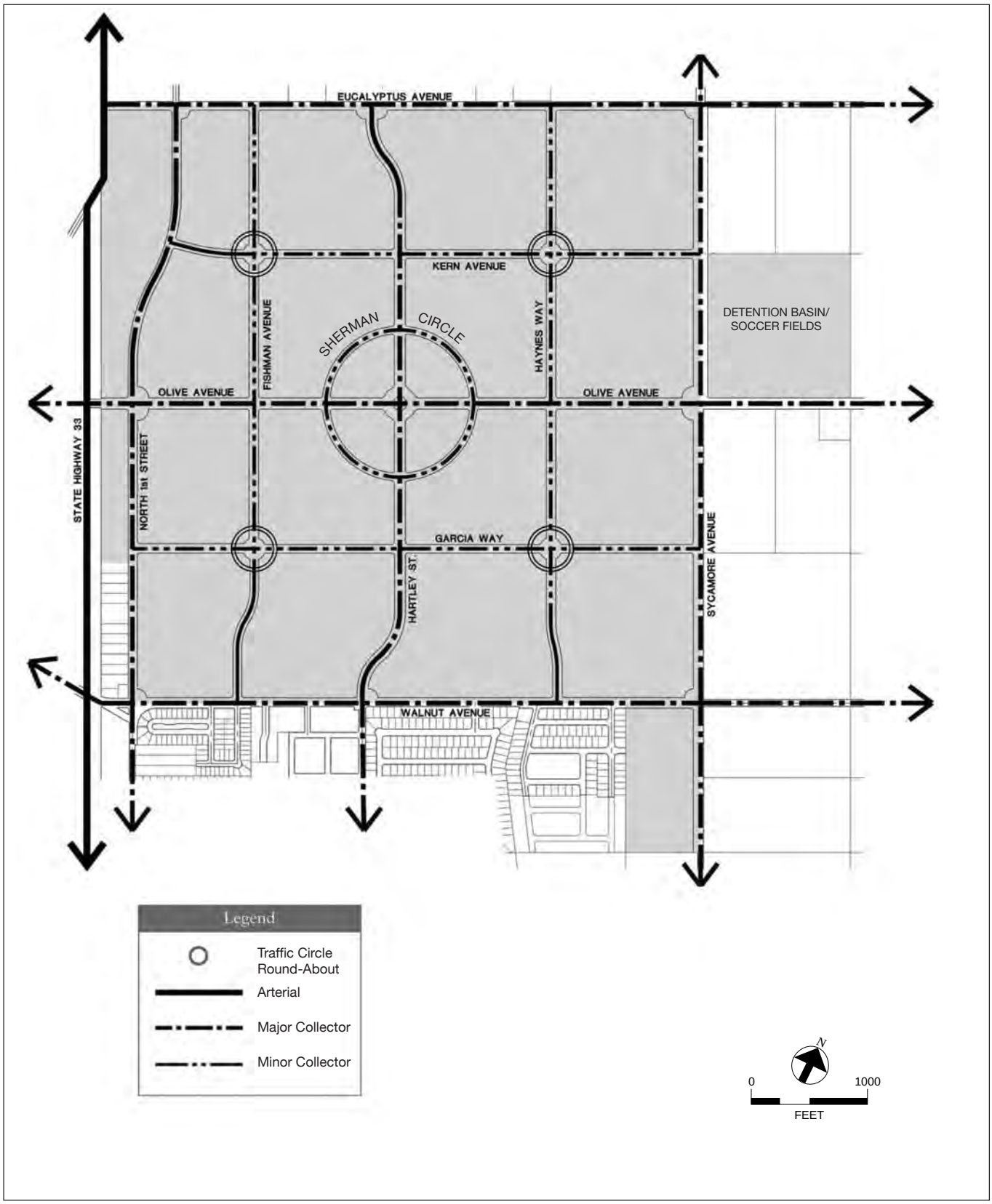
The Development Plan would provide for a total of about 65 acres of parkland consisting of the following: five areas, totaling about 20 acres, identified for neighborhood parks at the center of each of the four Villages (the northeast Village has two parks planned at its center); a 40-acre soccer field facility located within the proposed expanded detention basin site west of Sycamore Avenue and north of Olive Avenue; and two areas, totaling about 5 acres, within the Village Circle consisting of the circular hub of the central roundabout, and one of the wedge-shaped areas surrounding the hub (to be determined). The proposed 40-acre soccer field facility is outside of Patterson's General Plan Area and therefore has no General Plan Designation. The other proposed park sites are currently designated Low Density Residential.

CIRCULATION PLAN

The Development Plan's Circulation Plan calls for an integrated roadway and pedestrian/bicycle trail system by extending existing streets into the Plan Area **(see Figure II-5: Proposed Circulation Plan)**. The Development Plan establishes the general layout and detailed design standards for roadways and intersections in the Plan Area to implement Patterson's General Plan Circulation Element. Development standards for the Villages of Patterson Downtown Core designation would be those of the corresponding Downtown Core Zoning District under the City of Patterson's Zoning Ordinance, Chapter 18.40.

The proposed circulation system would be formal and hierarchical, aligned with the grid framework of existing major collector roadways at the perimeter of the Plan Area (Eucalyptus Avenue, Sycamore Avenue, Walnut Avenue), and the existing east/west major collector through the center of the Plan Area (Olive Avenue). A new north/south major collector (Hartley Street) would be constructed through the center of the Plan Area which, with Olive Avenue, would define the four Village quadrants. A central traffic roundabout at the intersection of Olive Avenue and Hartley Street would calm traffic and mark the centerpoint of the Villages of Patterson. N. 1st Street would be extended northward, also as a major collector, to align with existing Quince Avenue.

A new circular minor collector street (Sherman Circle) would encircle and define The Village Circle. Its concentric ring configuration would echo that of Patterson's historic downtown. New north/south minor collectors (Fishman Avenue and Haynes Way), and east/west minor collectors (Kern Avenue and Garcia Way) would bisect each Village quadrant. Traffic roundabouts at the intersection of a north/south minor collector with an east/west minor collector would calm traffic and mark the center of each Village quadrant.



SOURCE: William Hezmalhalch Architects, Inc.

FIGURE II-5: PROPOSED CIRCULATION PLAN

A network of interior residential streets and alleyways would provide access to residential properties at the interiors of areas between major and minor collector streets. The specific alignment of interior residential streets and alleyways would be determined during the design phase of individual projects and reviewed and approved under the subdivision approval process.

PUBLIC FACILITIES AND SERVICES

Water

The City of Patterson would provide water supply services for the Plan Area through connection to, and expansion of, the City's water supply and distribution system. The water supply and water distribution system for the Plan Area would be connected to the City's existing water supply and water distribution system and include 12-, 14-, and 16-inch water transmission lines, local 8- and 10-inch distribution lines to serve the individual parcels within the Plan Area, and two new wells **(see Figure II-6: Proposed Water Plan)**.

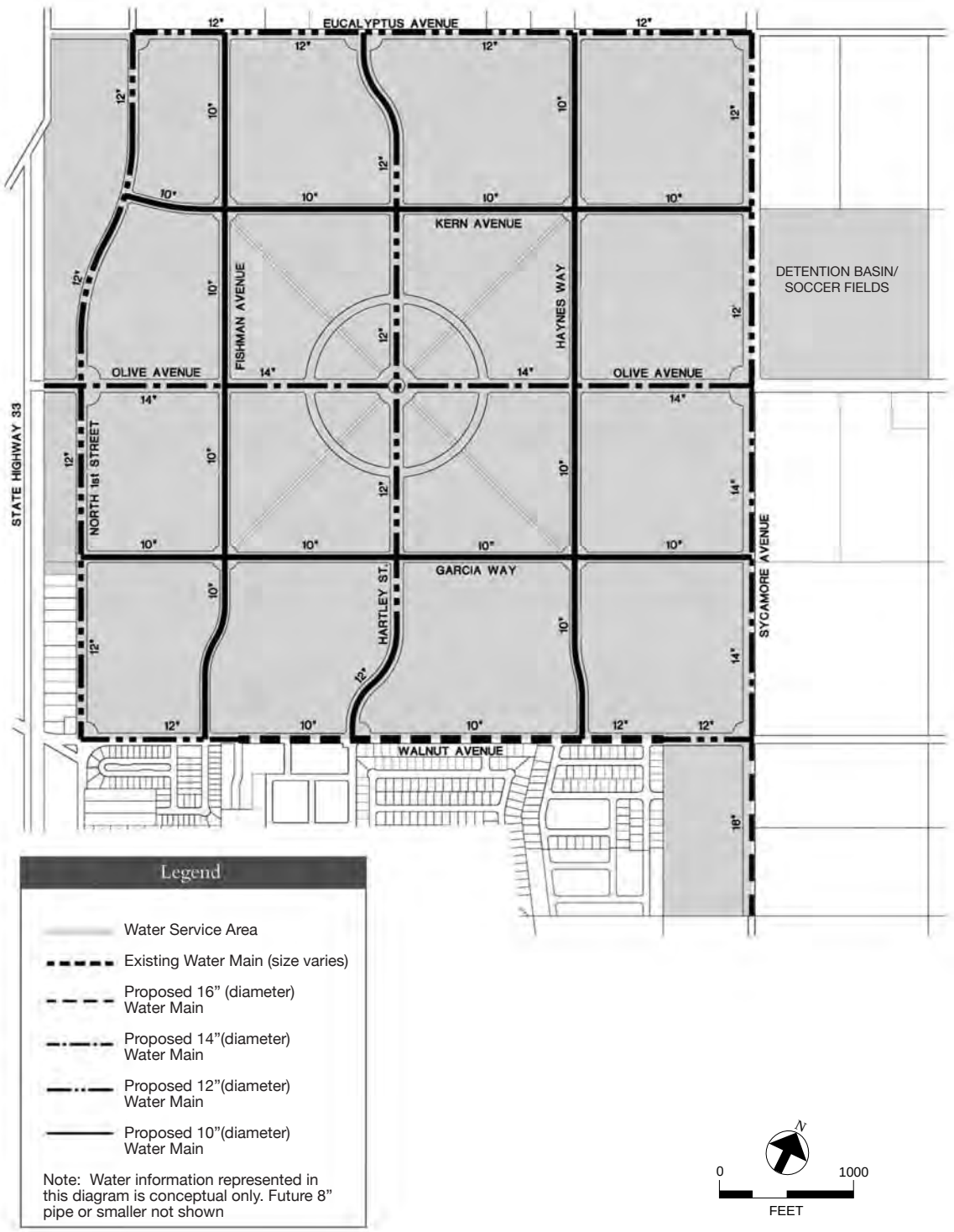
Wastewater

The City of Patterson would provide wastewater services for the Plan Area through connection to the City's wastewater service system. Sewage flows from the southern portion of the Plan Area would be collected in a 16-inch main in Sycamore Avenue and conveyed southward to the existing sewer trunk line in Walnut Avenue that leads directly to the City's Wastewater Treatment Plant **(see Figure II-7: Proposed Wastewater Plan)**. Sewage flows for the northern portion of the Plan Area would be collected in a 12-inch main in Sycamore Avenue and conveyed southward to a lift station at the intersection of Sycamore and Olive Avenues, and transferred to the 16-inch main in Sycamore Avenue south of Olive Avenue.

Wastewater would be treated at the existing Patterson Wastewater Treatment Plant east of the City near the west bank of the San Joaquin River. No changes to the treatment plant are proposed as a direct result of the proposed Development Plan.

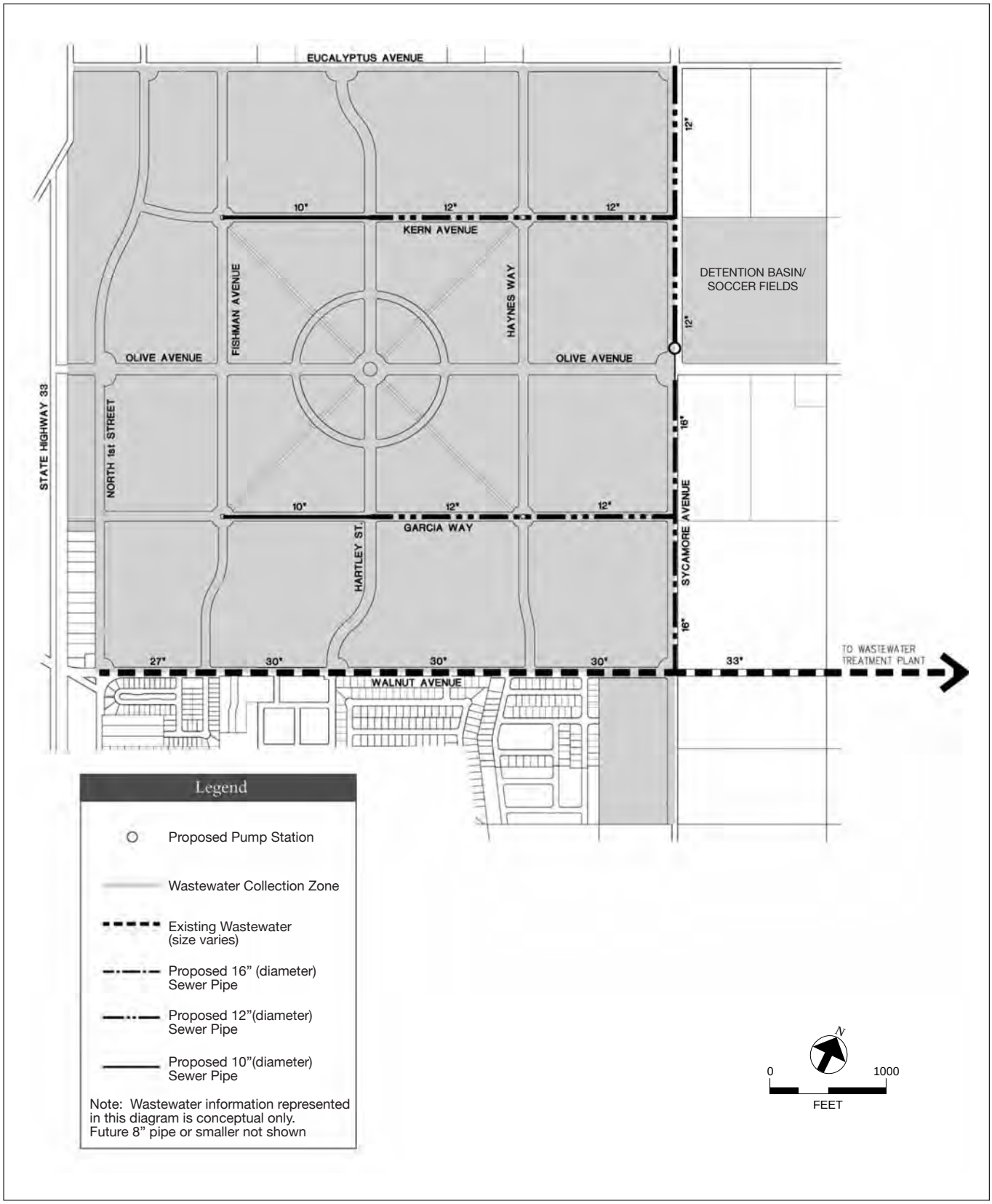
Stormwater

The City of Patterson would provide stormwater services including collection, transmission, and disposal of stormwater for the Plan Area through connection to, and expansion of, the City's stormwater system. Stormwater runoff from Salado Creek and the City of Patterson is currently transmitted to the San Joaquin River through the Salado Creek drainage system which runs through the Plan Area in a 96-inch pipe in Olive Avenue. The City currently operates the existing stormwater detention basin along the north side of Olive Avenue, east of Sycamore. The existing stormwater detention basin would be deepened and expanded westward to collect stormwater



SOURCE: William Hezmalhalch Architects, Inc.

FIGURE II-6: PROPOSED WATER PLAN



SOURCE: William Hezmalhalch Architects, Inc.

FIGURE II-7: PROPOSED WASTEWATER PLAN

from the Plan Area. Collected stormwater would be pumped into the existing Olive Avenue pipeline for transmission to the San Joaquin River **(see Figure II-8: Proposed Stormwater Plan)**.

Irrigation

The Patterson Irrigation District Laterals 3 North and 4 North currently run uncovered through the project site. They would be piped underground in irrigation easements along a portion of N. 1st Street and Olive Avenue and the proposed Haynes Way and Fishman Avenue, respectively, through the project site. They would continue to serve agricultural operations to the north and east of the project site.

Police and Fire Protection

As part of the proposed project, construction of a fire station/police satellite station is planned for the area designated "PQP" at the northwest corner of Olive Avenue and N. 1st Street, to provide for the desired response times for the east side of Patterson, under the City's General Plan.[3]

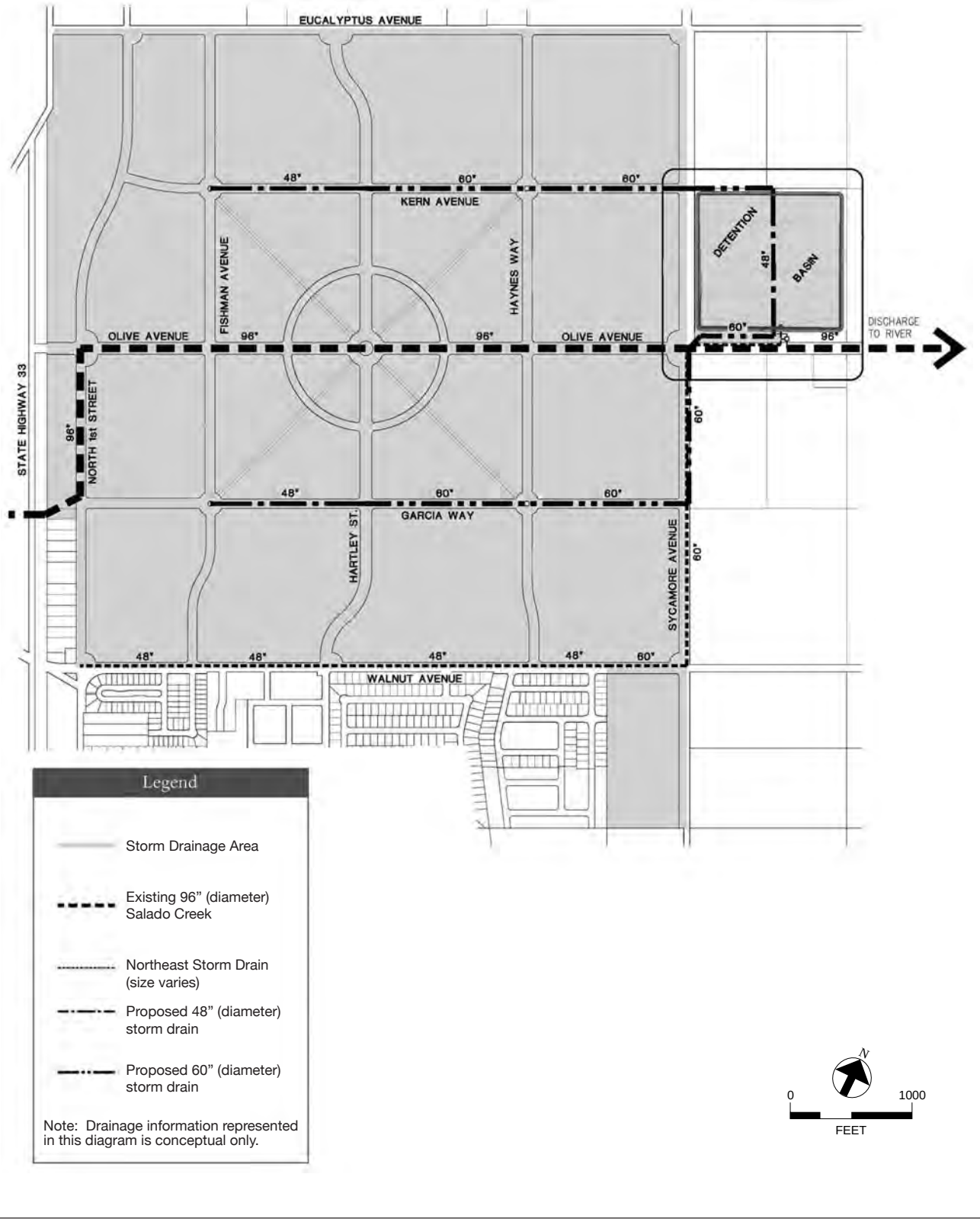
E. PROJECT ACTIONS

As part of implementation of the proposed project, several permits and approvals would be necessary prior to construction. These are listed below, and the relevant agencies involved in the review process are identified.

CITY OF PATTERSON APPROVALS

- Certification of an EIR. The City of Patterson must certify an EIR prior to its approval of any of the project applications listed below. This EIR is being prepared to fulfill this requirement;
- Amendments to the City's General Plan Land Use map to change about 414 of the 616 acres currently designated as Low Density Residential to the following land use designations: Downtown Core (about 26 acres); Medium Density Residential (about 372 acres); Light Industrial (about 27 acres); Public/Quasi Public (about 41 acres, including potential school sites); and Parks (about 25 acres);
- Amendment to the City's General Plan Land Use map to change all of about 9 acres currently designated as Heavy Industrial to Light Industrial;
- Amendments to the Street Master Plan, Circulation Plan and Circulation Plan Diagram to incorporate the Plan Area;
- Prezoning of the Plan Area to zoning districts that coincide with the Development Plan;

[3] General Plan Policy IV.E.1 establishes a three-minute goal for average response time to police emergency calls. General Plan Policy IV.F.1 establishes a five-minute goal for average response time to fire emergency calls.



SOURCE: William Hezmalhalch Architects, Inc.

FIGURE II-8: PROPOSED STORMWATER PLAN

- Amendments to the City's Infrastructure Master Plans for water, sewer, stormwater, and circulation to include the proposed project;
- Approval of a Water Supply Assessment;
- Approval of a Villages of Patterson Preliminary and Final Development Plan;
- Approval of a Vesting Tentative Subdivision "A" Map(s) (for larger lots for later subdivision into neighborhoods);
- Approval of a Vesting Tentative Subdivision "B" Map(s) (for neighborhoods);
- Approval of a Development Agreement(s) between the City and applicants;
- Initiation of an application to LAFCO (for approvals described below);
- Creation of, or annexation to, a Mello-Roos District;
- Approval of Williamson Act contract cancellations;
- Approval of Water Supply Verifications for any qualifying subdivisions;
- Creation of, or annexation to, a fire assessment district;
- Approval of building permits and use permits.

LAFCO ACTIONS

- Adoption of amendments to the Service Review and Master Service Element for the City's Sphere of Influence to include the service plans for the proposed project;
- Amendment to the City's Sphere of Influence to include the portion of the Plan Area north of Olive Avenue;
- Reorganization to annex the entire Plan Area to the City, detachment of the Plan Area from the West Stanislaus Fire Protection District and the Patterson Irrigation District.

OTHER PUBLIC AGENCIES WHOSE APPROVALS ARE REQUIRED

- Stanislaus County permit for well construction under Stanislaus County Code Chapter 9.36;
- Regional Water Quality Control Board (RWQCB) General Construction Permit;
- Approval by Patterson Irrigation District to place irrigation Laterals 3 North and 4 North in underground pipes through the project site.

III. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

A. LAND USE, PLANS AND POLICIES

This section describes the existing land uses in the project vicinity, reviews the land use regulatory setting of the Villages of Patterson Plan Area, and evaluates the general land use compatibility issues of the project with respect to surrounding existing land uses.

SETTING

REGIONAL AND LOCAL SETTING

The Plan Area is immediately north and east of the City of Patterson in western Stanislaus County. (See **Figure II-1** and **Figure II-2**.) The region's fertile soils and nearly year-round growing season support a diverse range of crops. The Plan Area is situated between Interstate-5 (I-5), about three miles to the west, and the San Joaquin River, about three miles to the east. Nearby Central Valley cities include Tracy and Manteca to the north; Riverbank, Modesto and Ceres to the northeast; Turlock to the east; and Merced to the southeast, and Newman, Gustine, and Los Banos to the south.

Regional access to the center of the City and to the Villages of Patterson Development Plan Area is from I-5. The City is bisected diagonally by State Highway 33 (which becomes Second Street within the City limits) and the California Northern Railroad that runs alongside. Although the Patterson area began as, and continues to be, an agricultural service center supporting the surrounding farming operations, the City has experienced considerable residential and business park growth in recent years and is evolving into a more suburban community. While agriculture and food-processing industries are important sectors of Stanislaus County's economy, growing commercial, industrial, and service sectors provide a diversified base for the area's labor force.

PROJECT VICINITY

The project site is bounded by the City of Patterson and urban uses along its entire southern boundary along Walnut Avenue, including recent low-density residential development and a high-density, residential complex located along Walnut Avenue at Eureka Street (operated by the Stanislaus County Housing Authority). (See **Figure II-3**.) This complex also contains a daycare center, the Central California Child Development Services Center, offering childcare services to low-income families.

To its west, the project site is also bounded by City of Patterson urban uses for most of its western boundary, including several existing light industrial uses including self storage, printing, and automotive uses on the west side of N. 1st Street. North of Salado Creek, the California Northern Railroad right-of-way and Highway 33 bound the Plan Area to the west. Across Highway 33 to the west of the project site is high-density residential development (El Solyo Village). North of Ivy Street across Highway 33 is low-density residential development and the new Westside Medical Professional Center complex which houses the Del Puerto Health Center. At the northern tip of the City of Patterson along Highway 33 at Ward Avenue is a farm equipment dealership. To the north and east of the project site are ongoing agricultural uses in unincorporated Stanislaus County.

PROJECT SITE

The project site consists primarily of agricultural uses (particularly orchards and row crops) and contains about 35 farm and residential compounds consisting of homes, farm structures, garages, sheds, and associated out buildings, sited close to existing roads. Patterson Irrigation District Laterals 4 North and 3 North run generally north-south through the project site. A 20-acre parcel east of Sycamore Avenue is currently owned and used by the City as a stormwater detention basin. A 6-acre parcel along the California Northern Railroad right-of way, south of Olive Avenue, is occupied by a vinyl fence manufacturing business.

REGULATORY FRAMEWORK

Until the project site is annexed by the City, both the Stanislaus County General Plan and Zoning Ordinance regulate land uses on the project site.

Stanislaus County

Existing County General Plan Land Use Designations

The *Stanislaus County General Plan* is a comprehensive long-term plan for the physical development of Stanislaus County, consisting of a statement of goals, policies, and implementation measures. The General Plan identifies the proposed location, character, and extent of land uses within the County through General Plan land use designations (Stanislaus County General Plan, Chapter I, Designations).

General Agriculture

The existing *Stanislaus County General Plan* land use designation for most of the project site is "General Agriculture." This establishes agriculture as the primary use for land so designated. The Agriculture designation recognizes the value and importance of agriculture by acting to

preclude incompatible urban development within agricultural areas. It is intended for areas of land that are presently or potentially desirable for agricultural use by virtue of their location, topography, parcel size, soil classification, and water availability, as well land uses adjacent to them. The Agriculture designation also allows dwelling units, limited commercial services, and light industrial uses related to agriculture, provided these do not conflict with the primary agricultural use.

Urban Transition

An approximately 106-acre area in the southern portion of the project site is designated "Urban Transition" under the County's General Plan. The purpose of the Urban Transition designation is to ensure that land remains in agricultural use until urban development consistent with a city's (or unincorporated community's) general plan designation is approved. The Urban Transition designation is appropriate for undeveloped land located within a city or town's sphere of influence.[1]

Existing County Zoning

The County's zoning ordinance (Stanislaus County Code, Title 21) implements the County's General Plan by establishing and defining zoning districts and the specific regulations and standards applicable to each zoning district including those governing uses of land, density, dimensions of structures and sites. County zoning district maps establish and indicate the location and boundaries of the zoning districts and are incorporated as part of the County zoning ordinance by reference.

General Agriculture

The Stanislaus County zoning for most of the Villages of Patterson project site is A-2-20 (General Agriculture, 20 acre). The approximately 106-acre southern portion of the project site (the same area designated "Urban Transition" under the County's General Plan) is zoned A-2-10 (General Agriculture, 10 acres). They will retain their existing A-2 zoning until the County zoning district maps are amended to rezone the parcels under specific development proposals, or until annexation by the City (at which point, County zoning would cease to apply).

Section 21.12.20 defines "agriculture" as "the tilling of the soil, raising of crops, horticulture, viticulture, small livestock farming, dairying, or animal husbandry, including all uses customarily incidental thereto." In addition to agriculture, the General Agriculture zoning permits the following uses: one single-family dwelling, a mobile home, accessory buildings and uses that are incidental to the agricultural use of the property, produce stands, lagoons for the storage of animal

[1] *Stanislaus County General Plan*, 1994, p. I-25.

wastes, Christmas tree sales lots, fireworks stands, produce stands, and family daycare. Other uses, less related or compatible with agriculture, are divided into three tiers described below.

Tier One uses are closely related to agriculture, and may be allowed if the County Planning Commission finds that the use would not conflict with the agricultural use of other property in the vicinity, including dehydrators; wholesale nurseries; landscape contractors; sale of firewood; agricultural service airports; permanent and temporary housing for agricultural workers; and produce markets.

Tier Two uses are agriculture-related commercial and industrial uses that may be allowed when the Planning Commission finds that the proposed use would not be detrimental to or conflict with agricultural use of other property in the vicinity; would not create a concentration of commercial and industrial uses in the vicinity; and is necessary and desirable for such establishment to be located within the agricultural area as opposed to areas zoned for commercial or industrial usage. Examples of Tier Two uses include agricultural service establishments primarily engaging in the provision of agricultural services to immediately surrounding farmers, including contract harvesting; agricultural processing plants and facilities; retail sales and tasting rooms in conjunction with an agricultural processing plant; and commercial or municipal composting.

Tier Three uses are not directly related to agriculture but may be necessary to serve the A-2 District or may be difficult to locate in an urban area. Some of these uses can be people-intensive and, as a result, have the potential to adversely impact agriculture. Tier Three uses may be allowed when the Planning Commission finds that the proposed use would not be substantially detrimental to or conflict with agricultural use of other property; and the parcel on which such use is requested is not located in one of the County's most productive agricultural areas; or the character of the use that is requested is such that the land may reasonably be returned to agricultural use in the future. Tier Three uses may include public stables; kennels; recreational guest camps; cemeteries; schools; churches; rifle ranges; public buildings, parks or other public facilities; public utilities and communication towers; sanitary landfills; day care centers; golf courses and driving ranges, athletic fields and facilities; and some types of commercial quarrying and mining.

Special Zoning Provisions for Williamson Act Properties

In addition to General Agriculture zoning, the Stanislaus County Zoning Ordinance (Section 21.20.25) includes special provisions related to uses on County lands subject to the California Land Conservation Act of 1965 (Williamson Act, Government Code, Section 51220). The Williamson Act encourages the conservation of agricultural lands by providing a tax incentive to land owners to restrict land uses to agriculture and compatible uses. It is a voluntary program administered through local governments, which are responsible for contracting with landowners.

Properties subject to Williamson Act contracts must remain in agricultural use for the duration of the contract, a minimum of 10 years. The contracts are self-renewing unless the property owner has filed a Notice of Non-renewal. Filing of a Notice of Non-renewal initiates an approximately nine-year period after which the contract is terminated.

For Williamson Act properties, uses such as utilities, farm labor camps and farm employee housing are deemed compatible with the agricultural use of the property while uses such as churches and schools are deemed incompatible. The County evaluates other uses requiring a use permit on a case-by-case basis under the following principles of compatibility: 1) The use will not significantly compromise the long-term productive agricultural capacity of the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district; 2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in the A-2 zoning district; and 3) The use will not result in the significant removal of adjacent contracted land from agricultural and open-space use.

As discussed in this EIR, Section III.B, Agricultural Resources, there are currently 20 properties within the project site that are subject to active Williamson Act contracts, totaling about 289 acres.

City of Patterson

Existing City of Patterson General Plan Land Use Designations

The City of Patterson's General Plan provides for those areas outside of its city limits but within its Planning Area, including all of the Villages of Patterson Development Plan Area, except for the approximately 40-acre area east of Sycamore Avenue which is outside of the City's General Plan Area. The City currently owns the eastern half of this area (see **Figure II-3**).

Low Density Residential

The City's General Plan land use designation for most of the project site is Low Density Residential (LR). This land use designation provides for single-family detached and attached homes, secondary residential units, public and quasi-public uses, and similar and compatible uses. Residential density may range from 1.1 to 5.0 units per acre.

Public/Quasi-Public

The City's General Plan land use designation for an approximately 27-acre area at the northwest corner of Walnut Avenue and Hartley Street is Public/Quasi-Public (PQP). This land use designation provides for publicly-owned facilities, schools, churches, and other public/quasi

public uses within the City's Planning Area. The City's General Plan limits the Floor Area Ratio (FAR) on land designated Public/Quasi Public to .50 or less.

Heavy Industrial

The City's General Plan land use designation for an approximately 9-acre area west of N. 1st Street is Heavy Industrial (HI). This land use designation provides for industrial parks, warehouses, manufacturing, public and quasi-public uses, and similar and compatible uses. The City's General Plan limits the FAR on land designated Heavy Industrial to .40 or less.

City of Patterson Zoning

The project site currently has no City of Patterson zoning, since it is outside of the City's incorporated boundaries. The proposed project includes an application to pre-zone the entire site to City of Patterson zoning districts corresponding to the proposed Land Use Designations under the Villages of Patterson Development Plan.

LAND USE, PLANS AND POLICIES

City of Patterson General Plan

Land Use Designation

The City's General Plan Area encompasses about 652 acres of the 692-acre project site, and currently includes about 616 acres of Low Density Residential use, about 9 acres of Heavy Industrial use, and about 27 acres of Public/Quasi-Public use. Under the Villages of Patterson project, about 125 acres currently designated as Low Density Residential (at the eastern end of the project site) would remain under the LDR designation. The acreage currently designated Public/Quasi-Public would remain in PQP use as a K-8 school.

The project would require an amendment to the City's General Plan Land Use Map to change about 414 acres currently designated as Low Density Residential to the following land use designations as defined in the City's General Plan:[2] Downtown Core (about 26 acres); Medium Density Residential (about 372 acres); Light Industrial (about 27 acres); Public/Quasi Public (about 41 acres, including potential school sites); and Parks (about 25 acres). The project would also require amendment to the City's General Plan Land Use map to change all of about 9 acres currently designated as Heavy Industrial to Light Industrial.

[2] City of Patterson, *General Plan*, 1992 as revised 2004, pp. I-1 - I-3.

Plans and Policies

Several major goals, policies and programs in the City of Patterson *1992 General Plan*, as updated in 2004, are relevant to the Villages of Patterson project. Set forth below are some of the most relevant goals, policies, and programs and a discussion of the project's compatibility.

- *Goal 1.A*: To provide for orderly, well planned and balanced growth consistent with the limits imposed by the City's infrastructure and the city's ability to assimilate new growth.
- *Land Use Policy I.A.1*: The City shall seek to preserve Patterson's traditional small-town qualities and agricultural heritage, while increasing its residential and employment base.

The Villages of Patterson project proposes compact mixed use development contiguous to existing development and would provide 3,100 dwelling units and up to 723,800 square feet of employment-generating light industrial and commercial space. With implementation of the proposed project the City of Patterson would continue to be an agricultural service center supporting the surrounding farming operations.

- *Land Use Policy I.A.3*: In analyzing initiating proceedings for the annexation of additional land for residential development, the City should consider the following criteria: A. The ratio of jobs to dwelling units is, or is approaching, 0.85 or greater. B. The population of the City is, or is approaching, 21,000 or greater.
- *Land Use Policy I.A.4*: The City Council may waive the requirements … of policy I.A.3. and initiate proceedings for annexation upon finding that the project will result in a significant public benefit which may include, but is not limited to, one or more of the following: A. The provisions of a significant number of new jobs. B. The provision of affordable housing that would not otherwise be provided by the City's affordable housing programs. C. The provision of a needed public facility or improvement. D. The permanent protection of sensitive resources such a habitat for special status plants or animal species or productive agricultural land.

In order to initiate proceedings for annexation, the Patterson City Council must find that the Villages of Patterson project would provide a significant public benefit(s) to justify waiving the growth requirements of Policy I.A.3, above. Among the public benefits that the City may consider under Policy I.A.4 is provision of affordable housing. The proposed project would provide more affordable units than otherwise called for under the City's inclusionary housing requirement (15 percent affordable to very low, low and moderate income households). The proposed project would provide 7.5 percent very low income, 7.5 percent low income, and 5 percent moderate income units, totaling 20 percent affordable units. Other public benefits of the project that the City may consider include provision of a new fire station/police satellite station, and provision of school sites and public recreational facilities that exceed what would otherwise be required.

- *Land Use Policy I.A.5*: The City shall link the rate of growth in Patterson to the provision of adequate services and infrastructure, including schools.

As discussed in Chapter II, Project Description, various infrastructure improvements, including wastewater collection facilities, water system, new roadways, and new or upgraded stormwater facilities would be developed as part of the Villages of Patterson project. As discussed in Section J, Water Supply, adequate groundwater supply exists to serve the projected buildout of the General Plan Area, including the Villages of Patterson project.

A Mello-Roos District would be established, or the project site would be annexed to a Mello-Roos District, to fund infrastructure improvements necessary to support development of the proposed project. In addition to the Mello-Roos financing provision, the City collects development impact fees to defray the cost of other public facilities, such as police and fire protection facilities, and parks that are not covered by the Mello-Roos District. The Patterson Joint Unified School District collects development fees for school facilities.

- *Land Use Policy I.A.8*: The City shall promote growth that reinforces the downtown and its western extension as the geographic center of Patterson.

The proposed project would create a dense and compact community on the east side of Patterson in close proximity to downtown Patterson supporting downtown businesses.

- *Goal I.B*: To designate adequate land in a range of residential densities to address the housing need of all income groups expected to reside in Patterson.

As discussed above under Policies I.A.3-4, the proposed project would include the construction of a considerable amount of very low, low and moderate income residential units. Additionally, the Villages of Patterson project provides for a diverse range of residential densities and housing types and configurations, to promote a diverse mix of income groups.

LOCAL AGENCY FORMATION COMMISSION

The Stanislaus County Local Agency Formation Commission (LAFCO) Policies and Procedures Manual articulates the following general land use goals to guide the Commission in implementing the purposes of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000.[3]

- *Goal 1*: To encourage planned, well-ordered, efficient development patterns;
- *Goal 2*: To encourage efficient and effective delivery of Governmental Services by the agencies who provide those services;
- *Goal 3*: To encourage urban land use patterns which balance urban growth with the conservation of open space and primary agricultural lands;
- *Goal 4*: To encourage the cities and the County to plan urban land use patterns which include a harmony between housing for residents and jobs provided by commercial and industrial development.

[3] Stanislaus LAFCO, Policies and Procedures Manual, December 2001, as amended August 2003.

The proposed Villages of Patterson Development project includes compact and efficient development patterns at higher densities than allowed under the existing Patterson General Plan and at considerably higher densities than typical for new residential development in the Central Valley. The proposed project is intended to create a cohesive, pedestrian-oriented community. Higher density development would consume less undeveloped agricultural land while maximizing the utility of infrastructure facilities and the efficiency of service delivery. The Light Industrial office park component and the mixed-use Village Circle, with its opportunities for retail and home-based businesses, is intended to balance residential development with jobs-generating uses, and to promote convenience and walkability within the Plan Area.

IMPACTS AND MITIGATION

APPROACH

Significance Criteria

The Villages of Patterson project would have a significant environmental impact if they would allow development that would be incompatible with existing or planned surrounding land uses.

Methodology and Assumptions

This analysis of impacts related to land use discusses the broad compatibility issues of the land uses proposed under the Villages of Patterson projects in relation to surrounding land uses. Potential land use conflicts resulting from development of the Villages of Patterson project (like noise, traffic, and visual impacts) are evaluated in detail in the other sections of this document.

This analysis assumes full buildout of the Villages of Patterson project. Under this assumption, the project is developed to its planned residential and commercial capacity consistent with the Villages of Patterson Development Plan, with the permitted and conditional uses under the City's zoning ordinance.

PROJECT IMPACTS AND MITIGATION

Impact A.1. Development of residential uses under the Villages of Patterson project could create potential land use compatibility conflicts with surrounding, ongoing agricultural operations. (Less than Significant)

The Villages of Patterson project would place residences in close proximity to ongoing agricultural operations to the north and east of the Plan Area. Aspects of agricultural operations (like dust, noise, odors, chemicals, aircraft and other machinery, and hours of operation) may be perceived as a nuisance to residents. Such conditions may give rise to complaints and increased public support for conversion of surrounding agricultural lands.

Both Stanislaus County and the City of Patterson have implemented "Right to Farm" ordinances. These Right to Farm ordinances establish a policy that agricultural operations, conducted according to accepted customs and standards, are not nuisances for the purposes of local enforcement of regulations. Under these ordinances, purchasers of property in the City or County must sign a disclosure statement notifying the purchaser of the potential inconvenience and discomfort associated with agricultural operations (specifically including aircraft) and of the County's and City's ordinances supporting the right to farm. These ordinances advise purchasers of property of the inherent potential problems associated with agricultural operations to prepare purchasers to accept these conditions.

Under the County and City's Right to Farm ordinances, impacts from customary agricultural operations on adjacent land are considered normal and acceptable conditions of rural living. By extension of this policy, potential land use compatibility conflicts arising from the placement of residential land uses in proximity to ongoing agricultural operations are considered less-than-significant impacts of the Villages of Patterson project.

Mitigation Measure. No mitigation necessary.

Impact A.2. Development under the Villages of Patterson Development Plan may create the potential for conflict between the proposed commercial and light industrial uses at the western edge of the Plan Area and adjacent residential uses to the east. (Less than Significant)

Implementation of the proposed project would place commercial and light industrial uses in proximity to existing residential development west of Highway 33 and proposed residential development east of N. 1st St. included as part of the project. This could result in land use compatibility conflicts between the proposed light industrial uses and adjacent residential uses.

The existing residential development west of the project site would be separated from proposed light industrial use on the project site by Highway 33 and the California Northern Railroad tracks. The proposed Light Industrial designation for the portion of the project site along the California Northern Railroad right-of-way south of Olive Avenue would replace its current "Heavy Industrial" designation under the City's General Plan. The redesignation of this area to Light Industrial under the proposed project would provide for more compatible uses in proximity to existing and proposed residential uses. Given the site constraints of the relatively narrow areas designated for light industrial use under the proposed project, it is anticipated that they would serve smaller, and therefore less intensive, light industrial and commercial users than those served by the West Patterson Business Park.

The Development Plan includes specific guidelines for buffering the transition between light industrial areas and existing and proposed residential areas. These call for controlled site access, landscaping of parking lots, quality design, understated signage, and screened loading areas.

These components of the Villages of Patterson Development Plan, included as part of the project, would reduce potential land use conflicts between light industrial and existing and proposed residential development to a less-than-significant level.

Mitigation Measure. No mitigation necessary.

B. VISUAL RESOURCES

SETTING

REGIONAL SETTING

The City of Patterson is located within California's Central Valley. This vast, nearly flat plane is bounded by the Sierra Nevada mountain range to the east and by the coastal range to the west. The flatness and openness of the terrain afford expansive vistas. Agriculture defines the region's visual character.

The project area lies near the western edge of the Central Valley in Stanislaus County. The hills of the Diablo Range of the coastal mountains rise abruptly from the valley floor about two miles west of the City. Interstate 5 follows the western edge of the valley along the base of the Diablo range. Interstate 5 is a designated a California Scenic Highway for its entire length through Stanislaus County. For much of this stretch, Interstate 5 is elevated above the western floor of the San Joaquin Valley, affording views to the east over the farmland.

The nearly treeless, undeveloped, grass-covered hills of the Diablo Range are the most prominent topographic feature throughout the otherwise flat region of western Stanislaus County, terminating views to the west and forming a backdrop to flat agricultural land (see **Figure III.B-1: Views of Project Vicinity, View a. - Diablo Range from Eucalyptus Avenue**).

LOCAL SETTING

The City's historic downtown owes its distinctive visual character to the foresight of the City's founder, Thomas Patterson, who laid out streets in a pattern modeled after Washington D.C. A circular "hub," El Circulo Avenue, rings the downtown center. Radiating streets emanate from a circular central plaza. The older residential blocks surrounding the downtown center are laid out in a regular axial street grid. Two secondary traffic circles are along El Circulo Avenue at Salado and Del Puerto Avenues where the circular, radial and grid streets converge. Residences in the older downtown residential district have been built over a number of years, gradually filling in the established block pattern.

The City's central circle and wedge-shaped parks east of the circle are planted with mature trees, as are the streets of the older downtown residential district surrounding the historic center of town. These trees provide greenery, shade, and a unifying formal element to the City, framing long views down the streets of the historic downtown.

View a. - Diablo Range from Eucalyptus Avenue

View b. - Residential Development at Walnut Avenue and N. 1st Street

View c. - Light Industrial Development Along West Side of N. 1st Street

SOURCE: Turnstone Consulting

FIGURE III.B-1: VIEWS OF PROJECT VICNINITY

The site planning of more recent residential areas of the City in the vicinity of the Plan Area, to its south and west, has a different visual character than older development patterns in and near Patterson's historic downtown. Often separated from major access streets by walls, they are inward-oriented, with less connection to downtown (see **Figure III.B-1: Views of Project Vicinity, View b. - Residential Development at Walnut Avenue and N. 1st Street**). In contrast to the formal geometric organization of the streets of downtown, more recent residential development is characterized by irregular curving streets and cul-de-sacs. This newer street pattern shortens views down streets. The lack of mature tree cover contrasts newly constructed residential development with the older residential neighborhoods of downtown Patterson. However, recently developed residential areas have street trees as an integral feature, as well as numerous landscaped public parks that provide recreational opportunities, neighborhood meeting places, and visual focal points for the surrounding residential neighborhoods. These areas will become increasingly inviting as the existing cover of landscaping matures.

Commercial and industrial development along N. 1st St. and Highway 33 intervenes between the City's historic downtown and the project site. Consequently, although relatively close to downtown, the project site lacks a strong sense of visual connection with downtown (see **Figure III.B-1: Views of Project Vicinity, View c. - Light Industrial Development Along West Side of N. 1st Street**).

PROJECT SITE

The visual character of the project site, like the agricultural lands to its north and east, is defined by its flatness, openness, and its agricultural use. The hills of the Diablo Range to the west serve as a backdrop to this agricultural landscape (see **Figure III.B-2: Views of Project Site from Sycamore Avenue, View a. - Corner of Olive Avenue and Sycamore Avenue**). A strong rectilinear "patchwork" pattern is formed by alternating roads, fields, orchards, and row crops. This pattern, familiar throughout the Central Valley, affords expansive views across open land The combined flatness and openness of the land and the rectilinear orientation of its features result in a clear sense of linear perspective with lines converging at a point on the horizon (see **Figure III.B-2: Views of Project Site from Sycamore Avenue, View b. - Looking Northwest Along Sycamore Avenue**).

View a. - Corner of Olive Avenue and Sycamore Avenue

View b. - Looking Northwest Along Sycamore Avenue

SOURCE: Turnstone Consulting

FIGURE III.B-2: VIEWS OF PROJECT SITE FROM SYCAMORE AVENUE

Farm compounds are scattered throughout the Plan Area. The older complexes among these consist of farmhouses, barns, water towers, and outbuildings (see **Figure III.B-3: Views of Project Site from Olive Avenue, View a. - Farm Complex on Olive Avenue Near Highway 33**). Many of these farm compounds date from the early years after the founding of the Patterson colony in 1909. The Notice of Preparation/Initial Study Checklist for the project (Appendix A to this EIR) concluded that these compounds did not possess sufficient historic or architectural distinction (individually or collectively) to qualify them as historic resources under CEQA. However, they are familiar features of the rural landscape in this area and often provide a picturesque counterpoint to open land. They are generally set close to existing streets in the Plan Area and are surrounded by clusters of mature ornamental trees and landscaping. Orchards also provide visual variety, providing a sense of spatial enclosure on otherwise open land (see **Figure III.B-3: Views of Project Site from Olive Avenue, View b. - Looking South Along N. 1st Street)**.

GENERAL PLAN GOALS AND POLICIES

The City's General Plan, Section VIII, City Design Structure and Aesthetics, contains the City's urban design goals and policies pertinent to visual resources. Some of the most relevant of these to the proposed Villages of Patterson project are listed below.

- *Goal VIII.A:* To promote the development of a coherent and distinctive physical form and structure that reflects Patterson's small-town qualities and agricultural heritage.
- *Policy VIII.A.3:* The City shall use the circulation system and the pedestrian and bicycle pathway system as important structural elements to link and define neighborhoods and districts in Patterson.
- *Policy VIII.A.7:* The City shall seek to maintain a distinct agricultural definition to the urban edge of the city as a means of emphasizing Patterson's small town qualities and agricultural heritage.
- *Policy III.B.8:* The City shall promote enhancements of the overall quality of development along Highway 33 through infill and private and public redevelopment, as necessary.
- *Goal VIII.C:* To…promote the development of neighborhoods and districts that emphasize pedestrian convenience.
- *Policy VIII.C.2:* The City shall promote the creation of well-defined residential neighborhoods in newly-developing areas. Each of these neighborhoods should have a clear focal point, such as a park, school, or other open space and community facility, and should be designed to promote pedestrian convenience. To this end, the City shall encourage the use of existing Patterson neighborhoods, including the grid street system, as models for the planning and design of new residential neighborhoods.

View a. - Farm Complex on Olive Avenue Near Highway 33

View b. - Looking South Along N. 1st Street

SOURCE: Turnstone Consulting

FIGURE III.B-3: VIEWS OF PROJECT SITE FROM OLIVE AVENUE

- *Policy VIII.C.3:* New commercial and office development should promote pedestrian convenience…
- *Goal VIII.D:* To maintain and enhance the quality of Patterson's landscape and streetscape.
- *Policy VIII.D.2:* The City shall require that all new development incorporate the planting of trees and other vegetation that extend the vegetation pattern of older adjacent neighborhoods into new development.
- *Policy VIII.D.3:* The City shall extend and reinforce major street tree/boulevard plantings to enhance the visual character of special and important streets within Patterson.

PATTERSON COMMUNITY DESIGN GUIDELINES

Patterson's Community Design Guidelines have been adopted to inform project applicants of the City's expectations for the quality and character of new development, and to provide guidelines for City staff and the Planning Commission in reviewing development proposals. The Design Guidelines establish objectives for the design of new development. The following objectives are particularly relevant to the Villages of Patterson project:[1]

- Maintain a high quality of craftsmanship in development through use of authentic building styles, design element, and materials.
- Integrate local cultural and historical themes into building and site design where appropriate.
- Pay attention to gateways and key corridors to enhance the overall city image.
- Encourage traditional neighborhood building and street patterns.
- Encourage pedestrian oriented buildings and site planning.
- Maintain views of the foothills west of the city.
- Continue streetscape landscaping.
- Control outdoor lighting to provide necessary security, but not create spillage onto adjacent properties or interfere with views of night skies.

In furtherance of these objectives, the Design Guidelines set out design principles for residential and commercial/industrial uses. These govern site planning, building proportions and articulation, materials, landscaping, lighting, and signage.

[1] City of Patterson, *Community Design Guidelines*, October 2003, pp. 3-5.

IMPACTS AND MITIGATION

APPROACH

Significance Criteria

The Villages of Patterson project would have a potentially significant impact on visual or aesthetic quality if the project would: 1) have a substantial adverse effect on a scenic vista or scenic highway; 2) substantially degrade the existing visual quality of the site and its surroundings; or 3) create intrusive amounts of light and glare.

Note that the Initial Study for the project (Appendix A to this EIR) found that the Villages of Patterson project would have a less-than-significant impact with respect to scenic highways. Therefore, this topic is not discussed in the analysis that follows.

Assumptions

This analysis of impacts on visual quality assumes full buildout to the project according to the Villages of Patterson Development Plan. It also assumes that the representative landscape plans, renderings, and design prototypes presented therein (some of which are reproduced below) are generally reflective of the overall design quality and character of spaces and buildings that would be constructed in the Plan Area.

PROJECT IMPACTS AND MITIGATION

Impact B.1. Development of the proposed Villages of Patterson project would alter distant views across the project site from Sycamore Avenue to the Diablo Range. (Less than Significant)

The proposed project would alter western views across open land of the Diablo Range now available from Sycamore Avenue.

Primary view corridors to the hills would become the east/west streets of the Villages of Patterson development (Eucalyptus Avenue, Olive Avenue, and Walnut Avenue) framing views to the distant hills. The Villages of Patterson project proposes a 6-foot-high perimeter wall along Sycamore Avenue, and along much of Eucalyptus, N. 1st Street and Walnut Avenue. These walls would function to screen the rear and side yards of properties that face major roadways. The walls would block short-range views into the residential development for motorists and pedestrians. The Villages of Patterson proposal calls for landscaping to soften the visual impact of the proposed walls and design guidelines for walls to provide visual interest and a sense of rhythm and human scale. One- and two-story houses at the eastern perimeter of the Villages of Patterson site would be seen rising from behind the walls in the foreground of the distant hills

when looking west from Sycamore Avenue. Their complex gabled roof forms would echo the contours of the distant hills beyond. The proposed project would extend the existing developed limits of the City northward and eastward. The compact development pattern envisioned by the Villages of Patterson Development Plan is intended to conserve views across open land elsewhere in the Patterson area. In the vicinity of the Plan Area, unencumbered views of the Diablo Range would continue to be available to the north of the project site.

For these reasons, the impact of the proposed project on views across the project site to the Diablo Range would be less than significant.

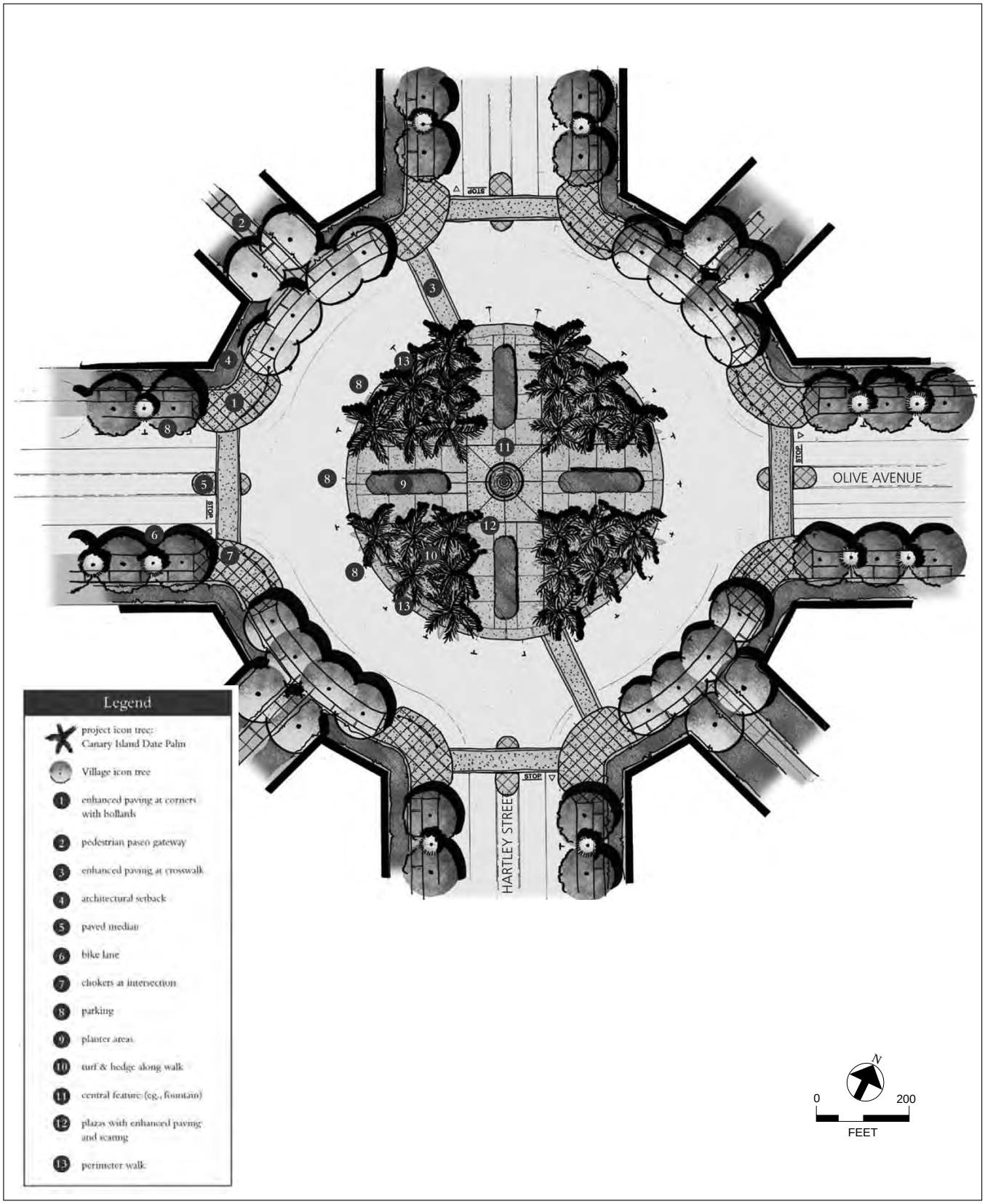
Mitigation Measure. No mitigation necessary.

Impact B.2. Development of the Villages of Patterson project would change the existing expansive agricultural visual character of the project vicinity. (Less than Significant)

The Villages of Patterson project would transform the existing expansive agricultural visual character of the project site. None of the project area's pre-existing visual character would remain within the Plan Area after the proposal is fully executed. The Villages of Patterson project includes features intended to implement the City's Community Design Guidelines and enhance the visual quality of the project site and its surroundings.

The Villages of Patterson Development Plan provides conceptual landscape plans for important community focal points such as the Village Circle (see **Figure III.B-4: Conceptual Plan for Village Circle** and **Figure III.B-5: Conceptual Rendering of Village Circle**), entries (see **Figure III.B-6: Conceptual Plan for Primary Community Entry** and **Figure III.B-7: Conceptual Rendering of the Primary Community Entry***)*, and parks (see **Figure III.B-8: Conceptual Plan for Neighborhood Park** and **Figure III.B-9: Conceptual Rendering of Neighborhood Park***)*.

Drawing on the example of Patterson's downtown, the Villages of Patterson proposal employs landscaping to enhance the visual quality of the Plan Area. The Villages of Patterson Development Plan includes a community landscape plan. The plan establishes a theme tree species for each of the four village quadrants that would highlight the quadrant's neighborhood park and collector streets, lending a distinct cohesive identity to each quadrant. The paseos and each of the perimeter streets of Eucalyptus Avenue, Sycamore Avenue, Walnut Avenue, and N. 1st Street would also incorporate a distinct tree species. In time, street trees would mature to provide greenery, shade, and a unifying formal element to the streets in a similar fashion as the mature trees that line the streets of the older neighborhoods of Patterson.

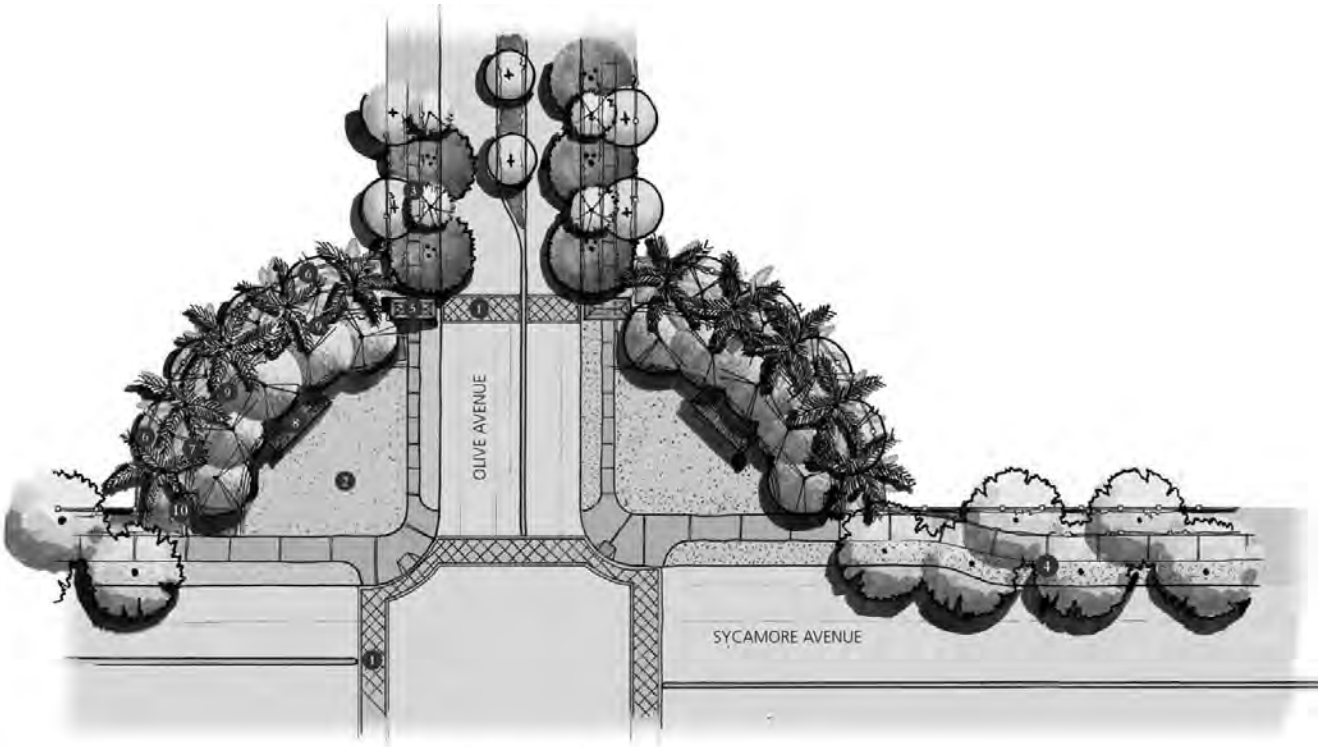


SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-4: CONCEPTUAL PLAN FOR VILLAGE CIRCLE

SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-5: CONCEPTUAL RENDERING OF VILLAGE CIRCLE



PLAN—ENTRANCE FROM SYCAMORE AVENUE

Legend

- project icon tree: Canary Island Date Palm
- 1 enhanced paving
- 2 turf
- 3 Olive Avenue streetscape
- 4 Sycamore Avenue streetscape
- 5 pedestrian portico with intermediate wall
- 6 perimeter wall
- 7 double row of flowering trees with groundcover & shrubs
- 8 project signage
- 9 intermediate wall
- 10 secondary entry monument with wall

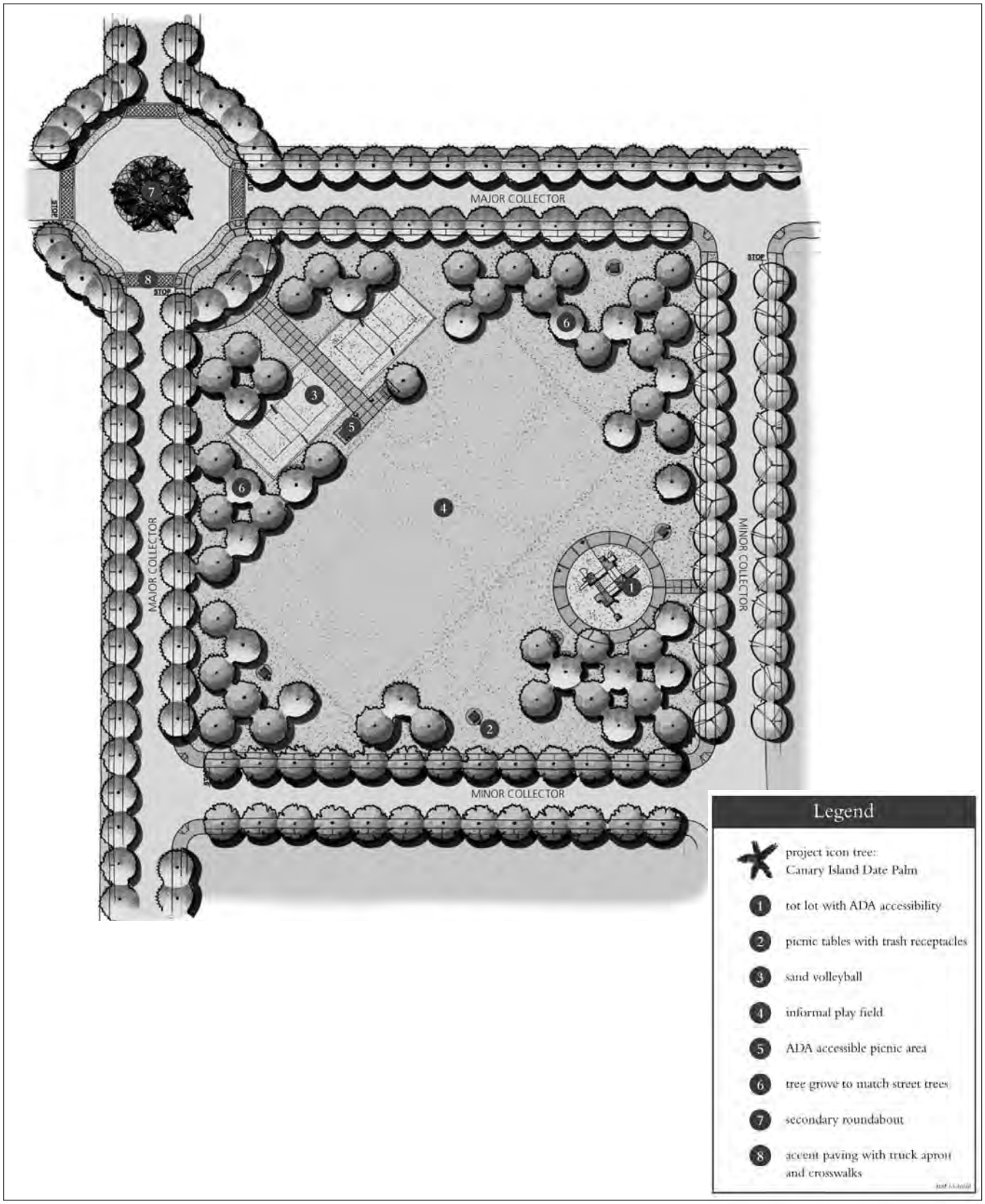
not to scale

SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-6: CONCEPTUAL PLAN FOR PRIMARY COMMUNITY ENTRY

SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-7: CONCEPTUAL RENDERING OF THE PRIMARY COMMUNITY ENTRY



SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-8: CONCEPTUAL PLAN FOR NEIGHBORHOOD PARK

SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-9: CONCEPTUAL RENDERING OF NEIGHBORHOOD PARK

The Development Plan calls for a diverse variety of single-family, attached, and multi-unit residential types (e.g., see **III.B-10: Representative Single-Family Home – Alley Loaded**; **Figure III.B-11: Representative Single-Family Home – Green Court**; and **Figure III.B-12: Representative Townhouse**).

The Villages of Patterson Development Plan includes project-specific design guidelines to implement the objectives and design principles of the City's Community Design Guidelines and to provide for high-quality design in new construction to enhance the visual quality of the project site. Design guidelines for residential development call for a pedestrian orientation and scale of buildings, emphasis on front entrances, minimization of the visual impact of garages and driveways through the use of alleyways and setback garages, and screening of mechanical equipment. Likewise, the Development Plan includes guidelines for commercial and light industrial development to promote pedestrian orientation and scale through varied massing and façade treatments, emphasis on building entrances, landscaping of parking lots, and screening of mechanical equipment and service areas.

Although the Villages of Patterson Development Plan project would transform the existing agricultural visual character of the area, it includes features that would enhance the visual quality of the Plan Area. It would not degrade the visual quality of the site and its surroundings and would therefore not result in a significant adverse impact on visual quality.

Mitigation Measure. No mitigation necessary.

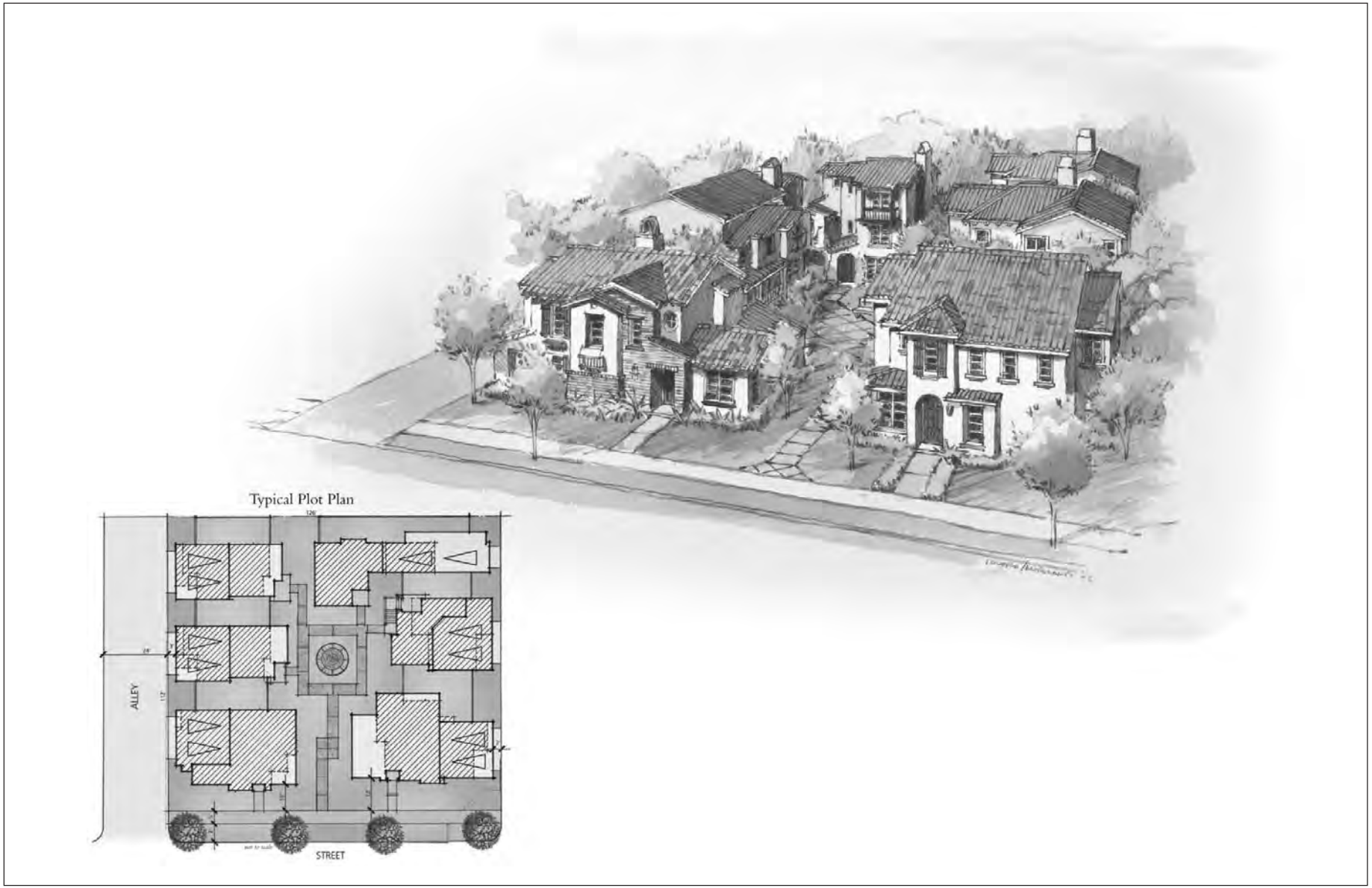
Impact B.3. Proposed commercial development under the Villages of Patterson Development Plan would require higher levels of outdoor lighting than surrounding residential development, creating the potential for glare on nearby residential properties. (Less than Significant)

The proposed commercial development under the Development Plan would create new sources of nighttime light. Building grounds, interior roadways, and surface parking lots in commercial areas would be illuminated in the interest of public safety.

Although the proposed project would increase outdoor lighting requirements on the project site, nighttime lighting levels for the project would remain within typical and accepted levels for a suburban residential setting. Project lighting would be required to conform to the lighting controls set out in the City's Community Design Guidelines. Light trespass beyond property lines would be controlled by shielding and aiming fixtures away from residential properties. Some indirect light (light reflected off of surfaces, and off of particles and moisture in the air) would still be visible to nearby residents as a "glow" when the commercial areas are viewed at

SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-10: REPRESENTATIVE SINGLE-FAMILY HOME-ALLEY LOADED



SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-11: REPRESENTATIVE SINGLE-FAMILY HOME-GREEN COURT

SOURCE: William Hezmalhalch Architects Inc.

FIGURE III.B-12: REPRESENTATIVE TOWNHOUSE

night. Such light, however, would become increasingly screened over the years as the cover of vegetation matures. Residents of existing and new residential areas of the Plan Area would perceive such indirect project light in the context of existing nighttime street lighting and exterior residential lighting.

Exterior nighttime lighting within commercial areas would therefore not create a significant source of light and glare on nearby properties.

Mitigation Measure. No mitigation necessary.

C. AGRICULTURAL RESOURCES

This section describes the existing agricultural resources, policies, and regulations of Stanislaus County and the City of Patterson. It also describes the existing agricultural resources of the proposed project site to establish a baseline against which the Villages of Patterson Development Plan's physical impacts may be compared. This section further evaluates the Development Plan's potential impacts on agricultural resources and describes mitigation measures that would lessen the project's potentially significant impacts.

SETTING

REGIONAL

Agriculture continues to be the leading industry in Stanislaus County due to flat land with good to excellent soil quality, a favorable climate, and the availability of water. In addition, the region has low-cost power and a good transportation system. In 2002, Stanislaus County generated $1.23 billion dollars from its agricultural products, ranking sixth among the nation's 3,075 counties and sixth among California's 58 counties.[1] Dairy products and almonds are currently the leading commodities in Stanislaus County.[2]

The climate of Stanislaus County is characterized by hot, dry summers and cool, moist winters. The winters are generally too cold for the commercial production of citrus fruits. However, the winter generally provides the necessary chilling period for deciduous fruit like peaches and apricots. Frost can also affect the types of crops that may be grown. Certain areas of Stanislaus County are considered thermal or warm and safe for crops such as almonds. West of Patterson and Newman and east of Oakdale, the temperatures are similar to the lowest portions of the valley floor except that the winter lows are not quite as severe and citrus fruits can be grown commercially. Many different field and vegetable crops can be grown here, as well as around Modesto and Turlock.

The average precipitation in the County is about 12 inches per year. Most of the rainfall occurs from December through March, with levels often around two inches per month. The summers are normally very dry with almost no precipitation from June to September. The dry summers and the light winter rains, in combination with the warm, temperate weather, produce conditions

[1] United States Department of Agriculture, California Agricultural Statistics Service, *2002 Census of Agriculture - County Profile*, p. 2. On file with the City of Patterson Planning Department.
[2] California Department of Food and Agriculture, *Summary of County Agricultural Commissioners' Reports, Gross Values by Commodity Groups - California 2003-2004*, October 2005, p. 15. On file with the City of Patterson Planning Department.

suitable for growing crops like almonds, apricots, oranges, tomatoes, alfalfa, grapes, and many others.

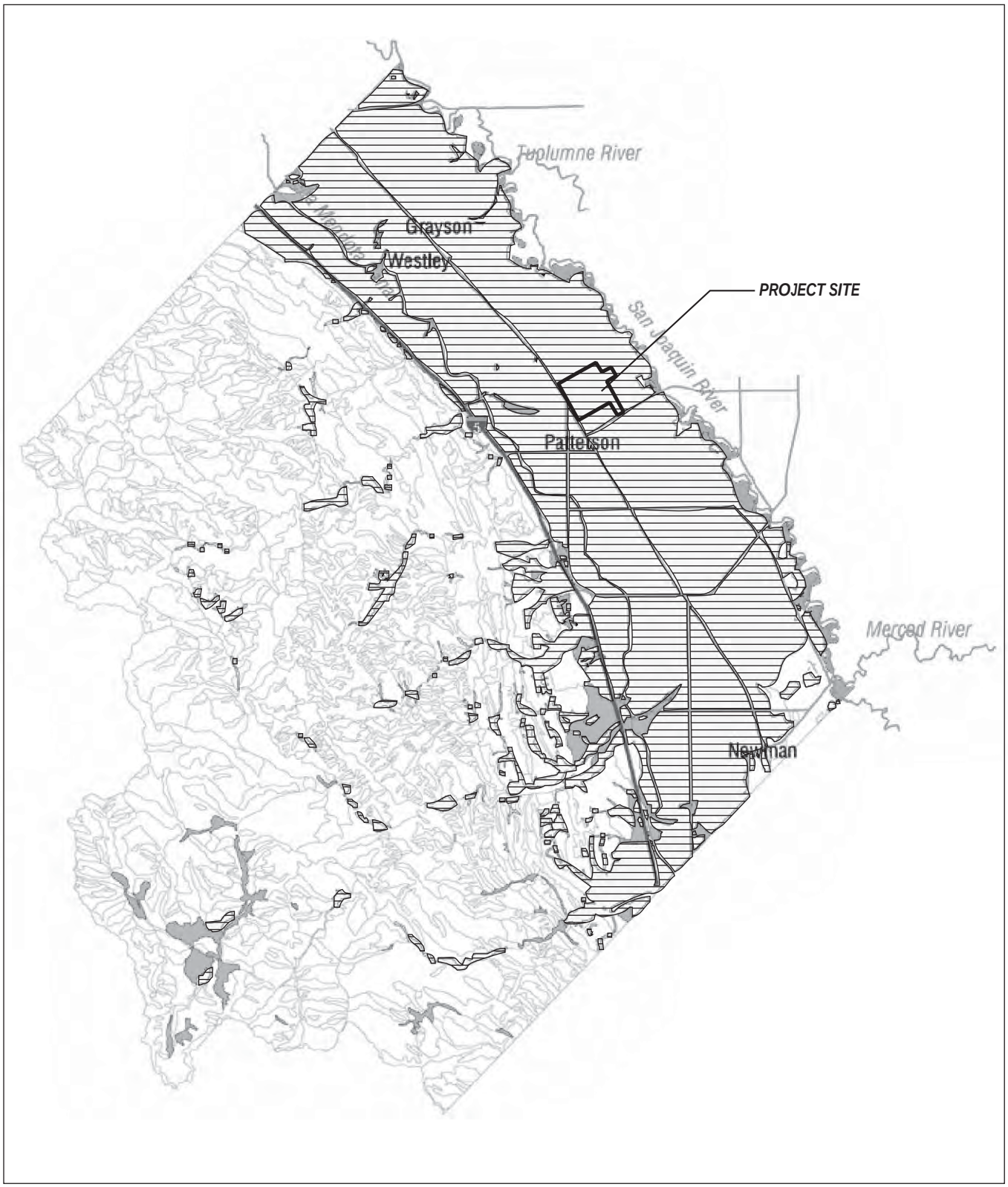
Soils

The project site is in Stanislaus County, west of the San Joaquin River. Stanislaus County occupies a portion of the northern San Joaquin Valley, extending from the foothills of the Sierra Nevada to the ridge of the Diablo Range. Stanislaus County can be geologically divided into what is commonly referred to as the eastside (approximately two-thirds of the county) and the westside (approximately one-third of the county). This division is based on the two predominant types of soils. The San Joaquin River forms a natural divider for these two types of soils. All of the westside valley soils are of recent alluviums: loams, clay loams, and clays washed out from the coastal range of mountains. These soils are different from eastside soils because the parent material is fine-grained sandstones and shales. As a result, these soils tend to be fine textured as opposed to the coarser soils of the eastside.[3]

The United States Department of Agriculture Storie Index evaluates the general suitability of soils for agriculture, based on four factors that represent the inherent characteristics and qualities of the soils. Soils are rated on a scale from 1 to 7, with 1 being the best. The Storie Index does not consider physical or economic factors, such as irrigation, that might determine the desirability of growing certain plants in a given area. Ratings for the primary soil types on the project site are as follows: El Solyo silty clay is rated "1,"[4] the Vernalis-Zacharias complex is rated "2,"[5] and the Capay Clay is rated "4."[6]

In 2002, 260,730 acres in Stanislaus County were classified as prime farmland.[7] The United States Department of Agriculture Natural Resources Conservation Service (NRCS) has classified nearly all of the land between Interstate 5 and the San Joaquin River in Stanislaus County as prime farmland, as shown on **Figure III.C-1: Prime Farmland in Western Stanislaus County**.[8] Prime farmland is defined in the United States Code as "land that has the

[3] Stanislaus County, General Plan, Agricultural Element, Appendix A, p. A-3, 1992.
[4] In the area, soils in Grade 1 are well suited to intensively grown irrigated crops that are climatically adapted to the region.
[5] Grade 2 soils are good agricultural soils, although they are not so desirable as soils in grade 1 because of a less permeable subsoil, deep cemented layers (e.g., duripans), a gravelly or moderately fine textured surface layer, moderate or strong slopes, restricted drainage, low available water capacity, lower soil fertility, or a slight or moderate hazard of flooding.
[6] Grade 4 soils are poorly suited. They are more limited in their agricultural potential than the soils in grade 3 because of restrictions, such as a shallower depth; steeper slopes; poorer drainage; a less permeable subsoil; a gravelly, sandy, or clayey surface layer; channeled or hummocky microrelief; acidity.
[7] California Department of Conservation, Division of Land Resource Protection, Table A-38 Stanislaus County, 2000-2002 Land Use Conversion.
[8] United States Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Stanislaus County, California, Western Part, 2002.



SOURCE: USDA-Natural Resources Conservation Service (NRCS)

TURNSTONE CONSULTING

VILLAGES OF PATTERSON

FIGURE III.C-1: PRIME FARMLAND IN WESTERN STANISLAUS COUNTY

best combination of physical and chemical characteristics for producing ... agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion...."[9] Prime farmland does not include land already in or committed to urban development. Because nearly all undeveloped land that surrounds the developed areas of Patterson, including the project site, is classified and mapped as Prime Farmland, any expansion of the City's boundaries almost invariably results in conversion of Prime Farmland.

The California Department of Conservation, Division of Land Resource Protection (DLRP) classifies farmland types in the Farmland Mapping and Monitoring Program (FMMP), which provides guidelines for assessing the relative value of agricultural land in the state. The system considers modern soil surveys, recent farming activity, and available farming infrastructure such as irrigation. FMMP maps five categories of farmland as well as urban and other land. Each of these farmland types is defined below.[10]

(1) **Prime Farmland** has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

(2) **Farmland of Statewide Importance** is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

(3) **Unique Farmland** consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

(4) **Farmland of Local Importance** is land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

(5) **Grazing Land** is land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit is 40 acres.

The DLRP is responsible for monitoring agricultural land conversion on a statewide basis. The DLRP monitors the conversion of California's agricultural lands in two-year increments. The amount of prime agricultural land in California has been declining for decades. Much of the loss is from economic pressures to convert farmland to commercial and residential use. During the

[9] Unites States Code, Title 7-Agriculture, Chapter 73-Farmland Protection Policy, Section 4201(c)(1)(A).
[10] California Department of Conservation, Division of Land Resource Protection, *California Farmland Conversion Report 2000-2002*, December 2004, p. 5. Available online at http://www.consrv.ca.gov/dlrp/fmmp/pubs/2000_2002/FCR/FCR_00_02_entire.pdf.

latest period for which data are available, 2000-2002, among all of the regions of California, the San Joaquin Valley region led the state in conversion of irrigated farmland to urban uses.[11]

Agricultural Development

Prior to the Gold Rush, the fertile valley floor was a large prairie that served as home to large herds of elk and deer. Early agriculture consisted mainly of cattle raising, and grazing operations spread through the San Joaquin Valley. Grain became an increasingly important crop during the 1860s and resulted in the establishment of many claims and homesteads. Town and farm operations located along the rivers, and commodities were transported along the valley's waterways. By 1880, the grasslands of the valley floor had been converted to dryland farming, and the area became one of the major grain producers of the world. Railroad lines were completed in the 1880s, improving transportation and intensifying agricultural development in the San Joaquin Valley. The formation of the Turlock, Modesto, and West Stanislaus Irrigation Districts, in 1900, 1904, and 1920, respectively, led to the county's transformation from a wheat-producing area, once known as the state's banner wheat county,[12] to a community of small farms with diversified crops. The vast wheat ranches of the late 19th century disappeared when irrigation was introduced and farming operations diversified.

In the decades after World War II, rapid urbanization of the San Francisco Bay region removed a significant amount of acreage from agricultural production. The northern San Joaquin Valley has experienced the pressure of urbanization with the conversion of agricultural land to non-agricultural uses increasing over time. Stanislaus County is within commute distance of major San Francisco Bay Area urban centers and is experiencing a period of population growth, as newcomers seek affordable housing and a more rural atmosphere. Since 1992, Stanislaus County has experienced an increasing rate of conversion of prime farmland to urban development. Between 1992 and 1994, 588 acres of prime farmland were lost to urban development, 695 acres between 1994 and 1996, 1,648 acres between 1996 and 1998, 703 acres between 1998-2000, and 2,044 acres between 2000-2002.[13,14] Although data for 2002-2004 are not yet available through the California Department of Conservation, it is anticipated that this trend has continued to the present.

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[11] California Department of Conservation, Division of Land Resource Protection, *California Farmland Conversion Report 2000-2002*, December 2004, p. 19. Available online at http://www.consrv.ca.gov/dlrp/fmmp/pubs/2000_2002/FCR/FCR_00_02_entire.pdf.

[12] City of Patterson, *General Plan Background Report*, p. VII-4, 1992.

[13] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program "Land Use Conversion Tables, 1992-1994, 1994-1996, 1996-1998, 1998-2000, 2000-2002." Available at the City of Patterson Community Development Department.

[14] Other losses of Prime Farmland were due to construction of ranchettes (low-density rural residences), ecological restoration projects, and long-term land idling.

LOCAL

The City of Patterson is located in these rich agricultural lands. Since the City's incorporation in 1919 and establishment of the West Stanislaus Irrigation District in 1920, agriculture has been the Patterson area's largest industry. The establishment of the District gave West Stanislaus the right to appropriate water from the San Joaquin River and, at a later date, from the Central Valley Water Project. The availability of water greatly expanded the variety of crops that could be produced. The West Stanislaus Irrigation District provides water for irrigation to the area north and west of the Patterson city limits. The Patterson Irrigation District (PID) provides water for the irrigation of land that immediately surrounds the city and areas to the north, east, and south of the Patterson city limits including the project site.[15] Principal crops in the Patterson area include almonds, walnuts, dry beans, green beans, apricots, tomatoes, mixed melons, spinach, and peas.[16]

PROJECT SITE

The 692-acre project site is in unincorporated Stanislaus County at the northeastern edge of Patterson's existing developed area. Approximately 9 acres of the project site is in heavy industrial use. This approximately 9-acre area is located south of Olive Avenue along State Highway 33. The remainder of the project site, approximately 683 acres, is on agricultural lands that have been in production since the early 1900s. These agricultural lands are characterized by rich soils and flat topography. The predominant soil types on the project site are Capay Clay, El Solyo silty clay, and a Vernalis-Zacharias complex.[17] The soils on the northern portion of the site, north of Olive Avenue, are comprised primarily of El Solyo silty clay and Vernalis-Zacharias complex. The soils on the southern portion consist almost entirely of Capay Clay. All soils on the project site are considered to be prime farmland when irrigated.[18] The crops grown on the project site are walnuts, apricots, almonds, oats, wheat, alfalfa, and black mustard.[19] Due to crop rotation and market demand, crops may change frequently.

REGULATORY FRAMEWORK

The regulatory framework established by the codes, regulations, and policies of the California Department of Conservation, Division of Land Resource Protection; the Stanislaus County Local Agency Formation Commission; and the City of Patterson are discussed below.

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[15] City of Patterson, *General Plan Background Report*, Figure VI-4, 1992.
[16] City of Patterson, *General Plan Background Report*, p. VIII-5, 1992.
[17] United States Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Stanislaus County, California, Western Part, 2002. This is the most current USDA soil survey available for western Stanislaus County and can be accessed online at http://www.ca.nrcs.usda.gov/mlra02/wstan.html. The applicable quadrangles are available at the City of Patterson Community Development Department.
[18] Ibid, Table 5 - Prime Farmland.
[19] H.T. Harvey & Associates, Villages of Patterson Biotic Study, p. 5, April 2006.

California Department of Conservation, Division of Land Resource Protection (DLRP)

Williamson Act Program

The California Land Conservation Act of 1965 (Williamson Act, Government Code, Section 51200 et seq.) encourages the conservation of agricultural lands by providing a property tax incentive to owners who restrict land uses to agriculture and compatible uses. It is a voluntary program administered through local governments, which are responsible for contracting with landowners. Properties subject to Williamson Act contracts must remain in agricultural use for the duration of the contract, a minimum of 10 years. The contracts are self-renewing unless the property owner or a city or county has filed a Notice of Non-renewal. Filing a Notice of Non-renewal initiates an approximately nine-year period, after which the contract expires.

A Williamson Act contract may also be terminated through contract cancellation. A local government may only approve a request for immediate cancellation of a contract by making specific findings under state law of either consistency with the purposes of the Williamson Act or as a cancellation in the public interest (Cal. Government Code, Section 51282(a)). The California Department of Conservation must be notified of a petition for cancellation. The Department may submit comments advising the local government on the required findings regarding the proposed cancellation and the local government must consider these comments before acting on the proposed cancellation (Cal. Government Code, Section 51284.1). According to the State CEQA Guidelines, projects resulting in cancellation of a Williamson Act contract for any parcel of 100 acres or more should be considered as being of statewide, regional or area-wide significance.[20] (No Williamson Act parcel in the Plan Area is over 59 acres in size.)

Under Government Code Section 51243.5, where a Williamson Act contract was properly protested by the City upon its execution and such protest was upheld by LAFCO, the Commission shall determine whether the City shall succeed to the Williamson Act rights, duties, and powers of the County, or if the City may exercise its option not to succeed to the contracts, upon annexation of the property to the City. If the Commission determines the City can exercise its option to not succeed to a contract, the City must record a Certificate of Contract Termination with the County Recorder at the same time as the LAFCO Executive Officer files the Certificate of Completion under Section 57203.

[20] California Code of Regulations, Title 14, Section 15206(b)(3).

In addition, the territory proposed for inclusion in the City's Sphere of Influence includes land under Williamson Act Contracts. Government Code Section 56426.5 prohibits LAFCO from approving a change to the sphere of influence if that territory is subject to a Williamson Act Contract unless it makes certain findings. However, pursuant to Government Code Section 56426.5(c)(3), this section of the law does not apply to the parcels under Williamson Act Contract for which a Notice of Non-renewal has been filed.

Properties Subject to Williamson Act Contracts

There are 20 parcels in the project site under Williamson Act contract, totaling about 287 acres (see **Table III.C-1: Status of Williamson Act Parcels on Project Site**, and **Figure III.C-2: Location of Parcels subject to Williamson Act and Year of Expiration**). Full implementation of the proposed project would require the expiration or termination of all Williamson Act contracts within the Plan Area.

Table III.C-1: Status of Williamson Act Parcels on Project Site

APN	# Acres	Status*	Expiration
047-025-005	12.11	Active, NNR filed 2003	2012
047-025-006	58.50	Active, NNR filed 2003	2012
047-025-011	9.72	Active, Protest upheld subject to City's exercise of its option to cancel	
047-025-014	36.31	Active, NNR filed 2005	2014
047-025-019	18.70	Active, NNR filed 2005	2014
047-025-029	22.02	Active, NNR filed 2002	2011
047-025-030	4.85	Active, NNR filed 2002	2011
047-025-036	10.57	Active, NNR filed 2003	2012
047-025-037	0.70	Active, NNR filed 2003	2012
047-025-049	1.85	Active, NNR filed 2003	2013
047-025-050	15.88	Active, NNR filed 2003	2013
047-031-005	9.72	Active, NNR filed 2004	2013
047-031-014	21.06	Active, NNR filed 2000	2009
047-031-018	9.78	Active, Protest upheld subject to City's exercise of its option to cancel	
047-031-028	15.29	Active, NNR filed 2003	2012
047-031-029	22.19	Active, NNR filed 2002	2012
047-031-030	7.40	Active, NNR filed 2003	2012
047-031-036	1.00	Active, NNR filed 2005	2014
047-031-037	6.65	Active, NNR filed 2004	2013
047-031-038	1.91	Active, NNR filed 2003	2013
TOTAL	**286.21**		

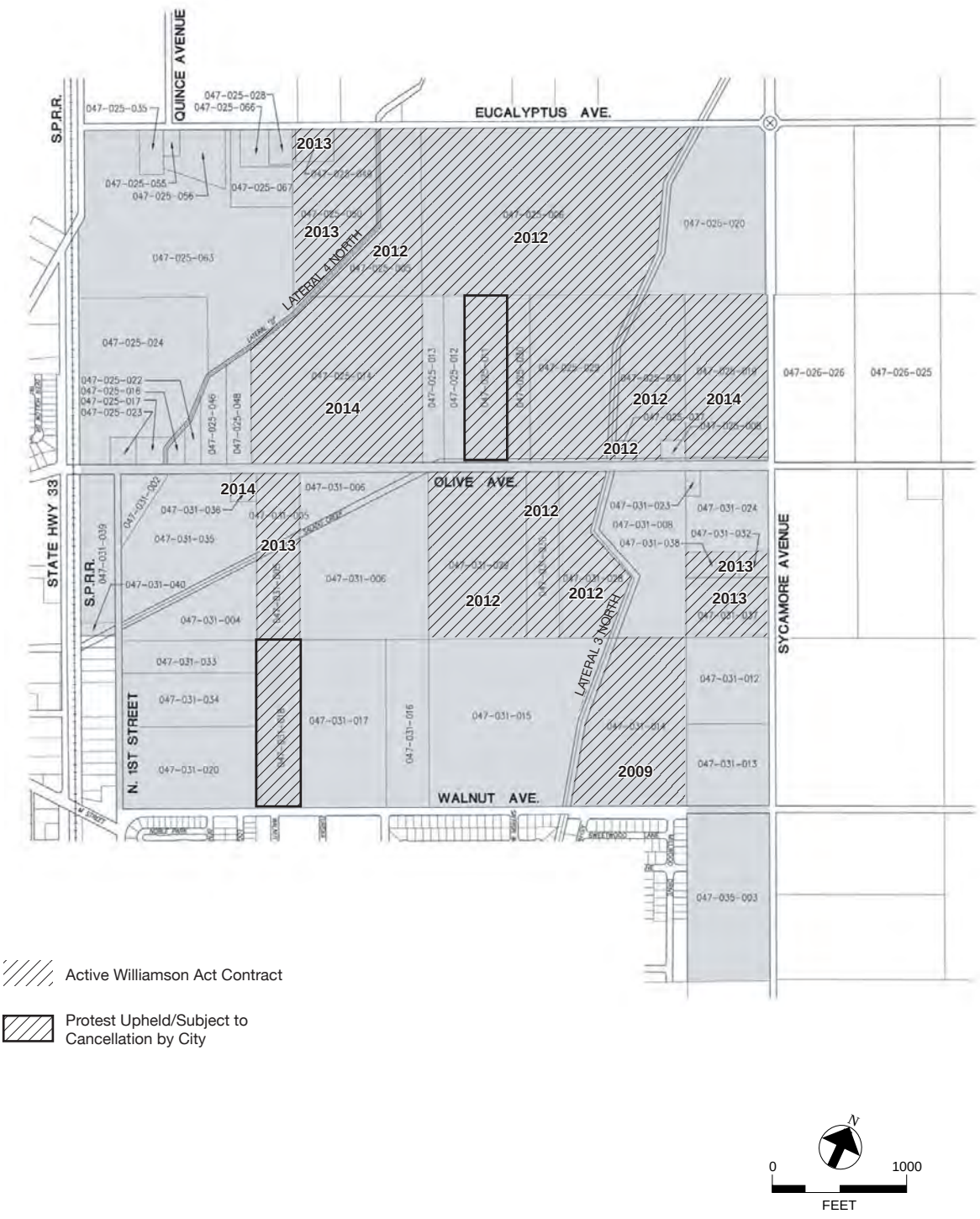
Notes:
* NNR - Notice of Non-renewal.

Source: Recorded Land Conservation Contracts and Notices of Non-renewal, as recorded on each individual parcel with the Stanislaus County Recorder's Office. Information regarding those parcels that were protested by the City of Patterson upon the execution of the land conservation contract was obtained by Stanislaus County Local Agency Formation Commission, Comment Letter on Notice of Preparation, the Villages of Patterson Development Plan, March 31, 2006.

Notices of Non-Renewal have been filed for 19 of the 20 parcels pursuant to Government Code Section 51245. The Notices of Non-renewal were filed between 2002 and 2005, with the earliest expiration in 2009. The owner of one parcel has not filed a Notice of Non-renewal. However, the contract encumbering that parcel (APN 047-025-011) was properly protested by the City of Patterson upon its execution and upheld by LAFCO, along with another contract for which a Notice of Non Renewal has been filed (APN 047-031-018). Upon annexation, the City may choose to exercise its option not to succeed to these contracts under Government Code Section 51243.5.

Stanislaus County Local Agency Formation Commission (LAFCO)

As part of its review of annexations and Sphere of Influence amendments, LAFCO considers soil quality and the availability of irrigation water in its assessment of the impacts of annexation



SOURCE: Stanislaus LAFCO

FIGURE III.C-2: LOCATION OF PARCELS SUBJECT TO WILLIAMSON ACT AND YEAR OF EXPIRATION

proposals on agricultural land. LAFCO policies direct that development of land for uses other than open space shall be guided away from existing prime agricultural land, unless that action would not promote the planned, orderly, efficient development of an area.[21]

City of Patterson

Right to Farm Ordinance

The City of Patterson, like Stanislaus County, has implemented a right to farm ordinance.[22] The City's right to farm ordinance establishes as part of all discretionary approvals of parcel maps and/or subdivision maps involving agricultural land a condition of approval that the final recorded map include a statement that "all persons purchasing lots within the boundaries of this approved map should be prepared to accept the inconveniences associated with agricultural operations, such as noise, odors, dust, fumes, chemicals, smoke and hours of operation that may accompany agricultural operations. The City of Patterson has determined that such inconveniences shall not be considered to be a nuisance if agricultural operations are consistent with accepted customs and standards." The right to farm ordinance also established a "Right-to-Farm Notice." The notice is intended to make residents more aware of the city's right to farm policy. Under the City's right to farm ordinance, impacts from customary agricultural operations on adjacent land are considered normal and acceptable conditions of rural living. Under the ordinance, sellers and purchasers of property in the City must sign a disclosure statement notifying the purchaser of the potential inconvenience and discomfort associated with agricultural operations and of the City's policy supporting the right to farm.

General Plan Goals and Policies

The following major goals, policies, and programs in the City of Patterson *General Plan*, as updated in 2004, are relevant to the proposed project:

- *Land Use Policy I.A.1*: The City shall seek to preserve Patterson's traditional small-town qualities and agricultural heritage, while increasing its residential and employment base.
- *Natural Resources Policy VI.B.8*: Where necessary to promote planned city growth, the City shall encourage development of those agricultural lands that are already compromised by adjacent urban development or contain property required for the extension of infrastructure or other public facilities, before considering urban development on agricultural lands that are not subject to such urban pressures.
- *Natural Resources Goal VI.B*: To promote the productivity of agricultural land surrounding Patterson and to prevent the premature conversion of agricultural land to urban areas.

[21] California Government Code, Section 56377.
[22] City of Patterson Municipal Code, Title 6 - Health and Safety, Chapter 6.48 Right to Farm, Sections 6.48.10 to 6.48.050.

- *Natural Resources Policy VI.B.1*: The City shall support the continuation of agricultural uses on lands designated for urban uses until urban development is imminent.
- *Natural Resources Policy VI.B.2*: The City shall encourage the County to retain agricultural uses on lands surrounding the Planning Area and on lands within the Planning Area pending their annexation to the City or development by mutual agreement with the County.
- *Natural Resources Policy VI.B.5*: The City shall allow cancellation of Williamson Act contracts only if the City Council finds that cancellation is consistent with state law.
- *Natural Resources Policy VI.B.6*: The City shall adopt a right to farm ordinance.

IMPACTS AND MITIGATION

APPROACH

This analysis assumes the proposed project would be developed to its full planned capacity, converting the entire project site to non-agricultural use.

Significance Criteria

A project would have a potentially significant impact on agricultural resources if it would result in a substantial loss of agricultural resources or affect agricultural operations by establishing incompatible adjacent land uses.

PROJECT IMPACTS AND MITIGATION

Impact C.1. Implementation of the proposed project would directly result in the permanent loss of Prime Farmland. (Significant and Unavoidable)

The entire Villages of Patterson project site is classified as Prime Farmland by the United States Department of Agriculture and the California Department of Conservation. Implementation of the Villages of Patterson Development Plan would result in the conversion of approximately 683 acres of Prime Farmland to urban development, resulting in the permanent loss of the land as Prime Farmland. Included in this are 20 parcels encumbered by Williamson Act contracts totaling approximately 287 acres. No one Williamson Act parcel is over 59 acres.

The Villages of Patterson project site is adjacent to the City and designated for urban development in the City's General Plan. The proposed project would promote balanced growth along the eastern edge of the City of Patterson and would maintain the geographic and economic center of Patterson. Development at this location, between the existing downtown and the San Joaquin River, would be a logical progression of development for the City. Annexation and development of the project site would be generally consistent with LAFCO, Stanislaus County, and City of Patterson policies that provide for orderly urban growth and compact development

patterns to minimize impacts to agricultural lands. Development of the site would extend the urbanized area incrementally to the north and east and would maintain compact urban boundaries. Although development of the site would take place in an anticipated and orderly fashion, consistency with county and city policies would not reduce the direct impact of the permanent loss of Prime Farmland to less-than-significant levels.

This trend of increasing non-renewals and cancellations of Williamson Act contracts is consistent with statewide patterns. Despite this trend, the Williamson Act continues to be an effective tool in slowing the rate of the conversion of agricultural lands to non-agricultural uses.[23] The Williamson Act, and City policies listed in the Regulatory Framework section, above, would help to control the rate and pattern of farmland conversion. Adherence to these policies, however, would not sufficiently reduce the impact of loss of Prime Farmland to a less-than-significant level.

Therefore, the direct impact of the loss of Prime Farmland would be a significant and unavoidable impact of the project.

Mitigation Measure C.1

Prior to building permit issuance, applicant shall demonstrate, in a form acceptable to the City of Patterson, that mitigation for the direct permanent loss of productive agricultural land on a one-to-one acreage basis has been accomplished in one or more of the following ways:

- Monetary contribution to the California Farmland Conservancy Fund under the California Farmland Conservancy Program in an amount sufficient to allow the conservation of one acre of comparable farmland in Stanislaus County (or other similar land within the San Joaquin Valley as may be acceptable to the City) for each acre of farmland covered by the building permit sought under the proposed project. The amount of such contribution shall, at a minimum, reflect the then-current value of a conservation easement for comparable agricultural land in Stanislaus County, plus 10 percent for program administration under the Farmland Conservancy Program. The per acre valuation of such easement shall be acceptable to the Community Development Director, who may require that the valuation of such easement on comparable agricultural land be documented by appraisal; or
- The acquisition of a conservation easement or easements on agricultural lands of sufficient acreage to permanently conserve one acre of farmland in Stanislaus County (or other similar land within the San Joaquin Valley as may be acceptable to the City) for each acre covered by the building permit sought under the proposed project. Participation in the Williamson Act Easement Exchange Program in accordance with Government Code Section 51256 shall be credited on an acre-for-acre basis toward satisfying the requirements of this mitigation; or

[23] Stanislaus County, General Plan, Agricultural Element, p. 30, 1992.

- Any other strategy approved by the City of Patterson for the permanent conservation of a comparable quantity and quality of agricultural land in Stanislaus County (or other similar land within the San Joaquin Valley as may be acceptable to the City).

Contribution to the California Farmland Conservancy Fund, acquisition of a conservation easement or an equivalent program to conserve farmland would serve to compensate for the loss of Prime Farmland. However, such mitigation would not mitigate the impact of the loss of Prime Farmland on the project site to a less-than-significant level.

Restoration and/or recovery of Prime Farmland from existing urban uses would offset the direct impact of loss of Prime Farmland from new urban uses, but it is not proposed as a mitigation measure because such a measure would be unreasonably costly, inefficient and, therefore, infeasible. Reducing the amount of Prime Farmland converted to new urban uses is discussed in Chapter V, Alternatives, of this report, rather than proposed here as a mitigation measure.

Impact C.2. Development of the proposed project may burden continued agricultural operations surrounding the project site, and within the project site prior to development under the proposed Development Plan. (Less than Significant)

The proposed project would place residences and businesses in close proximity to ongoing agricultural operations, potentially burdening local agricultural operations. The dust, noise, odors, chemicals, aircraft and other machinery, and hours of operation associated with agricultural operations may be perceived as a nuisance to Villages of Patterson residents and merchants. This may give rise to complaints and lead to an increase in public support for conversion of surrounding agricultural lands. Developing urban land uses at the edge of agricultural land uses may also increase the potential for trespass on agricultural land, as well as crop pilfering, crop damage, and potential personal injury liability associated with trespass.

The northern and eastern edges of the Villages of Paterson project site are proposed to have soundwalls to buffer the transition between the proposed residences and schools and the agricultural operations to the north and east. Setbacks and landscaping would also buffer the perimeter of the Villages of Patterson Development Plan area.

Both Stanislaus County and the City of Patterson have implemented right to farm ordinances. These right to farm ordinances establish a policy that agricultural operations, conducted according to accepted customs and standards, are not nuisances. Under these ordinances, purchasers of property in the City or County must sign a disclosure statement notifying the purchaser of the potential inconvenience and discomfort associated with agricultural operations (specifically including aircraft) and of the County's and City's policies supporting the right to farm. Under the County and City's "Right to Farm" policies, impacts from customary

agricultural operations on adjacent land are considered normal and acceptable conditions of rural living.

The right to farm ordinances would reduce complaints by residents by advising purchasers of property of the inherent potential problems associated with agricultural operations, preparing purchasers to accept these conditions. They would also reduce the demand for local enforcement measures against farmers, establishing a presumption that impacts from customary agricultural operations are not nuisances, for the purposes of enforcement of local health and safety codes.

The portions of the Patterson Irrigation District's (PID) Laterals 3 North and 4 North that serve agricultural operations on the project site would be placed in culverts within 25-foot-wide irrigation easements. The Lateral 3 North culvert would be placed in an easement under the Haynes Way right-of-way and the Lateral 4 North culvert would be placed in an easement under the Garcia Way right-of-way and the Fishman Avenue right-of-way. Laterals 3 North and 4 North would continue to serve agricultural operations to the north and east of the project site, and as a result, surrounding agricultural operations would not be burdened.

Mitigation Measure. No mitigation necessary.

Impact C.3. Implementation of the Villages of Patterson Development Plan would contribute to the cumulative loss of Prime Farmland in the General Plan Area. (Significant and Unavoidable)

Most of the agricultural land in the western Stanislaus region is considered Prime Farmland. If Patterson or any other city in the region were to expand, the result would be the loss of Prime Farmland. This region has undergone rapid growth in recent years. Since 1992 Stanislaus County has experienced an increasing rate of conversion of prime farmland to urban development (from 588 acres in 1992-1994, 695 acres in 1994-1996, 1,648 acres in 1996-1998, 703 acres in 1998-2000, and 2,044 acres in 2000-2002).[24, 25] Although data for 2002-2004 are not yet available through the California Department of Conservation, it is anticipated that this trend has continued to the present.

From 1992 to 2002, about 1,702 acres of Prime Farmland in the City of Patterson were entitled for non-agricultural uses; approximately 577 acres of prime farmland to accommodate the Creekside residential developments and approximately 1,125 acres to accommodate the West Patterson Projects. The Villages of Patterson would contribute an additional 683 acres to that cumulative loss, resulting in a potential cumulative total of 2,385 acres of Prime Farmland lost

[24] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program "Land Use Conversion Tables, 1992-1994, 1994-1996, 1996-1998, 1998-2000, 2000-2002." On file with the City of Patterson Planning Department.
[25] Other losses of Prime Farmland were due to construction of ranchettes (low-density rural residences), ecological restoration projects, and long-term land idling.

within Patterson's General Plan Area. Countywide, it would contribute to a preexisting loss of approximately 5,700 acres of Prime Farmland during the same period.[26]

The City of Patterson's General Plan Environmental Impact Report projected the conversion of over 3,000 acres of high-quality agricultural land to urban uses at General Plan buildout in 2025.[27] With this project, the City of Patterson would move closer to buildout of its General Plan. The compact, land-efficient development pattern of the proposed project would serve to conserve farmland outside of the project site, but it would nonetheless contribute to the cumulative loss of prime farmland.

The cumulative impact of the loss of Prime Farmland in the Villages of Patterson project vicinity would be a significant and unavoidable impact of the proposed project.

Mitigation Measure C.3. Same as Mitigation Measure C.1.

[26] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program "Land Use Conversion Tables, 1992-1994, 1994-1996, 1996-1998, 1998-2000, 2000-2002." On file with the City of Patterson Planning Department.
[27] City of Patterson, *General Plan Environmental Impact Report*, June 11, 1992, p. VII-4.

D. TRANSPORTATION AND CIRCULATION

This section describes the existing traffic conditions on local roads and highways in the area surrounding the City of Patterson and the Villages of Patterson Development Plan project site, more generally describes bicycle and pedestrian conditions, and quantifies the traffic impacts that would result from development of the Villages of Patterson project. It summarizes the results of a detailed traffic analysis prepared by TJKM in *The Villages of Patterson EIR Traffic Study in the City of Patterson*, July 2006. A copy of the text of this report is provided in Appendix B to this EIR. Detailed calculations provided in the appendices to the TJKM Traffic Study are available for review at the City of Patterson Community Development Department offices.

SETTING

The City of Patterson is located approximately 35 miles south of the junction of Interstate-205 (I-205) and Interstate-5 (I-5). Like most cities in the Central Valley, it was originally built to support the agricultural economic development of the surrounding area. However, the population growth in the last 20 years can be attributed primarily to workers who live in Patterson and work in the San Francisco, San Jose, and Tri-Valley areas. Some growth can be attributed to growth in Stanislaus and Merced Counties, including Modesto, Turlock, and their surrounding areas. This population growth has produced an overall increase in traffic volumes on roadway networks in the Patterson area.

AREA ROADWAYS

Regional access to the City of Patterson is provided by Interstate-5, a major north-south freeway to the west of the city limits. I-5 connects to I-580 approximately 15 miles north of Patterson. I-5 and I-580 provide access to regional employment centers in Pleasanton, San Ramon, San Jose, and the rest of the San Francisco Bay Area. Freeway-bound traffic from the project site is expected to use primarily Sperry Avenue, Ward Avenue, State Route 33, and Las Palmas Avenue in Patterson (see **Figure III.D-1: Traffic Study Locations**, p. III.D.6, for locations of these and other streets discussed in this section). Important streets in the project vicinity are discussed below.

Interstate 5 is a four-lane freeway near Patterson. According to the 2005 traffic counts obtained from the Caltrans website, I-5 carries between 38,000 to 40,000 vehicles per day (vpd) in the vicinity of Sperry Avenue. The interchange of I-5/Sperry Avenue is configured as a tight diamond with a narrow local road underpass and a steep drop in grade next to the northbound on-ramp. The ramps are one lane in each direction.

State Route 33 (SR 33), a state highway, is located on the western edge of the Plan Area, approximately three miles east of I-5. SR 33 provides north-south access to Westley to the north and the City of Newman to the south. Four lanes are provided on SR 33 in the vicinity of Las Palmas Avenue near downtown Patterson. Its average daily traffic volume (ADT) is approximately 6,000 vpd.

Sperry Avenue is a major arterial roadway that serves as the major route of travel between I-5 and the City of Patterson, and connects I-5 and SR 33. It is four lanes between Ward Avenue and Baldwin Avenues. Between Baldwin and the I-5 ramps the street is two lanes; expansion to four lanes between Baldwin and the Delta Mendota Canal will begin in 2006. Near the freeway, its ADT is approximately 12,200 vpd.

East Las Palmas Avenue south of the Plan Area is a three-lane major east-west arterial including a center two-way left-turn lane west of Sycamore Avenue where it narrows to a two-lane road. West of SR 33, four major streets form a roundabout at Las Palmas Avenue. Traffic destined for Modesto currently uses either Las Palmas Avenue or SR 33. Its ADT is approximately 5,000 vpd. East of Sycamore Avenue, East Las Palmas Avenue is generally a wide two-lane road with palm trees on each side of the road. The palm tree streetscape continues to the west of SR 33 at the roundabout.

Ward Avenue is a two-lane north-south collector street that connects SR 33, near Eucalyptus Avenue, on the north and I-5 near Fink Road south of the City of Patterson.

Sycamore Avenue borders the east side of the Villages of Patterson Development Plan area. It is a two-lane north-south roadway and is classified as a collector roadway in the City's General Plan. Sycamore Avenue links Loquat Avenue to the north and E. Marshall Road to the south, a distance of seven miles.

Eucalyptus Avenue borders the north side of the Plan Area. It is an existing two-lane, two-way rural roadway.

Other streets in or adjacent to the Plan Area include North First Street (N. 1st Street), Olive Avenue, and Walnut Avenue. N. 1st Street and Olive Avenue are two-lane, two-way rural roads. Walnut Avenue in the vicinity of the Plan Area is a two-lane, two-way roadway that has been improved with curbs and sidewalks on the south side of the street. There are existing, unsignalized at-grade railroad crossings on Olive Avenue, and on Walnut Avenue to M Street. There are no striped bicycle lanes or signed bicycle routes in the immediate vicinity of the Plan Area.

REGULATORY FRAMEWORK

City of Patterson General Plan Goals and Policies

The City's General Plan, Section III, Transportation and Circulation, contains the City's goals and policies for transportation. Some of the most relevant of these to the proposed Villages of Patterson project are listed below.

- *Goal III.A:* To create and maintain a roadway network that will ensure the safe and efficient movement of people and goods throughout the city.
- *Policy III.A.2:* The City shall endeavor to maintain a Level of Service "D", as defined by the 2000 Highway Capacity Manual or subsequent revisions, on all streets and intersections within the city. To identify the potential impacts of new development on traffic service levels, the City shall require the preparation of traffic impact analyses at the sole expense of the developer for developments determined to be large enough to have potentially significant traffic impacts.
- *Policy III.A.4:* Neighborhood streets shall be designed, where feasible, to discourage unsafe traffic speeds.
- *Policy III.A.5:* The City shall promote development of an expressway to facilitate east-west travel and to divert through-traffic from Sperry Avenue to East Las Palmas Avenue. The general alignment of the expressway shall connect Sperry Avenue to East Las Palmas Avenue near the eastern edge of the Planning Area.
- *Policy III.A.8:* Industrial and commercial development shall be planned so that truck access through residential areas is avoided.
- *Policy III.A.9:* The City shall ensure through a combination of traffic impact fees and other funding mechanisms that new development fully mitigates its impact on traffic facilities by paying its share of the costs of circulation improvements. The total cost of required improvements shall be paid for by new development.
- *Goal III.D:* To consider air quality and noise impacts along with traffic flow efficiency when making decisions about improvements to existing roadways or construction of new roadways.
- *Policy III.D.1:* To the extent feasible, the City shall provide for separation of residential and other noise-sensitive land uses from major roadways to reduce noise and air pollution impacts.
- *Goal III.F:* To ensure the adequate provision of both on- and off-street parking.
- *Policy III.F:* The City shall require provision of adequate off-street parking in conjunction with all new developments. Parking shall be located convenient to new development and shall be easily accessible from the street system. The adequacy and appropriateness of parking requirements in the *Zoning Ordinance* shall be periodically reevaluated.
- *Goal III.G:* To promote pedestrian and bicycle travel as alternatives to automobile use.

- *Policy III.G.1:* The City shall create and maintain a safe and convenient system of pedestrian and bicycle pathways that encourages walking and bicycling as an alternative to driving. New development shall be required to pay its share of the costs for development of this pathway system.
- *Policy III.G.2:* The City shall establish a safe and convenient network of identified bicycle routes connecting residential areas by the shortest possible routes with recreation, shopping, and employment areas within the City. The City shall cooperate with surrounding jurisdictions in designing and implementing an area-wide bikeway system.
- *Policy III.G.3:* Bicycle routes shall emphasize paths separated from vehicle traffic to the maximum extent possible but shall also include bicycle lanes within public streets. The City shall limit on-street bicycle routes to those streets where the available roadway width and traffic volumes permit safe co-existence of bicycle and motor vehicle traffic.
- *Policy III.G.5:* The City shall require inclusion of bicycle parking facilities at all new major public facilities and commercial and employment sites.

Section VIII, City Design Structure and Aesthetics, also includes goals and policies related to transportation and circulation.

- *Goal VIII.C:* To…promote the development of neighborhoods and districts that emphasize pedestrian convenience.
- *Policy VIII.C.3:* New commercial and office development should promote pedestrian convenience…

City of Patterson Zoning Ordinance

Chapter 18.72 of the Patterson Zoning Ordinance addresses off-street parking requirements and provides design standards for off-street parking. Section 18.72.160 establishes the required number of off-street parking spaces for various land uses. Single-family houses with two or more bedrooms require two parking spaces, including one covered space, per dwelling unit. Apartment buildings require 1.2 spaces per dwelling unit with one bedroom, 1.5 spaces per dwelling unit with two bedrooms, and 2 spaces per unit with 3 or more bedrooms, each with one covered parking space. One additional guest parking space is required for each for residential units. Parks require 10 parking spaces per net acre of active recreational area within a park or playground, plus 5 spaces per net acre of passive recreational area. Offices and other commercial uses require 1 space per 250 square feet of floor area. Shopping centers require one space for each 200 square feet of floor area. These parking standards may be reduced by the Planning Commission and City Council as part of the approval of a planned development.

EXISTING TRAFFIC CONDITIONS

Traffic conditions were analyzed for both roadway links, assessing the a.m. and p.m. peak hours of traffic on a segment of the roadway, and for intersections during the a.m. and p.m. peak hours of traffic flow. The morning and afternoon peak hours are the peak hour of traffic volume during

the 7:00 to 9:00 a.m. peak period and during the 4:30 to 6:30 p.m. peak period. Based on consultation with the City of Patterson staff, 11 roadway segments and 26 intersections were analyzed (see **Figure III.D-1: Traffic Study Locations**). Of the 26 study intersections, 18 are unsignalized and 8 are signalized.

Operations at intersections controlled by signals or stop signs can be evaluated using a "level of service" concept (LOS). Levels of service are defined by a range from LOS A to LOS F. LOS A represents the best condition, denoting free-flow conditions with little or no restrictions to driver behavior. LOS F denotes jammed traffic flow conditions with intolerable delays and back-ups during the peak hour. Patterson General Plan Policy III.A.2 establishes LOS D as the lowest acceptable service level; LOS E and F are unacceptable.[1] A description of Levels of Service for signalized intersections is shown in **Table III.D-1: Level of Service Criteria for Signalized Intersections**.

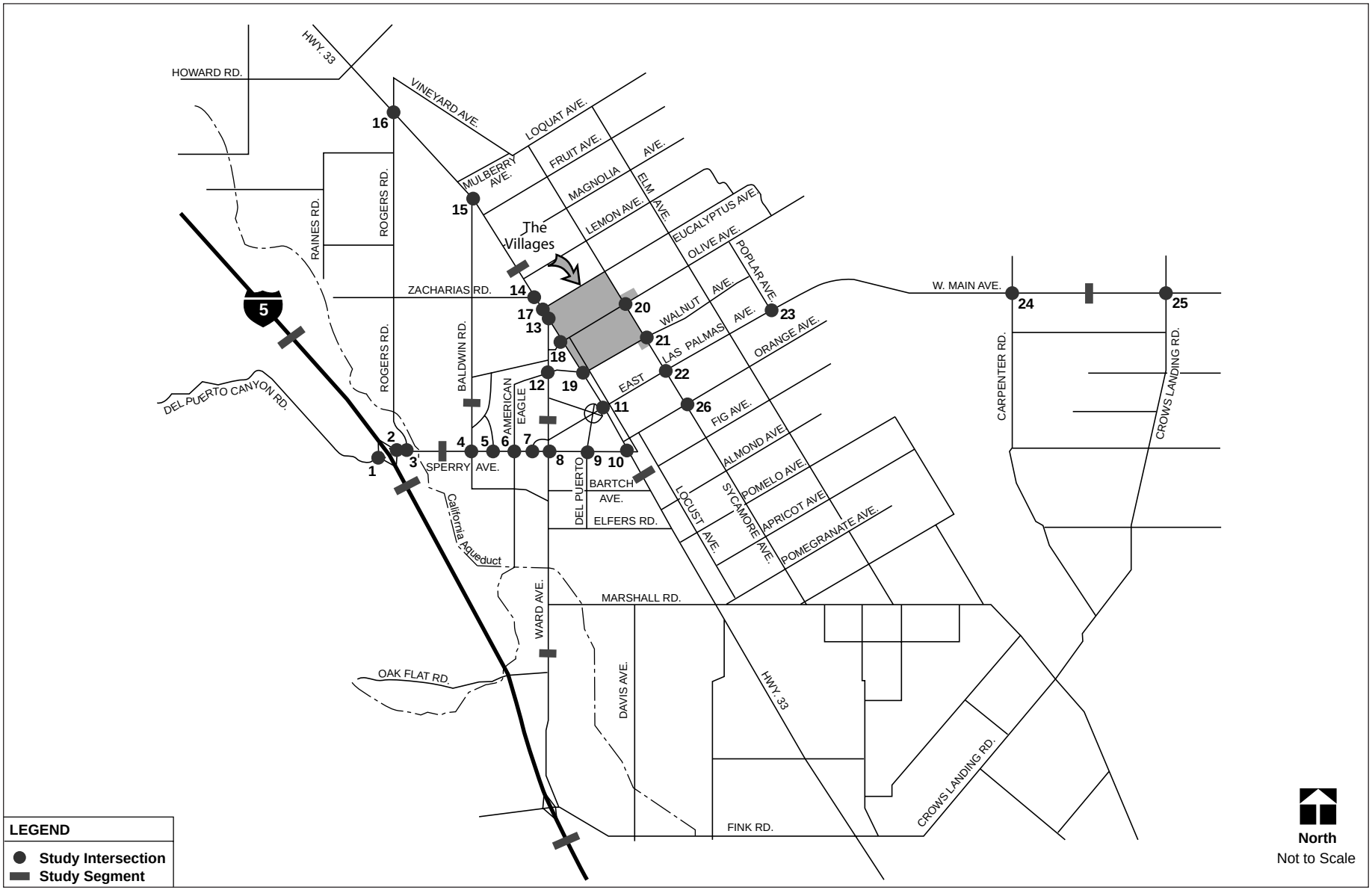
Table III.D-1: Level of Service Criteria for Signalized Intersections

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay. Progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.	< 10.0
B	Operations with low delay, with good progression and/or short cycle lengths. More vehicles stop causing higher levels of delay.	> 10.0 to 20.0
C	Operations with higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear when a given green phase does not serve all queued vehicles and overflow occurs. Many vehicles still pass through an intersection without stopping.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are frequent.	> 35.0 to 55.0
E	This is considered to be the limit of acceptable delay. Operations with high delay values indicating poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.	> 55.0 to 80.0
F	Operation with delays unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and very long cycle lengths may also be contributing factors to higher delay.	> 80.0

Note: < means less than; > means greater than.

Source: TJKM, 2006; *Highway Capacity Manual*, Transportation Research Board, 2000.

[1] Stanislaus County considers LOS C acceptable, but LOS D is an unacceptable service level.



SOURCE: TJKM

TURNSTONE CONSULTING

VILLAGES OF PATTERSON

FIGURE III.D-1: TRAFFIC STUDY LOCATIONS

Unsignalized intersections, both two-way stop- or yield-sign controlled intersections and one-way stop- or yield-sign controlled intersections, have slightly different level of service criteria from those used for signalized intersections. The primary reason for this is the difference that drivers expect a signalized intersection to carry higher traffic volumes than unsignalized intersections. The LOS is reported for both the minor approach as well as for the whole intersection. Depending on the availability of gaps, the minor approach might be operating at LOS D, E or F while the intersection LOS operates at LOS C or better. A minor approach that operates at LOS D, E or F does not automatically translate into a need for a traffic signal. There are many instances where only a few vehicles are experiencing LOS D, E or F on the minor approach while the whole intersection operates at an acceptable LOS. A signal is usually not warranted under such conditions. **Table III.D-2: Level of Service Criteria for Unsignalized Intersections,** provides LOS criteria used in the EIR Traffic Study for unsignalized intersections.

Table III.D-2: Level of Service Criteria for Unsignalized Intersections

Control Delay (sec/veh)	Level of Service	Delay
0-10	A	Little or no delay
> 10-15 sec/veh	B	Short traffic delays
> 15-25 sec/veh	C	Acceptable traffic delays
> 25-35 sec/veh	D	Long traffic delays
>35-50 sec/veh	E	Limit of tolerable traffic delays
> 50 sec/veh	F	Unacceptable traffic delay

Notes:
sec/veh = seconds per vehicle

Source: TJKM, 2006; *Highway Capacity Manual, Special Report No. 209,* Transportation Research Board, 2000.

Existing Traffic Levels of Service

According to the analysis of the study intersections, all 26 currently operate at LOS A or B with little delay, except at Crows Land Road and West Main Street where the intersection operates at LOS B in the a.m. peak hour and at an acceptable LOS C in the p.m. peak hour. **Table III.D-3: Existing Intersection Levels of Service**, shows existing levels of service for the morning and afternoon peak hour, along with the average delay per vehicle and the existing intersection controls. All study locations operate at acceptable LOS. Turning movement counts for each intersection are shown in the *Villages of Patterson EIR Traffic Study*, Appendix B, p. 8.

Table III.D-3: Existing Intersection Levels of Service (Revised)

Intersection	Existing Intersection Control	A.M.		P.M.	
		Delay	LOS	Delay	LOS
1. Sperry Ave/I-5 SB Off-Ramps	Unsignalized	8.6 (11.6)	A (B)	19.0 (25.2)	A (D)
2. Sperry Ave/I-5 NB On-Ramps	Unsignalized	0.9 (10.2)	A (B)	2.3 (13.0)	A (B)
3. Sperry Ave/Rogers Road	Signalized	7.0	A	7.9	A
4. Sperry Ave/Baldwin Rd	Signalized	7.9	A	6.3	A
5. Sperry Avenue/Walker Parkway	Signalized	2.6	A	2.2	A
6. Sperry Ave/American Eagle Dr	Signalized	3.7	A	5.5	A
7. Sperry Ave/Las Palmas Ave	Unsignalized	2.6 (14.0)	A (B)	3.0 (17.0)	A (C)
8. Sperry Ave/Ward Ave	Signalized	8.1	A	8.9	A
9. Sperry Ave/S Del Puerto Ave	Signalized	4.5	A	6.0	A
10. Sperry Ave/SR-33	Unsignalized	6.1 (18.5)	A (C)	14.6 (41.6)	B (E)
11. SR-33/Las Palmas Ave	Signalized	11.7	B	11.9	B
12. Ward Ave/ American Eagle Dr	Signalized	8.5	A	5.9	A
13. Ward Ave/SR-33	Unsignalized	3.5 (12.3)	A (B)	1.7 (14.3)	A (B)
14. Zacharias Rd/SR-33	Unsignalized	1.2 (10.2)	A (B)	0.7 (11.0)	A (B)
15. Baldwin Rd/SR-33	Unsignalized	0.6 (10.7)	A (B)	0.9 (14.7)	A (B)
16. Rogers Rd/SR-33	Unsignalized	0.6 (11.9)	A (B)	1.0 (13.5)	A (B)
17. SR-33/Eucalyptus	Unsignalized	0.6 (11.8)	A (B)	0.3 (12.0)	A (B)
18. Olive Avenue/SR-33	Unsignalized	2.6 (11.4)	A (B)	2.6 (17.3)	A (B)
19. Walnut Avenue/M Street/SR-33	Unsignalized	9.9 (34.5)	A (D)	5.2 (20.6)	A (C)
20. Olive Ave/Sycamore Ave	All-Way Stop	7.1	A	7.3	A
21. Walnut Ave/Sycamore Ave	Unsignalized	7.0 (9.3)	A (A)	8.1 (9.8)	A (A)
22. Las Palmas Avenue/Sycamore Ave	All-Way Stop	13.4	B	12.4	B
23. Poplar Ave/Las Palmas Ave	Unsignalized	0.1 (13.6)	A(B)	0.6 (11.4)	A (B)
24. Carpenter Rd/W Main Ave	All-Way Stop	12.1	B	14.3	B
25. Crows Landing Rd/W Main Ave	All-Way Stop	13.2	B	16.3	C
26. Sycamore Av./Orange Ave.	All-Way Stop	7.2	A	7.4	A

Notes: Delay = Average delay per vehicle in seconds.

Source: TJKM, 2007.

As with the study intersections, the roadway segments studied, including the three freeway segments, operate at acceptable service levels. All of the roadway segments operate at LOS C; two of the three freeway segments operate at LOS C and the other operates at LOS B. Roadway segment levels of service are shown in **Table III.D-4**; freeway segments are reported in **Table III.D-5**. Thus, all roadway and freeway segments operate at acceptable LOS.

Table III.D-4: Existing Levels of Service for Roadway Segments

No.	Roadway Segment	Direction	No. Lanes	Capacity	A.M. Peak Hour			P.M. Peak Hour		
					Volume (veh)	Speed (mph)	LOS	Volume (veh)	Speed (mph)	LOS
1.	Sperry Ave. e/o Rogers Rd.	EB	2	2,280	255	26.5	C	535	27	C
		WB	2	2,280	445	26.0	C	279	26.5	C
2.	Baldwin Rd, n/o Sperry Ave.	NB	1	890	93	19.5	C	104	19.5	C
		SB	1	890	135	19.0	C	105	19.5	C
3.	SR-33, n/o Zacharias Rd.	NB	1	1,140	178	31.0	C	254	30.5	C
		SB	1	1,140	234	30.5	C	359	29.5	C
4.	SR-33, s/o Sperry Ave.	NB	1	1,140	303	30.0	C	239	30.5	C
		SB	1	1,140	224	30.5	C	342	30.0	C
5.	Ward Ave., n/o Las Palmas Ave.	NB	1	1,140	361	26.0	C	159	26.5	C
		SB	1	1,140	338	26.0	C	185	26.5	C
6.	Ward Ave., s/o Marshall Rd.	NB	1	1,140	139	26.5	C	127	26.5	C
		SB	1	1,140	144	26.5	C	114	26.5	C
7.	E. Las Palmas Ave., e/o Sycamore Ave.	EB	1	1,140	343	26.0	C	312	26.0	C
		WB	1	1,140	337	26.0	C	317	26.0	C
8.	Main St., e/o Carpenter Rd.	EB	1	1,140	222	27.0	C	321	26.0	C
		WB	1	1,140	236	27.0	C	239	26.5	C

Notes: 1. n/o = north of; e/o = east of; s/o = south of

Source: TJKM, 2006.

Table III.D-5: Existing Levels of Service for Freeway Segments

No.	Freeway Segment	Lanes	Capacity	Peak Hour		
				Volume	V/C	LOS
1.	I-5, north of Sperry Ave.	4	9,200	4,650	0.51	C
2.	I-5, south of Sperry Ave.	4	9,200	3,900	0.42	B
3.	I-5, south of Fink Rd.	4	9,200	5,000	0.54	C

Sources: Caltrans (volumes); TJKM 2006.

OTHER TRANSPORTATION MODES

The Plan Area currently is not served directly by any public transit services. The Stanislaus Regional Transit system (StaRT) provides two Runabout service routes: Route 40 between Modesto and Patterson via Grayson and Westley, with stops along SR 33 at El Solyo Village, North 2nd and L Streets, and City Park; and Route 45 between Turlock, Newman and Gustine via downtown Patterson, Salado Avenue, Ward Avenue, Sperry Avenue and SR 33. Some stops for Route 40 along SR 33, and the stop for Route 45 along East Las Palmas Avenue at Weber/LaLynn, would be within walking distance of portions of the Plan Area. In addition to these regular transit routes, a Dial-A-Ride service is available in Patterson.

Railroad tracks border the west side of the project site. Currently one train per day uses these tracks. No passenger service is provided on this rail line. There are three at-grade crossings of the railroad track in the vicinity of the project site. None of the three crossings have railroad crossing arms or warning signals.

The intent of the City's *General Plan* is to encourage pedestrian and bicycle travel. New development is expected to pay its fair share of the costs for development of a pathway system to connect residential areas with recreation, shopping, and employment areas within the City, and where practical, as part of a region-wide bikeway system. The *General Plan* specifies that while some bicycle lanes shall be included within public streets, the emphasis shall be on paths separated from vehicle traffic to the maximum extent possible.

IMPACTS AND MITIGATION

APPROACH

Significance Criteria

A development project would normally have a significant effect on the environment if it would cause an increase in traffic which is substantial in relation to the existing or future baseline traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections), or change the condition of an existing street (i.e., through street closure, or change to direction of travel) in a manner that would substantially affect access or traffic load and capacity of the street system. Specifically, for the City of Patterson, a project-generated increase in traffic is considered to be significant if it would result in any of the following:

- At a signalized intersection, the project traffic would cause the intersection level of service (LOS) to deteriorate below LOS D.
- At a side street stop-controlled study intersection, where the intersection currently does not satisfy traffic signal warrants, the project would cause one or more traffic signal warrants to be satisfied.
- At a side street stop-controlled study intersection, where the intersection currently does not satisfy traffic signal warrants, if the project would not cause traffic to satisfy one or more traffic signal warrants, but would cause the critical movement(s) at the intersection to degrade to worse than LOS D (or from LOS E to LOS F), and where the increase in minor street critical delay would involve more than 30 peak-hour vehicles and is judged high enough such that an unsafe condition could prevail.

Note that the Initial Study for the project (Appendix A to this EIR) found that the Villages of Patterson project would have a less-than-significant impact with respect to emergency access, and traffic hazards such as sharp curves, and no impact with respect to air traffic patterns.

Assumptions

The analysis of traffic impacts assumes full buildout of the Villages of Patterson Development Plan with the residential densities and locations originally proposed in December 2005. After the Initial Study and Notice of Preparation were published in March 2006, and after the traffic impact analysis was completed in April, the project sponsor made minor revisions in residential densities and locations, and in locations of potential school sites. The total number of residential units remains the same at 3,100, with fewer low-density residential units, more medium-density residential units, and no high-density residential units. The amount of non-residential light industrial and village center commercial square footage remains the same, and the acreage of public/quasi public area was slightly reduced.

With these changes, vehicle trips generated to/from the project site were reduced slightly compared to trips generated by the original project analyzed in the traffic impact analysis, by approximately 10 percent in the a.m. peak hour and approximately 2 percent in the p.m. peak hour. Thus, the traffic impacts reported here are conservative and could be somewhat less than presented.

Methodology

A long-range traffic-forecasting model was used to assess the traffic impacts of the proposed Villages of Patterson Development Plan. The StanCOG countywide gravity-based computer traffic model was used; the model estimates daily trips and distributes the trips between their origins (generally residential uses) and destinations (generally employment locations) on the roadway network. It is assumed that this model provides a reasonable travel pattern, including travel demand and route choices among the different areas within the county. An a.m. and p.m. peak hour model was developed from the StanCOG model and was calibrated based on existing traffic counts collected at the 26 study intersections and 11 roadway segments. The StanCOG modeling area is the entire regional transportation plan area; the morning and afternoon peak hour model and calibration of that model were performed only for the project study area.

Four scenarios were studied:

- Existing Plus Approved Projects
- Existing Plus Approved Projects Plus Villages of Patterson
- Future 2030 Baseline
- Future 2030 Baseline Plus Villages of Patterson

<u>Existing Plus Approved Projects Scenario</u>

This scenario adds traffic from the approved projects in the City of Patterson to existing traffic volumes. Major approved projects include the West Patterson Business Park, Patterson Gardens mixed residential/commercial project, and Walker Ranch residential development project. Compared to existing conditions, under the Existing-Plus-Approved-Projects scenario 10 intersections would operate at unacceptable LOS E or F in the a.m. or p.m. peak hour or both: at Sperry Avenue/I-5 southbound off-ramps; Sperry Avenue/I-5 northbound on-ramps; Sperry Avenue/Baldwin Road; Sperry Avenue/Las Palmas Avenue; Sperry Avenue/Ward Avenue; Walnut Avenue/M Street/SR-33/ Las Palmas Avenue/Sycamore Avenue; Carpenter Road/West Main Avenue; and Crows Landing Road/West Main Avenue.[2] The intersection of Sperry Avenue/American Eagle Drive would operate at LOS D, exceeding County standards; however,

[2] Turning movements for each intersection in the Existing Plus Approved Projects scenario are shown graphically in Figure 5, p. 15 in the Traffic Study, in Appendix B of this EIR.

this intersection is located in the City of Patterson and would meet City standards. All freeway and roadway segments studied would continue to operate at LOS C or better except the southbound segment of SR 33 south of Sperry Avenue in the afternoon peak hour, which would operate at LOS D. This segment is located within the City of Patterson and would meet City standards. The I-5 on- and off-ramps at Sperry Avenue would need to be signalized and modified.

Measures are available to improve service levels at the affected intersections; many of the measures are expected to be implemented as part of build-out of the West Patterson projects. However, the timing of build-out of the West Patterson area has not been established, funding sources are not assured for these improvements, and it is possible that the Villages of Patterson would be developed in advance of portions of the West Patterson projects. Therefore, the improvements are not assumed to have been carried out in the analysis of the Existing-plus-Approved-Projects-plus-Villages of Patterson scenario.

Villages of Patterson Trip Generation and Distribution

Trip generation for the project establishes the number of vehicle trips produced by the various types of land uses proposed in the Villages of Patterson Development Plan. Trip generation rates for the project were based on the StanCOG travel demand model, and are shown in **Table III.D-6: Villages of Patterson Vehicle Trip Generation**. As shown in that table, it is estimated that the project would generate approximately 2,650 vehicle trips during the a.m. peak hour and approximately 3,340 vehicle trips during the p.m. peak hour. After trip generation, the project-generated trips were distributed onto the roadway network in the calibrated model. In this model trips are generally produced at the home and attracted to a destination (usually a place of employment). The model balances production and attraction trips and distributes the trips to individual streets in the model roadway network.

Table III.D-6: Villages of Patterson Vehicle Trip Generation

Land Use	Size	Units	A.M. Peak Hour			P.M. Peak Hour		
			IN	OUT	Total	IN	OUT	Total
Low/Medium DU	2,561	DU	77	1,306	1,383	922	1,050	1,972
High Density DU	232	DU	7	93	100	65	58	123
Downtown Core (Village Circle)	307 100,000	DU SF	9	123	132	86	77	163
Light Industrial	623,800	SF	418	62	480	143	374	518
Public/Quasi-Public	433,400	SF	390	100	490	251	295	546
School	58.6	Ac	60	7	67	2	15	16
Total			**961**	**1,691**	**2,652**	**1,469**	**1,868**	**3,338**

Notes: DU = dwelling unit; SF = square feet; Ac = acre.
Source: TJKM, 2006.

PROJECT IMPACTS AND MITIGATION

Existing Plus Project Traffic Conditions

Impact D.1. Development of the proposed Villages of Patterson project would affect traffic levels of service at several study intersections. (Less than Significant with Mitigation)

Addition of project-generated traffic to local roadways and intersections would cause several intersections to operate at unacceptable LOS E or F in the a.m. or p.m. peak hours or both, compared to existing conditions with approved projects.[3] **Table III.D-7: Intersection Levels of Service, Existing-Plus-Approved-Plus-Project Scenario** compares existing intersection levels of service with LOS in the Existing-plus-Approved-plus-Project scenario. Under this scenario, 12 of the 26 study intersections would degrade from acceptable to unacceptable LOS E or F at the following locations: Sperry Avenue/I-5 southbound off-ramps; Sperry Avenue/I-5 northbound on-ramps; Sperry Avenue/Baldwin Road; Sperry Avenue/America Eagle Drive; Sperry Avenue/Las Palmas Avenue; Sperry Avenue/Ward Avenue; Sperry Avenue/SR 33; Olive Avenue/SR 33; Walnut Avenue/M Street/ SR 33; Las Palmas Avenue / Sycamore Avenue; Carpenter Road/West Main Avenue; and Crows Landing Road/West Main Avenue. In addition, the intersection of Zacharias Road and SR 33 would operate at LOS D in the p.m. peak hour, exceeding County standards. This intersection would need mitigation in spite of an overall acceptable LOS according to City of Patterson standards, because the analysis shows that nearly 600 northbound vehicles would attempt to make a left turn from SR 33 to Zacharias Road in the morning peak hour. There would be approximately 850 vehicles traveling in the northbound direction in the morning peak hour and southbound in the afternoon peak hour at the intersection of Zacharias Road and SR 33, an indication that additional lanes would be needed on SR 33 between Zacharias Road and Ward Avenue. The intersection of SR 33 at Eucalyptus Avenue would operate at acceptable LOS but would meet signal warrants, and therefore would have a significant traffic impact. The intersection of Sperry Avenue and Rogers Road is shown as operating at acceptable LOS in this scenario. The extension of Rogers Road south of Sperry and related intersection improvements that are needed here for acceptable operation are mitigation measures included in the approved West Patterson Business Park project; if these improvements did not occur before the Villages of Patterson development plan was constructed and occupied, traffic from the project would result in unacceptable operations and mitigation would be needed. Therefore, a mitigation measure has been included below for this intersection.

[3] Turning movements for each intersection in the Existing Plus Approved Projects Plus Project scenario are shown graphically in Figure 8, p. 23 in the Traffic Study, in Appendix B of this EIR.

Table III.D-7: Intersection Levels of Service, Existing-Plus-Approved-Plus-Project Scenario (Revised)

Intersection	*Existing Traffic Control*	*Existing + Project Intersection Control (Mitigated)*	*Existing Condition*				*Existing plus Approved plus Project Condition*							
			A.M.		*P.M.*		*A.M.*		*A.M. Mitigated*		*P.M.*		*P.M. Mitigated*	
			Delay	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*
1. Sperry Ave/I-5 SB Off-Ramps	Unsignalized	**Signalized**	8.6(11.6)	A (B)	19.0(25.2)	A (D)	102.1(>120)	**F(F)**	12.1	B	>120(>120)	**F(F)**	16.0	B
2. Sperry Ave/I-5 NB On-Ramps	Unsignalized	**Signalized**	0.9(10.2)	A (B)	2.3(13.0)	A (B)	>120(>120)	**F(F)**	7.7	A	12.9(105.0)	B(**F**)	1.1	A
3. Sperry Ave/Rogers Rd	Signalized	Signalized	7.0	A	7.9	A	—[3]	—	19.5	B	—[3]	—	19.1	B
4. Sperry Ave/Baldwin Rd	Signalized	Signalized	7.9	A	6.3	A	61.1	**E**	13.8	B	76.6	**E**	25.1	B
5. Sperry Ave / Walker Parkway	Signalized	Signalized	2.6	A	2.2	A	7.3	A	—	—	7.3	A	—	—
6. Sperry Ave/American Eagle Dr	Signalized	Signalized	3.7	A	5.5	A	83.7	**F**	34.4	C	44.5	D	26.0	C
7. Sperry Ave/Las Palmas Ave	Unsignalized	**Signalized**	2.6(14.0)	A (B)	3.0 (17.0)	A (C)	>120(>120)	**F(F)**	4.2	A	>120(>120)	**F(F)**	10.6	B
8. Sperry Ave/Ward Ave	Signalized	Signalized	8.1	A	8.9	A	100.8	**F**	13.9	B	>120	**F**	18.0	B
9. Sperry Ave/S Del Puerto Ave	Signalized	Signalized	4.5	A	6.0	A	4.0	A	—	—	4.5	A	—	—
10. Sperry Ave/SR-33	Unsignalized	**Signalized**	6.1(18.5)	A (C)	14.6(41.6)	B (E)	>120(>120)	**F(F)**	12.1	B	>120(>120)	**F(F)**	11.8	B
11. SR-33/Las Palmas	Signalized	Signalized	11.7	B	11.9	B	11.1	B	—	—	12.2	B	—	—
12. Ward Ave/American Eagle Dr	Signalized	Signalized	8.5	A	5.9	A	9.6	A	—	—	21.6	C	—	—
13. Ward Ave/SR-33	Unsignalized	Unsignalized	3.5(12.3)	A (B)	1.7 (14.3)	A (B)	4.7(24.5)	A(C)	—	—	5.0(33.1)	A(D)	—	—
14. Zacharias Rd/SR-33 [1]	Unsignalized	**Signalized**	1.2(10.2)	A (B)	0.7 (11.0)	A (B)	10.0(45.4)	A(**E**)	19.7	B	28.9(72.1)	C(**F**)	9.1	A
15. Baldwin Rd/SR-33	Unsignalized	Unsignalized	0.6(10.7)	A (B)	0.9 (14.7)	A (B)	1.6(15.1)	A(C)	—	—	8.8(30.5)	A(D)	—	—
16. Rogers Rd / SR-33	Unsignalized	Unsignalized	0.6(11.9)	A (B)	1.0 (13.5)	A (B)	0.9(18.7)	A(C)	—	—	21.1(103.6)	C(**F**)	—	—
17. SR-33/Eucalyptus Ave [1]	Unsignalized	**Signalized**	0.6(11.8)	A (B)	0.3(12.0)	A (B)	15.2(57.4)	C(**F**)	6.0	A	24.0(>120)	C(**F**)	4.9	A

Table III.D-7 continued

Intersection	*Existing Traffic Control*	*Existing + Project Intersection Control (Mitigated)*	*Existing Conditions*				*Existing plus Approved plus Project Conditions*							
			A.M.		*P.M.*		*A.M.*		*A.M. Mitigated*		*P.M.*		*P.M. Mitigated*	
			Delay	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*
18. Olive Ave/SR 33	Unsignalized	**Signalized**	2.6(11.4)	A (B)	2.6 (17.3)	A (B)	114.2(>120)	**F(F)**	7.7	A	>120(>120)	**F(F)**	8.0	A
19. Walnut Ave/M Street/SR-33	Unsignalized	**Signalized**	9.9(34.5)	A (D)	5.2 (20.6)	A (C)	>120(>120)	**F(F)**	6.9	A	>120(>120)	**F(F)**	7.5	A
20. Olive Ave/Sycamore	Unsignalized	Unsignalized	7.1	A	7.3	A	8.9	A	—	—	8.5	A	—	—
21. Walnut Ave/Sycamore Ave	Unsignalized	Unsignalized	7.0(9.3)	A (A)	8.1 (9.8)	A (A)	5.3(15.2)	A(C)	—	—	4.9(15.1)	A(C)	—	—
22. Las Palmas Ave/Sycamore Ave	Unsignalized	**Signalized**	13.4	B	12.4	B	>120	**F**	12.5	B	>120	**F**	11.9	B
23. Poplar Ave/Las Palmas Ave	Unsignalized	Unsignalized	0.1(13.6)	A (B)	0.6 (11.4)	A (B)	1.0(30.4)	A(D)	—	—	6.1(106.1)	A(**F**)	—	—
24. Carpenter Rd/W Main Ave	Unsignalized	**Signalized**	12.1	B	14.3	B	87.6(>120)	**F(F)**	6.8	A	>120(>120)	**F(F)**	6.1	A
25. Crows Landing Rd/W Main	Unsignalized	**Signalized**	13.2	B	16.3	C	109.7	**F**	9.3	A	>120(>120)	**F(F)**	7.1	A
26. Sycamore Ave./Orange Ave.	Unsignalized	Unsignalized	7.2	A	7.4	A	7.5	A	—	—	7.5	A	—	—

Notes:
LOS = level of service; Delay = average stopped delay at signalized intersections; average delay for all movements at Stop-controlled intersections. **E** and **F** bolded indicate unacceptable LOS. **Signalized** = mitigation measure includes signalizing an unsignalized intersection.
1. Mitigation needed due to minor approach at LOS F and intersection meets Caltrans signal warrants.
2. Existing T intersection not analyzed; Existing Plus Approved Projects scenario requires extension to the south of Sperry Avenue.

Source: TJKM, 2007.

Mitigation Measure D.1

The City shall construct the intersection improvements listed below concurrently or in advance of development in the Villages of Patterson Development Plan area that would result in sufficient vehicle trips to reduce the level of service below LOS D at study intersections. The City shall establish an appropriate funding mechanism, and Villages of Patterson developers shall either construct the improvements or contribute a fair share of the costs of these traffic mitigation measures.

Mitigation Measure D.1.a: Intersection 1. Sperry Avenue/I-5 SB Ramps. Signalize intersection, add a southbound left turn lane and two westbound left turn lanes.

Mitigation Measure D.1.b: Intersection 2. Sperry Avenue/I-5 NB Ramps. Signalize intersection, add an eastbound left turn lane, a westbound right turn lane, and a northbound right turn lane.

Mitigation Measure D.1.c: Intersection 3. Sperry Avenue/Rogers Road. Add northbound left turn and right turn lanes; two westbound left turn lanes; a northbound left turn lane and a shared through/right turn lane; and a southbound through lane.

As explained above on p. III.D.14, mitigation for the intersection of Sperry Avenue and Rogers Road is included here because it is not known whether the improvements planned as part of the West Patterson Business Park would occur in time to accommodate traffic generated by the Villages of Patterson project.

Mitigation Measure D.1.d: Intersection 4. Sperry Avenue/Baldwin Road. Add a westbound through lane.

Mitigation Measure D.1.e: Intersection 6. Sperry Avenue/American Eagle Drive. Add a southbound right turn lane.

Mitigation Measure D.1.f: Intersection 7. Sperry Avenue/Las Palmas Avenue. Signalize intersection.

Mitigation Measure D.1.g: Intersection 8. Sperry Avenue/Ward Avenue. Add two eastbound left turn lanes; restripe the intersection to convert the existing shared through/left turn lane to a shared through/right turn lane; and add a westbound left turn lane and a westbound through lane.

Mitigation Measure D.1.h: Intersection 10. Sperry Avenue/SR 33. Signalize intersection; add eastbound left turn lane; add westbound left turn lane; add two northbound left

turn lanes; add a southbound left turn lane and convert the shared through/left lane to a shared through/right lane.

Mitigation Measure D.1.i: Intersection 14. Zacharias Road/SR 33. Add a northbound left turn lane and an eastbound left turn lane at approximately 92 percent buildout, or when conditions warrant.

Mitigation Measure D.1.j: Intersection 17. SR 33/Eucalyptus Avenue. Signalize intersection and add southbound left turn and through lanes; add a northbound through lane.

Mitigation Measure D.1.k: Intersection 18. Olive Avenue/SR 33. Signalize intersection, add left turn lanes on all four approaches, and upgrade existing railroad crossing arms with automatic signal protection including a four-quadrant flashing light system, based on guidelines contained in the Manual of Uniform Traffic Control, Chapter 8.

Mitigation Measure D.1.l: Intersection 19. Walnut Avenue/M Street/ SR 33. Signalize intersection, add an eastbound and westbound left turn lane, restripe the eastbound and westbound shared through/left turn lane as a shared through/right turn lane, and upgrade existing railroad crossing arms with automatic signal protection including a four-quadrant flashing light system, based on guidelines contained in the Manual of Uniform Traffic Control, Chapter 8.

Mitigation Measure D.1.m: Intersection 22. E. Las Palmas Avenue/ Sycamore Avenue. Signalize intersection.

Mitigation Measure D.1.n: Intersection 24. West Main Avenue/ Carpenter Road. Signalize intersection and add left turn lanes on all four approaches.

Mitigation Measure D.1.o: Intersection 25. Crows Landing Road/West Main Avenue. Signalize intersection; add left turn lanes on all four approaches; and restripe the eastbound, northbound, and southbound approaches to convert the through and left turn lane as a shared through/right turn lane.

With implementation of these mitigation measures, significant traffic impacts at study intersections would be reduced to less-than-significant levels.

Impact D.2. Development of the Villages of Patterson project would contribute substantial amounts of traffic to intersections along State Route 33 that are located very close together and intersect with SR 33 at oblique angles, making turning difficult. (Less than Significant)

The three intersections of Zacharias Road, Eucalyptus Avenue, and Ward Avenue with SR 33 are located approximately 800 feet apart and do not form right angles with SR 33. The intersection analysis presented in Impact D.1 did not identify significant deterioration of levels of service at these intersections. However, to provide for better signal progression and good access

management, improvement measures are recommended in the Traffic Study. These measures are as follows:

- Combine the intersections of Zacharias Road/SR 33 and Eucalyptus Avenue/SR 33 into a single intersection by extending Zacharias Road east of SR 33 to meet Eucalyptus Avenue and eliminating the existing intersection of Eucalyptus Avenue with SR 33.
- Realign the intersection of Ward Avenue at SR 33 to "T" into SR 33 at closer to a right angle.

While significant impacts would not technically result without these measures in that LOS would not deteriorate to unacceptable levels, the measures would improve traffic flow and safety along this portion of SR 33, and reduce the length of queues of vehicles attempting to make northbound left turns.

Mitigation Measures. No mitigation necessary.

Impact D.3. Proposed development in the Villages of Patterson Development Plan would affect traffic on roadway segments in the vicinity of the Plan Area. (Less than Significant)

The same roadway and freeway segments were analyzed for the Existing-Plus-Approved-Projects-Plus-Project scenario as for the baseline scenario. With project-generated traffic, roadway and freeway segments would continue to operate at acceptable LOS C or better at all study locations, except Baldwin Road in the eastbound direction north of Sperry Avenue in the morning peak hour, SR 33 south of Sperry Avenue in the northbound direction in the morning, and in the southbound direction in the afternoon, all of which would operate at LOS D, as shown in **Table III.D-8: Roadway Segment Levels of Service, Existing-Plus-Approved-Plus-Project Scenario**. The three segments that would operate at LOS D would meet City of Patterson standards and would not result in significant impacts. As with the analysis of impacts at study intersections, existing lane configurations were assumed on all roadway segments.

Mitigation Measure. No mitigation necessary.

Impact D.4. The Villages of Patterson project would contribute to the demand for bicycle and pedestrian facilities in the City of Patterson. (Less than Significant)

The City's General Plan recommends creating and maintaining a system of pedestrian and bicycle paths, including bicycle routes that connect residential areas to recreation, shopping and employment areas. New development is required to pay its fair share of the costs of developing pedestrian and bicycle paths and must include bicycle parking facilities. The Villages of Patterson Development Plan includes sidewalks on all internal streets, and pedestrian access at

Table III.D-8: Roadway Segment Levels of Service, Existing-Plus-Approved-Plus-Project Scenario (Revised)

No.	Freeway / Roadway Segment	Direction	Dir. Lanes	Capacity	A.M. Peak Hour			P.M. Peak Hour		
					Volume (veh)	Speed (mph)	LOS	Volume (veh)	Speed (mph)	LOS
1.	I-5, north of Sperry Ave.	NB	2	4,600	2,074	-	B	2,581	-	C
		SB	2	4,600	2,631	-	C	2,245	-	B
2.	I-5, south of Sperry Ave.	NB	2	4,600	2,566	-	C	1,926	-	B
		SB	2	4,600	1,763	-	B	2,366	-	B
3.	I-5, south of Fink Rd.	NB	2	4,600	1,863	-	B	1,687	-	B
		SB	2	4,600	1,686	-	B	1,800	-	B
4.	Sperry Ave. east of Rogers Rd.	EB	2	2,280	1,096	25.5	C	794	26	B
		WB	2	2,280	453	26.5	C	1,046	25.5	B
5.	Baldwin Rd, north of Sperry Ave.	EB	1	890	477	17.5	D	212	19	B
		WB	1	890	245	19	C	350	18	B
6.	SR-33, north of Zacharias Rd.	NB	1	1,140	77	31	C	365	29.5	C
		SB	1	1,140	465	29	C	244	30.5	C
7.	SR-33, south of Sperry Ave.	NB	1	1,140	846	25.5	C	520	29	C
		SB	1	1,140	213	30.5	C	760	26	D
8.	Ward Ave., north of Las Palmas Ave.	NB	1	1,140	285	26	C	563	25	C
		SB	1	1,140	584	25	C	547	25	C
9.	Ward Ave., south of Marshall Rd.	NB	1	1,140	128	26.5	C	352	26	C
		SB	1	1,140	286	26	C	76	27	C
10.	E. Las Palmas Ave., east of Sycamore Ave.	EB	1	1,140	77	27	C	297	26	C
		WB	1	1,140	416	26	C	211	26.5	C
11.	Main St., east of Carpenter Rd.	EB	1	1,140	175	26.5	C	752	24	C
		WB	1	1,140	695	24	C	490	25.5	C

Notes: Roadway segments along Sperry at LOS C assume a 4-lane roadway.

Source: TJKM, 2006.

the ends of cul-de-sacs to provide more direct connections to major streets and to commercial areas. The Development Plan also includes bicycle paths throughout the Plan Area. Appropriate commercial uses will include small retail shops, offices, café and restaurants common in traditional towns and pedestrian-oriented environments. Providing commercial land uses in the Village Circle area, within walking distance of many of the proposed residential areas in the Plan Area, would promote pedestrian and bicycle access; although not accounted for in the traffic analysis, these features are expected to reduce automobile travel.

Mitigation Measure. No mitigation necessary.

FUTURE CUMULATIVE TRAFFIC IMPACTS 2030

Future 2030 Baseline

The 2030 land use assumptions from the StanCOG model were used in the 2030 Baseline traffic conditions. Buildout of the City of Patterson General Plan, except the area in the Villages of Patterson Development Plan, is included in these assumptions; this scenario accounts for cumulative growth in the City and the region. The 2030 Baseline includes intersection improvements that City staff expects to have implemented within the next 20 to 25 years. These improvements include the following:[4]

Intersection #3: Rogers Road/Sperry Avenue – assumes Rogers Road is extended south beyond Sperry Avenue and expands the intersection. Southbound add one through lane and a second right-turn lane; westbound add a second through lane and two left-turn lanes; northbound add a left-turn lane, a through/right lane and a right-turn lane; eastbound add additional left-turn and through lanes and a new right-turn lane.

Intersection #4: Baldwin Road/Sperry Avenue – add a second westbound through lane and an exclusive eastbound right-turn lane.

Intersection #6: American Eagle Drive/Sperry Avenue – add exclusive right and left-turn lanes southbound; add an exclusive right-turn lane northbound; and add a second left-turn lane and an exclusive right-turn lane eastbound.

Intersection #23: Poplar/E. Las Palmas/West Main – Signalize the intersection; southbound, convert right-turn lane to a right/left turn lane at this "T" intersection; westbound add an exclusive right-turn lane, convert the existing right/through lane to a through lane and add a second through lane; eastbound add a second through lane.

Intersection #24: Carpenter Road/West Main – Add a traffic signal; southbound add exclusive left- and right-turn lanes; westbound add exclusive left-turn and through lanes and retain a through/right lane; northbound add a left-turn lane; and eastbound add a through lane and two left-turn lanes.

Intersection #25: Crows Landing Road/West Main Street – Add a traffic signal; southbound add exclusive left-turn lane; westbound add an exclusive left-turn lane and a through lane; northbound add an exclusive left-turn lane and convert the through/left lane to a through/right lane; and eastbound add two exclusive left-turn lanes, convert the through/left lane to a through lane, and add a through/right lane.

[4] Turning movements for the intersections in the Future 2030 Baseline scenario are shown graphically in Figure 10, p. 38 in the Traffic Study, in Appendix B of this EIR.

With these planned improvements, and including future traffic growth in the City of Patterson and the region, compared with existing conditions where no intersections operate at unacceptable service levels, nine intersections would operate at unacceptable LOS E or F in 2030 without project-generated traffic. These intersections are located at Sperry Avenue/I-5 southbound off-ramps and northbound on-ramps, Sperry Avenue/Las Palmas Avenue, Sperry Avenue/Ward Avenue, Sperry Avenue/SR 33, Ward Avenue/SR 33, Rogers Road/SR 33, Walnut Avenue/M Street/SR 33, and Las Palmas Avenue / Sycamore Avenue. The future baseline intersection levels of service are shown in Table III.D-9, pp. III.D.24 and 25. These conditions would occur without traffic from the proposed Villages of Patterson project.

Eight intersections would need to be signalized in the future to accommodate projected traffic growth without the Villages of Patterson project. In addition, although the intersection of Zacharias Road / SR 33 would operate at an overall LOS of A or B in the a.m. and p.m. peak hours, addition of an exclusive northbound left turn lane would be warranted to accommodate motorists heading west toward the West Patterson Business Park. The projected traffic volume on SR 33 between Zacharias Road and Ward Avenue would be approximately 900 vehicles; this volume will require a four-lane roadway. The other intersections would operate at acceptable LOS A, B, or C with improvements such as traffic signals, left-turn or right-turn lanes added.

Roadway and freeway segments were analyzed in the 2030 future baseline scenario, assuming the same planned improvements and including future traffic growth in the City and the region. In 2030, without project-generated traffic, all study locations on roadways and freeways would continue to operate at LOS C or better, acceptable under both City and Stanislaus County standards, except the westbound roadway segment on Baldwin Road north of Sperry Avenue in the afternoon peak hour and the southbound segment on SR 33 south of Sperry Avenue in the afternoon peak hour. These two segments would operate at LOS D, which would not meet County standards but would meet City standards.

Future 2030 Baseline Plus Villages of Patterson Project

Impact D.5. The Villages of Patterson project would contribute considerably to future cumulative significant impacts at study intersections. (Significant and Unavoidable at five locations; Less than Significant with Mitigation at remaining locations)

Traffic from the Villages of Patterson Development Plan project, added to intersections already operating at unacceptable LOS, would cause further deterioration in service levels. If mitigation measures were assumed at all nine of the significantly impacted intersections identified in 2030 Baseline conditions, Villages of Patterson project traffic would cause two additional intersections to deteriorate to LOS E or F, at Eucalyptus Avenue/SR 33 and Olive Avenue/SR 33, and would cause the intersections at the I-5 southbound off ramp and northbound on-ramp to again

deteriorate to LOS E or F, requiring additional mitigation (see **Table III.D-9: Intersection Levels of Service, 2030 Baseline and 2030 Baseline Plus Project**). If mitigation measures were not installed in the nine intersections operating at LOS E or F under future 2030 baseline conditions, the proposed project would contribute to or cause unacceptable LOS at 11 intersections in either the a.m. peak hour, the p.m. peak hour, or both, in the study area, and would establish the need for improvements at an additional three intersections. Two new signals would need to be installed, at Eucalyptus Avenue/SR 33, and at Olive Avenue/SR 33, in addition to the eight that would be needed without project-generated traffic.[5] As in the future 2030 baseline condition, although levels of service are not shown to deteriorate to unacceptable levels, the analysis of intersections along SR 33 show that there would be nearly 900 vehicles on SR 33 on the segment between Zacharias Road and Ward Avenue during morning and afternoon peak hours, resulting in the need for a four-lane roadway. Two westbound lanes would be needed on Zacharias Road between SR 33 and Baldwin Road to accommodate high volumes of westbound traffic from two left-turn lanes from northbound SR 33 in the morning peak hour, and two eastbound lanes would be needed to accommodate afternoon traffic.

The intersection impacts identified in Table III.D-9 could all be mitigated to less-than-significant levels with the addition of signals, as indicated in the table, and additional left-turn, right-turn, and through lanes.

Mitigation Measure D.5

The City shall construct the intersection improvements listed below concurrently or in advance of development in the Villages of Patterson Development Plan area that would result in sufficient vehicle trips to reduce the level of service below LOS D at study intersections. The City shall establish an appropriate funding mechanism, and Villages of Patterson developers shall contribute a fair share of the costs of these traffic mitigation measures.

Mitigation Measure D.5.a: Intersection 1. Sperry Ave/I-5 SB Off Ramps. Signalize intersection; add an eastbound through lane; add a southbound left turn lane; and add two westbound left turn lanes.

Mitigation Measure D.5.b: Intersection 2. Sperry Ave/I-5 NB On-Ramps. Signalize intersection; add two northbound right turn lanes; add eastbound left turn and through lanes; and add westbound right turn and through lanes.

Mitigation Measure D.5.c: Intersection 7. Sperry Ave/Las Palmas Ave. Signalize intersection; add an eastbound right turn lane.

[5] Turning movements for each intersection in the Future 2030 Baseline Plus Project scenario are shown graphically in Figure 12, p. 44 in the Traffic Study, in Appendix B of this EIR.

Table III.D-9: Intersection Levels of Service, 2030 Baseline and 2030 Baseline Plus Project (Revised)

Study Intersections	Existing Controls	Future Baseline (mitigated)	Future 2030 Baseline Conditions								Future Base Plus Project (Mitigated)	Future 2030 Base Plus Project							
			A.M.		A.M. Mitigated		P.M.		P.M. Mitigated			AM		A.M. Mitigated		P.M.		P.M. Mitigated	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Sperry Ave/I-5 SB Off-Ramps	Unsignalized	**Signalized**	103.1(>120)	**F(F)**	14.8	B	>120(>120)	**F(F)**	25.5	C	Signalized	17.9	B	12.2	B	74.5	**E**	20.7	C
2. Sperry Ave/I-5 NB On-Ramps	Unsignalized	**Signalized**	>120(>120)	**F(F)**	18.7	B	83.7(>120)	**F(F)**	5.6	A	Signalized	>120(>120)	**F**	19.9	B	>120(>120)	**F**	11.2	B
3. Sperry Ave/Rogers Road	Signalized	Signalized	30.4	C	—	—	24.4	C	—	—	Signalized	26.5	C	—	—	29.0	C	—	—
4. Sperry Ave/Baldwin Rd	Signalized	Signalized	15.5	B	—	—	10.8	B	—	—	Signalized	17.7	B	—	—	14.8	B	—	—
5. Sperry Avenue/Walker Parkway	Signalized	Signalized	7.8	A	—	—	7.2	A	—	—	Signalized	6.4	A	—	—	12.0	B	—	—
6. Sperry Ave/American Eagle Dr	Signalized	Signalized	22.8	C	—	—	17.6	B	—	—	Signalized	31.0	C	—	—	22.0	C	—	—
7. Sperry Ave/Las Palmas Ave	Unsignalized	**Signalized**	>120(>120)	**F(F)**	4.0	A	>120(>120)	**F(F)**	8.3	A	Signalized	4.1	A	—	—	15.1	B	—	—
8. Sperry Ave/Ward Ave	Signalized	Signalized	>120	**F**	26.7	C	>120	**F**	16.1	B	Signalized	26.3	C	—	—	20.0	B	—	—
9. Sperry Ave/S Del Puerto Ave	Signalized	Signalized	19.1	B	19.0	B	14.1	B	13.8	B	Signalized	20.5	C	11.3	B	13.0	B	7.2	A
10. Sperry Ave/SR-33	Unsignalized	**Signalized**	>120(>120)	**F(F)**	14.3	B	>120(>120)	**F(F)**	12.2	B	Signalized	14.0	B	14.3	B	13.0	B	12.0	B
11. SR-33/Las Palmas Ave	Signalized	Signalized	11.7	B	—	—	17.0	B	—	—	Signalized	13.3	B	—	—	14.6	B	—	—
12. Ward Ave/ American Eagle Dr	Signalized	Signalized	7.4	A	—	—	7.4	A	—	—	Signalized	11.5	B	7.2	A	35.6	D	11.3	B
13. Ward Ave/SR-33	Unsignalized	Signalized	42.7(>120)	**E(F)**	6.9	A	11.4(76.7)	B(**F**)	5.2	A	Signalized	6.9	A	8.4	A	6.3	A	6.6	A
14. Zacharias Rd/SR-33 [1]	Unsignalized	**Signalized**	6.8(41.7)	A(**E**)	2.7	A	13.0(56.7)	B(**F**)	5.2	A	Signalized	19.9	B	3.2	A	13.1	B	9.7	A
15. Baldwin Rd/SR-33	Unsignalized	Unsignalized	2.5(23.8)	A(C)	—	—	7.7(49.8)	A(**E**)	—	—	Unsignalized	2.4(38.6)	A(**E**)	—	—	5.8(42.7)	A(**E**)	—	—
16. Rogers Rd/SR-33	Unsignalized	**Signalized**	12.6(111.5)	A(**F**)	6.2	A	>120(>120)	**F(F)**	9.3	A	Signalized	6.6	A	5.6	A	24.4	C	10.8	B
17. SR-33/Eucalyptus Ave	Unsignalized	Unsignalized	0.8(33.9)	A(D)	0.6(29.3)	A(D)	1.1(25.4)	A(D)	0.6(16.9)	A(C)	**Signalized**	5.2(24.4)	A(C)	5.5	A	35.3(>120)	**E(F)**	4.8	A
18. Olive Avenue/SR-33	Unsignalized	Unsignalized	3.0(24.1)	A(C)	—	—	3.5(25.8)	A(D)	—	—	**Signalized**	>120(>120)	**F(F)**	8.7	A	>120(>120)	**F(F)**	10.0	B
19. Walnut Ave/M Street/SR-33	Unsignalized	**Signalized**	57.7(>120)	**F(F)**	7.0	A	102.9(>120)	**F(F)**	6.1	A	Signalized	8.8	A	9.7	A	8.6	A	10.4	B
20. Olive Ave/Sycamore Ave	Unsignalized	Unsignalized	7.8	A	—	—	8.4	A	—	—	Unsignalized	14.4	B	—	—	11.2	B	—	—
21. Walnut Ave/Sycamore Ave	Unsignalized	Unsignalized	4.4(10.4)	A(B)	—	—	3.2(11.1)	A(B)	—	—	Unsignalized	4.0(22.8)	A(C)	—	—	3.9(22.2)	A(C)	—	—
22. Las Palmas Ave/Sycamore Ave	Unsignalized	**Signalized**	>120(>120)	**F(F)**	8.0	A	110.3(>120)	**F(F)**	6.9	A	Signalized	18.4	B	—	—	17.3	B	—	—
23. Poplar Ave/Las Palmas Ave	Unsignalized	Signalized	4.8	A	—	—	4.8	A	—	—	Signalized	4.7	A	—	—	4.8	A	—	—

Table III.D-9 continued

24. Carpenter Rd/W Main Ave	Unsignalized	Signalized	10.7	B	—	—	9.8	A	—	—	Signalized	6.6	A	—	—	5.9	A	—	—
25. Crows Landing Rd/W Main Ave	Unsignalized	Signalized	10.9	B	—	—	13.7	B	—	—	Signalized	6.7	A	—	—	7.2	A	—	—
26. West Main/Carpenter	Unsignalized	Unsignalized	8.1	A	—	—	7.9	A	—	—	Unsignalized	9.3	A	—	—	9.0	A	—	—

Notes:
Delay = average delay per vehicle in seconds
LOS = level of service
E or F in **bold** is unacceptable LOS
Signalized in **bold** is mitigation measure
1. An exclusive northbound left turn lane is warranted at Zacharias Road and SR 33.

Source: TJKM, June 2007.

Mitigation Measure D.5.d: Intersection 8. Sperry Ave/Ward Ave. Add a northbound left turn lane; add two eastbound left turn lanes, and restripe the shared through and left turn lane as a shared through and right turn lane; add a southbound right turn lane; and add westbound left turn and through lanes.

Mitigation Measure D.5.e: Intersection 9. Sperry Ave/S. Del Puerto Ave. Add eastbound and westbound left turn and through lanes.

Mitigation Measure D.5.f: Intersection 10. Sperry Ave/SR 33. Signalize intersection; add two northbound left turn lanes; add eastbound left and right turn lanes; add a westbound left turn lane; and add a southbound left turn lane and restripe the shared through and left turn lane as a shared through and right turn lane.

Mitigation Measure D.5.g: Intersection 12. Ward Ave/American Eagle Dr. Add eastbound, westbound, northbound and southbound left turn lanes.

Mitigation Measure D.5.h: Intersection 13. SR 33/Ward Ave. Signalize intersection; add a northbound left turn lane.

Mitigation Measure D.5.i: Intersection 14. Zacharias Rd/SR 33. Signalize intersection; add two northbound left turn lanes; and add an eastbound left turn lane.

Mitigation Measure D.5.j: Intersection 16. Rogers Rd/SR 33. Signalize intersection; add a northbound left turn lane; add two eastbound left turn lanes; and add a southbound right turn lane.

Mitigation Measure D.5.k: Intersection 17. SR 33/Eucalyptus Ave. Signalize intersection. Northbound: add a northbound right turn lane; add a southbound left turn lane; and add a westbound left turn lane.

Mitigation Measure D.5.l: Intersection 18. Olive Ave/SR 33. Signalize intersection; add eastbound, westbound, northbound and southbound left turn lanes.

Mitigation Measure D.5.m: Intersection 19. Walnut Ave/M Street/SR 33. Signalize intersection; add eastbound and westbound left turn lanes and restripe shared through and left turn lanes as shared through and right turn lanes; add northbound and southbound left and right turn lanes.

Mitigation Measure D.5.n: Intersection 22. E. Las Palmas Ave/Sycamore Ave. Signalize intersection.

Mitigation Measure D.5.o: Zacharias Road between SR 33 and Baldwin Road. Establish an annual traffic monitoring program for this segment of Zacharias Road. When conditions warrant, at morning and/or afternoon peak hour volumes of about 800 vehicles per hour, widen this segment of Zacharias Road from two to four lanes.

Insofar as funding is available to implement these mitigation measures, traffic impacts at intersections would be reduced to less-than-significant levels. Future funding sources are uncertain for the following five intersections: Sperry Avenue/Ward Avenue, Sperry Avenue/Del Puerto Avenue, Sperry Avenue/SR 33, Ward Avenue/American Eagle Avenue, and Rogers Road/SR 33. Therefore impacts at these intersections are considered significant and unavoidable in spite of the availability of mitigation measures.

Impact D.6. The Villages of Patterson project would contribute to traffic volumes on roadway and freeway segments in the project study area. (Less than Significant)

All roadway and freeway segments would continue to operate at acceptable LOS in the Future 2030 Baseline-Plus-Project scenario using City of Patterson standards. Roadway segment levels of service in 2030 with traffic from the Villages of Patterson project are shown in **Table III.D-10: Roadway Segment Levels of Service – Future 2030 Baseline Plus Project**. As shown in this table, Baldwin Road north of Sperry Avenue would operate at LOS D eastbound in the morning peak and westbound in the afternoon peak with the addition of project-generated traffic. State Route 33 would operate at LOS D south of Sperry Avenue northbound in the morning and southbound in the afternoon peak hours, as it would without project traffic. These two segments would meet City standards. Therefore no significant impacts would result.

The model projections show that Sperry Avenue would operate acceptably in the future as a four-lane road. Based on the model results, a new future freeway connection to I-5 would not be needed to accommodate future demand. However, if a future interchange to I-5 were provided pursuant to the planned November 2006 bond measure or other funding mechanism, and if it were located north of Sperry Avenue, it would provide better access for future eastbound and westbound trips starting or ending north of Sperry Avenue. The Villages of Patterson project, along with other development, may be required to participate in funding such improvements.

The modeling results showed that Zacharias Road is serving as an alternate access to future employment in the West Patterson Business Park. Instead of using Sperry Avenue, some future traffic, including traffic from the proposed project, is expected to be using Zacharias Road to access the business park. The projected morning peak hour volume is nearly 800 vph in the westbound direction. Based on this analysis, a mitigation measure is identified in Impact D.5.

Table III.D-10: Roadway Segment Levels of Service – Future 2030 Baseline Plus Project (Revised)

Segment No.	Freeway / Roadway Segment	Direction	No. Lanes	Capacity	A.M. Peak Hour			P.M. Peak Hour		
					Volume (veh)	Speed (mph)	LOS	Volume (veh)	Speed (mph)	LOS
1.	I-5, n/o Sperry Ave.	NB	2	4,600	3,022	-	C	3,119	-	C
		SB	2	4,600	2,997	-	C	3,064	-	C
2.	I-5, s/o Sperry Ave.	NB	2	4,600	3,355	-	D	2,742	-	C
		SB	2	4,600	2,403	-	B	3,159	-	C
3.	I-5, s/o Fink Rd.	NB	2	4,600	2,683	-	C	2,529	-	B
		SB	2	4,600	2,512	-	B	2,686	-	C
4.	Sperry Ave. e/o Rogers Road	EB	2	2,280	1,031	25.5	C	1,083	25.0	C
		WB	2	2,280	872	26.0	C	1,437	24.0	C
5.	Baldwin Rd, n/o Sperry Ave.	EB	1	890	493	17.0	D	327	18.0	C
		WB	1	890	242	18.5	C	520	17.0	D
6.	SR-33, n/o Zacharias Rd.	NB	1	1,140	703	27.0	C	469	28.5	C
		SB	1	1,140	540	28.0	C	703	29.0	C
7.	SR-33, s/o Sperry Ave.	NB	1	1,140	894	26.5	D	633	25.0	C
		SB	1	1,140	280	30.0	C	862	26.5	D
8.	Ward Ave., n/o Las Palmas Ave.	NB	1	1,140	537	25.5	C	562	25.5	C
		SB	1	1,140	624	25.0	C	636	25.0	C
9.	Ward Ave., s/o Marshall Rd.	NB	1	1,140	598	25.0	C	574	25.0	C
		SB	1	1,140	522	25.5	C	556	25.0	C
10.	E. Las Palmas Ave., e/o Sycamore Ave.	EB	1	1,140	178	26.5	C	376	26.0	C
		WB	1	1,140	374	26.0	C	29	27.0	C
11.	Main St., e/o Carpenter Rd.	EB	1	1,140	423	26.0	C	652	25.0	C
		WB	1	1,140	622	24.5	C	437	26.0	C

Notes: n/o = north of; s/o = south of; e/o = east of
V/C = ratio of volume to capacity
LOS = level of service

Source: TJKM, April 2006.

An annual traffic monitoring program is identified as Mitigation Measure D.5.o to determine when widening Zacharias Road to four lanes between Rogers Road and SR 33 may be necessary in the future.

Mitigation Measure. No mitigation necessary.

E. AIR QUALITY

This section describes the existing air quality conditions in the Patterson area and evaluates the potential impacts on air quality that would result from construction and operation of the proposed Villages of Patterson Development Plan. This section discusses the project's potential to cause or contribute to violations of state and federal ambient air quality standards, and to expose sensitive receptors to toxic air contaminants or nuisance odors.

SETTING

CLIMATE AND METEOROLOGY

The climate of the San Joaquin Valley is generally controlled by a semi-permanent subtropical high-pressure system located in the northern Pacific Ocean. In the summer, this high-pressure system provides clear skies, high temperatures, and low humidity. Very little precipitation occurs during the summer months because storms are blocked by the high-pressure system. Beginning in the fall and continuing through the winter, the high-pressure system weakens and moves south, allowing storms to move through the area. Temperature, winds, and rainfall are more variable during the winter months. Winter weather patterns include periods of stormy weather with rain and gusty winds, clear weather that can occur after a storm, or persistent fog.

The predominant annual wind direction in the project area is from the north through west-northwest. These winds mainly occur through the spring, summer, and fall. In the winter, the winds tend to be either from the northwest or from the southeast depending on storm flow. Low wind speeds and stable thermal conditions during the winter or nighttime provide opportunity for the formation of persistent fog. Higher winds during daylight hours and during the spring, summer, and fall allow region-wide transport of pollutants throughout the valley.

REGULATORY FRAMEWORK

Regulated Pollutants

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are standards that define the upper limits for ambient airborne concentrations of pollutants. The standards are designed to protect all aspects of the public health and welfare, with a reasonable margin of safety. At the national level, the federal Clean Air Act requires the U.S. Environmental Protection Agency (U.S. EPA) to establish NAAQS and designate geographic areas that are either attaining or violating the standards. In California, the task of air quality management and developing air quality regulations has been legislatively granted to the California Air Resources Board (CARB) and local air quality management

districts. The CARB establishes CAAQS and designates the attainment status of each area in the state with the standards. The San Joaquin Valley Air Pollution Control District (District) coordinates the efforts to comply with these standards.

The NAAQS and CAAQS are established for "criteria pollutants." These are ozone, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Ozone is an example of a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe). It is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROG), including volatile organic compounds (VOC), and nitrogen oxides (NO_x), are monitored and regulated because they are precursors to ozone formation. **Table III.E-1: State and Federal Ambient Air Quality Standards** identifies the ambient national and state air quality standards.

Toxic air contaminants (TACs) are a category of air pollutants regulated separately from criteria pollutants. The TACs are suspected or known to cause cancer, birth defects, neurological damage, or death. There are no established ambient air quality standards for TACs. Instead they are managed on a case-by-case basis depending on the quantity and type of emissions and proximity to potential receptors. Their effects tend to be localized and directly attributable to certain sources.

Air Quality Planning and Attainment

The CARB is responsible for oversight of air quality management in the state. CARB's responsibilities include establishing emissions standards and regulations for certain mobile sources (e.g., autos, light-duty trucks) and overseeing the efforts of local air quality management districts. The District is responsible for demonstrating that attainment of the ambient air quality standards is either achieved or will be achieved through proper regional planning in the San Joaquin Valley Air Basin (SJVAB). The District directly regulates stationary emission sources through its permit authority and indirectly manages emissions from mobile sources through coordination with regional municipalities and transportation planning agencies.

Because of on-going violations of the NAAQS and CAAQS for ozone and PM_{10} in SJVAB, the region is designated as a nonattainment area for these criteria pollutants, and these pollutants are therefore the most relevant to air quality planning and regulation in the SJVAB. The District manages these pollutants through a long-term attainment planning process that forecasts emissions and future concentrations depending on changes in source activity, regulatory programs, and meteorological conditions. The air quality plans for demonstrating attainment (one each for ozone and PM_{10}) are evolving documents that are updated approximately triennially to

Table III.E-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	National Standard	Violation Criteria	
				State	National
Ozone	1-hour	0.09 ppm	–	If exceeded	If exceeded on more than 3 days in 3 years.
	8-hour	0.07 ppm*	0.08 ppm	If exceeded	If the 4th highest 8-hour concentration in a year, averaged over 3 years, is exceeded
Respirable particulate matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	If exceeded	If expected number of days with average 24-hr concentration is over one.
	Annual mean	20 µg/m^3	50 µg/m^3	If exceeded	If exceeded
Fine particulate matter ($PM_{2.5}$)	24-hour	—	65 µg/m^3	If exceeded	If 98% of average 24-hour daily concentration, averaged over 3 years, is exceeded
	Annual mean	12 µg/m^3	15 µg/m^3	If exceeded	If exceeded
Carbon monoxide (CO)	1-hour	20 ppm	35 ppm	If exceeded	Not to be exceeded more than one day a year
	8-hour	9.0 ppm	9 ppm	If exceeded	Not to be exceeded more than one day a year
Nitrogen dioxide (NO_2)	1-hour	0.25 ppm	–	If equaled or exceeded	NA
	Annual mean	–	0.053 ppm	NA	Not to be exceeded more than one day a year
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	–	If equaled or exceeded	NA
	24-hour	0.04 ppm	0.14 ppm	If equaled or exceeded	Not to be exceeded more than one day a year
	Annual mean	–	0.03 ppm	NA	Not to be exceeded more than one day a year

Notes:
ppm = parts per million; µg/m^3 = micrograms per cubic meter; "–" = no standard; NA = not applicable.
* This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.

Source: CARB Ambient Air Quality Standards Table, November 29, 2005.

reflect the changing population, economic, land use, and transportation conditions in the San Joaquin Valley. The local transportation planning agencies (in this area, Stanislaus Council of Governments) and CARB provide the information needed to predict future on-road mobile source emissions. Programs for motor vehicle inspection and maintenance (smog check), fuel reformulation, encouraging use of transit, and stringent control of stationary sources are all triggered by the nonattainment status of the area. If violations of the ambient air quality standards in the region persist beyond the attainment dates predicted by District plans, federal transportation funds can be withheld, adversely affecting future transportation projects in the region. The region needs to meet the federal 8-hour ozone standard before 2013, and the PM_{10} standard by 2010.

Ozone Planning

Effective June 15, 2005, the U.S. EPA revoked in full the federal 1-hour ozone ambient air quality standard, including associated designations and classifications, in all areas except 14 "early action compact areas" that do not include the SJVAB. On April 15, 2004, the U.S. EPA designated 15 areas in California, including the SJVAB, that violate the federal 8-hour ozone standard. Each nonattainment area's classification (marginal, moderate, serious, or severe) and attainment deadline are based on the severity of its ozone problem. The SJVAB is a serious nonattainment area. The attainment deadline for the 8-hour NAAQS is 2013 for the SJVAB.

The CARB submitted the 2004 Extreme Ozone Attainment Demonstration Plan to the U.S. EPA on November 15, 2004. The U.S. EPA is currently reviewing the plan. In coordination with CARB and other north/central California air quality management districts, preliminary work has begun on developing the 8-hour Ozone Attainment Demonstration Plan for SJVAB. A State Implementation Plan (SIP) demonstrating attainment of the new federal ozone standard must be adopted by the local air districts and CARB, and submitted to the U.S. EPA by June 15, 2007. CARB, air quality management districts, and other key stakeholders are coordinating development of the SIP through the Northern California 8-Hour Ozone SIP Working Group (Working Group). The Working Group provides a forum for the sharing of technical information and for ensuring that each area's SIP is consistent with attainment throughout the region.

Particulate Matter Planning

The District developed a PM_{10} Attainment Demonstration Plan in 2003[1] (PM_{10} Plan), and the PM_{10} Plan was adopted by CARB in June 2003 and approved by U.S. EPA in April 2004. The PM_{10} Plan was amended in December 2003. The PM_{10} Plan identifies aggressive steps that the District must implement to achieve attainment with the federal standards. Some of the control strategies include more stringent control of agricultural dust, road dust, and dust from construction activities. The District has also established an Indirect Source Mitigation Fee Program that would require new development projects to mitigate their indirect emissions (meaning emissions from motor vehicle trips generated by that project) or contribute to some type of mitigation fund that could be used to identify and pay for emission reduction projects.[2] In February 2006, the District formally adopted the 2006 PM_{10} Plan, which was submitted to the U.S. EPA.

Fine particulate matter ($PM_{2.5}$) is also a pollutant of concern in the SJVAB. The NAAQS for $PM_{2.5}$ are being implemented through U.S. EPA rule-making and ambient monitoring to determine if the attainment status of the region is underway. Monitoring will likely reveal violations of the $PM_{2.5}$ NAAQS, which will trigger a separate long-range planning process for the District to identify and manage sources of this pollutant and its precursor pollutants.

Carbon Monoxide Planning

On April 26, 1996, CARB approved the "Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas" as part of the SIP for carbon monoxide. The nearest planning area was the Modesto Urban Area, which did not include the City of Patterson. Improvements in CO conditions were achieved due to improvements in motor vehicles and the use of reformulated fuels. The U.S. EPA approved this revision on June 1, 1998 and redesignated the ten areas to attainment. On October 22, 1998, CARB revised the SIP to incorporate the effects of the recent regulatory action to remove the wintertime oxygen requirement for gasoline in certain areas. On July 22, 2004, CARB approved an update to the SIP that shows how the ten areas will maintain the standard through 2018, revises emission estimates, and establishes new on-road motor vehicle emission budgets for transportation conformity purposes. The attainment status for each of the criteria pollutants, including CO, is summarized in **Table III.E-2: Ambient Air Quality Attainment Status for San Joaquin Valley**.

[1] San Joaquin Valley Air Pollution Control District, *PM_{10} Attainment Demonstration Plan,* adopted June 2003.
[2] Ibid, p. 4-39.

Table III.E-2: Ambient Air Quality Attainment Status for San Joaquin Valley

Pollutant	State-Level Attainment Status	Federal-Level Attainment Status
Ozone (1-hour)	Nonattainment (Severe)	–
Ozone (8-hour)	–	Nonattainment (Serious)
Inhalable Particulates (PM_{10})	Nonattainment	Nonattainment (Serious)
Fine Particulates ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment

Notes: "–" = not applicable

Source: CARB, http://www.arb.ca.gov/desig/adm/adm.htm, updated February 3, 2006.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are managed through a combination of source identification, risk characterization, control requirements, and avoidance of land use conflicts. All stationary sources of TACs are subject to the District's permitting requirements, which include an evaluation of potential TAC emissions and risks to nearby receptors. Stationary sources are screened for their potential to cause health risks using a facility prioritization score. The District does not require detailed assessments of facilities with prioritization scores below 1, because their emissions would not be likely to result in potential health risks. For new sensitive land uses (including residential areas and schools), it is the responsibility of the city or county to identify whether the new land uses would be located near existing sources of TACs. Management of the public's exposure to odors is also generally accomplished by avoiding land use conflicts with appropriate distance controls.

In 1998, CARB identified diesel engine particulate matter as a TAC. Mobile sources, such as trucks, buses, automobiles, trains, ships, and farm equipment are the largest source of diesel emissions. CARB estimates that 70 percent of the known statewide cancer risk from outdoor air toxics is attributable to diesel particulate matter.[3] Approximately 24 percent is attributed to on-road diesel-fueled vehicles.[4] CARB recommends avoiding siting new sensitive land uses within 500 feet of freeways with 100,000 vehicles per day.[5] State Highway 33 peak hourly traffic rate is

[3] California Air Resources Board, The California Almanac of Emissions and Air Quality, 2005.
[4] Ibid.
[5] California Air Resources Board, 2005, Air Quality and Land Use Handbook: A Community Health Perspective, March.

790 vehicles per hour.[6] Particulates from diesel exhaust are managed through vehicle emission control programs implemented on a state and federal level with the cooperation of fuel suppliers and vehicle and engine manufacturers. In September 2000, the Air Resources Board (ARB) approved a comprehensive Diesel Risk Reduction Plan (Plan) to reduce diesel emissions from both new and existing diesel-fueled engines and vehicles. The goal of the Plan is to reduce diesel PM emissions and the associated health risk by 75 percent in 2010 and 85 percent by 2020, through cleaner fuels, such as ultra-low sulfur diesel, new diesel tailpipe regulations, and regulations governing operations such as idling restrictions.[7]

On June 30, 2005, the CARB entered into a pollution reduction agreement with Union Pacific Railroad (UP) and BNSF Railway (BNSF). The railroads have committed to studying and reducing pollution risks from diesel emissions. The railroads have also agreed to the following:

- Phaseout non-essential idling within six months, and install idling reduction devices on California-based locomotives within 3 years.
- Identify and expeditiously repair locomotives with excessive smoke and ensure that at least 99 percent of the locomotives operating in California pass smoke inspections.
- Maximize the use of ultra low sulfur (15 parts per million) diesel fuel by January 1, 2007, six years before such fuel is required by regulation.
- Conduct health risk assessments for 17 major rail yards and use these studies to identify risk reduction measures.

Applicable Air Quality Regulations

The following rules and regulations, known as the Rules and Regulations of the District, may apply to the proposed project. It should be noted that at this time it is not known specifically what commercial enterprises might operate at the project site. Some commercial enterprises, such as dry cleaning facilities or bakeries, have air emissions regulated by the District and would be required to comply with other rules not listed below.

- Rule 4101 Visible Emissions. This rule prohibits the emissions of visible air contaminants to the atmosphere. The rule prohibits the discharge into the atmosphere from any single source of emission, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one hour which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart.
- Rule 4103 Open Burning. This rule regulates through a permit process open burning, including agricultural burning, to minimize the smoke impact on the public. The District used a daily allocation system to limit the amount, timing, and locations of open burning. The District considers several factoring including air quality, meteorological conditions

[6] Department of Transportation, 2003 traffic counts, http://traffic-counts.dot.ca.gov/2003all/r022-33i.htm
[7] CARB, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000.

expected during burning, locations of smoke sensitive areas relative to the materials to be burned, and types and amounts of materials to be burned.

- Rule 4306 Boilers, Steam Generators, and Process Heaters, Phase 3. This rule requires all boilers and steam generators with a heat input rating greater than 5 million British thermal units per hour (MMBtu/hr) to achieve certain exhaust limits for NO_x and CO. This rule was established in 2003 as part of the strategy for achieving ozone attainment.
- Rule 4601 Architectural Coatings. The purpose of this rule is to limit VOC emissions from architectural coatings by regulating the storage, cleanup, and labeling requirements. Painting Practices: The rule requires that all containers containing architectural coatings (including any volatile material used for thinning or cleanup) be closed when not in use. The rule also set limits on the amount of volatile organic compounds in architectural coating and prohibits thinning such that the limits would be exceeded.
- Rule 4641, Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. This rule limits volatile organic compound emissions by restricting the application and manufacturing of cutback asphalt,[8] slow cure asphalt, or emulsified asphalt.
- Rule 4702 Internal Combustion Engines, Phase 2. This rule requires stationary engines to meet certain exhaust limits for NO_x and CO, but these limits are not applicable to standby engines as long as they are used fewer than 200 hours per year (e.g., for testing during non-emergencies).
- Rule 4901 Wood Burning Fireplaces and Wood Burning Heaters. This rule limits emissions of carbon monoxide and particulate matter from wood-burning fireplaces and heaters by regulating the sale, supply, and installation of wood-burning devices. Wood-burning heaters must be EPA Phase II Certified and sellers must provide public information about proper operation and maintenance of the heater and the health effects of wood smoke. The rule also prohibits the installation of wood-burning fireplaces in new residential developments with a density greater than two dwelling units per acre or more than one wood-burning heater per dwelling unit in any new residential development with a density equal to or greater than two dwelling units per acre.
- Rule 4902 Natural Gas-fired, Fan-Type Residential Central Furnaces. This rule requires natural gas-fired, fan-type residential central furnaces sold or installed with the District be certified as meeting specified exhaust limits for NO_x.
- Regulation VIII (Fugitive PM_{10} Prohibitions). These series of rules (8011, 8021, 8031, 8041, 8051, 8061, 8071, 8081) are aimed at reducing fugitive PM_{10} emissions. Sources regulated under these rules include construction, excavation, earthmoving activities, carryout and trackout, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources.
- Rule 9510 Indirect Source Review (ISR). The purpose of this rule is to fulfill the District's emission reduction commitments in the PM_{10} and Ozone Attainment Plans by reducing emission from the construction and operational uses of projects through design features and on-site measures. The rule also provides a mechanism for reducing emissions through off-site measures. These reductions are achieved through

[8] Cutback asphalt is manufactured by blending asphalt cement with a petroleum solvent.

> implementation of the Indirect Source Review Program. This rule applies to any applicant that seeks to gain a *final discretionary approval* for qualified projects.[9]

The applicant must submit an Air Impact Assessment (AIA) application to the District at the same time as applying for a final discretionary approval from the relevant public agency. The project applicant must commit to reducing NO_x and PM_{10} emissions from construction activities and operational use of the project. For construction equipment greater than 50 horsepower the NO_x emissions must be reduced by 20 percent and the PM_{10} emissions 45 percent below the statewide average. The District believes that reductions in construction emissions can be achieved by using add-on controls, cleaner fuels, or newer equipment. Operational emissions must be reduced by 33 percent for NO_x and 50 percent for PM_{10} below the project's operational baseline at the time of buildout over a period of ten years. These emission reductions may be met through any combination of on-site emission reduction measures such as bike trails, or increases in energy efficiency, or through fees that fund emission reduction programs off-site. Implementation of the project in accordance with the District's rules and regulations would ensure project compliance with the District's planning documents for achieving ambient air quality standards.

City of Patterson, General Plan Policies

The City of Patterson recognizes that its actions can be coordinated to aid the District in the effort of attaining the ambient air quality standards. The Air Quality Policies of the *City of Patterson General Plan* (amended September 7, 2004) contain the following Air Quality Policies that are relevant to the proposed Villages of Patterson project:

- *Policy VI.D.2*: The City shall utilize the CEQA process to identify and avoid or mitigate potentially significant air quality impacts of new development. The CEQA process shall also be utilized to ensure early consultation with the District concerning air quality issues associated with specific development proposals.
- *Policy VI.D.3:* The City shall notify and coordinate with the District when industrial developments are proposed. Such coordination will assist applicants in complying with applicable air quality regulations and will assist the City in promptly identifying and resolving potential air quality problems.
- *Policy VI.D.4:* Major intersections shall be designed to minimize long vehicle delays, which result in carbon monoxide (CO) "hot spots."
- *Policy VI.D.5:* The City shall, to the extent practicable, separate sensitive land uses from significant sources of air pollutants or odor emissions.

[9] "Qualified projects" include 50 residential units; 2,000 square feet of commercial space; 25,000 square feet of light industrial space; 100,000 square feet of heavy industrial space; 20,000 square feet of medical office space; 39,000 square feet of general office space; 9,000 square feet of educational space; 10,000 square feet of government space; 20,000 square feet of recreational space; or 9,000 square feet of space not otherwise identified.

- *Policy VI.D.6:* The City shall promote expansion of employment opportunities within Patterson to reduce commuting to areas outside Patterson.
- *Policy VI.D.7:* The City should review development proposals using criteria established by the District in order to minimize future increases in vehicle travel and to assist in implementing appropriate indirect source regulations adopted by the District.

Assembly Bill 170, adopted in September 2003, amended the state Planning Law in the California Government Code to add Section 65302.1, requiring, after January 1, 2004, the legislative body of each city and county within the jurisdiction of the District to amend appropriate elements of general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality no later than one year after the first revision of their housing elements that occurs after January 1, 2004. Cities and counties are required to submit these air quality amendments to the District at least 45 days prior to the adoption of those amendments, and the District has 30 days to return comments and advice.

To facilitate this process, the District published a document entitled, "Air Quality Guidelines for General Plans." That report is a comprehensive guidance document and resource for cities and counties to use to include air quality measures in their general plans. It includes goals, policies, and programs that, when adopted in a general plan, will reduce vehicle trips and miles traveled and improve air quality. The proposed Villages of Patterson project contains many of the goals and policies suggested in the Air Quality Guidelines that support improved air quality.

EXISTING LOCAL AIR QUALITY CONDITIONS

In contrast to other air basins in California, the air quality in the SJVAB is not dominated by a single large urban source, but by a number of moderately sized urban areas spread along the valley main axis. While only 10 percent of California's population lives in the San Joaquin Valley, pollution sources in the region account for about 14 percent of the total statewide criteria pollutant emissions. With the exception of PM_{10}, emission levels in the SJVAB have been decreasing since 1990. This is primarily due to improved controls on motor vehicle emissions, which are the primary source of CO and NO_x. A large source of ROG in the region comes from the oil and gas production in the lower San Joaquin Valley. Particulate matter emissions are primarily from road dust, agricultural operation, residential fuel combustion, and waste burning.[10]

The CARB and the District continually monitor the ambient concentrations of criteria pollutants including ozone, inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and carbon monoxide. The station nearest the project site is located approximately seven miles to the southeast on 14th Street in downtown Modesto. **Table III.E-3: Ambient Air Quality Data Summary, Modesto Station** summarizes the relevant data.

[10] California Air Resources Board, The California Almanac of Emissions and Air Quality, 2005 Edition.

Table III.E-3: Ambient Air Quality Data Summary, Modesto Station

Ozone

Year	Days Over State 1-hr Std.	Max. 1-hr (ppm)	3 yr Ave 4th Highest 1-hr Ave. (ppm)	Days Over Natnl. 8-hr Std.	Max. 8-hr Ave. (ppm)	3 yr Ave 4th High 8-hr Ave. (ppm)
2000	7	0.131	0.131	4	0.101	0.090
2001	12	0.124	0.109	7	0.093	0.088
2002	14	0.120	0.109	6	0.096	0.088
2003	9	0.110	0.109	1	0.091	0.086
2004	2	0.104	0.106	0	0.084	0.083
2005	15	0.115	0.107	6	0.094	0.083

CO

Year	Days Over Natnl. 8-hr Std.	Max. Natnl. 8-hr Ave. (ppm)	Days Over State 8-hr Std.	Max. State 8-hr Ave. (ppm)
2000	0	5.98	0	5.98
2001	0	6.03	0	6.03
2002	0	4.46	0	4.46
2003	0	3.76	0	3.76
2004	0	2.98	0	2.98
2005	0	2.53	0	2.68

	$PM_{2.5}$			PM_{10}			
Year	Est. Days Over Natnl. 24-hr Std	Max. 24-hr Ave. (µg/m3)	3-Yr Ave. 98th percentile (µg/m³)	Est. Days Over Natnl. 24-hr Std.	Max. Natnl. 24-hr Ave. (µg/m3)	Est. Days Over State 24-hr Std.	Max. State 24-hr Ave. (µg/m³)
2000	15.1	77	--	0	112	68.3	119
2001	8.7	95	80	3	158	60.8	160
2002	8.4	83	70	0	83	76.3	86
2003	0	64	62	0	70	26.3	71
2004	0	53	54	0	80	36	79
2005	--	53	--	0	93	51.4	97

Notes:
hr = hour; yr = year, Ave. = Average; Std. = Standard; Max. = Maximum; Natnl. = National; ppm = parts per million; µg/m³ = micrograms per cubic meter.

Source: CARB, http://www.arb.ca.gov/adam/welcome.html. Accessed March 3, 2006.

Exceedances of the SO_2 and lead violations have not been observed; and lead has been essentially eliminated from the atmosphere with use of unleaded fuels.

In general, the average concentrations and associated health risks of most TACs for the SJVAB are lower than the statewide averages. The CARB monitors ambient TAC concentrations at six sites within the SJVAB (data for the Modesto 14th Street site is only available from 1990 through 1999 and additional data were collected from a monitoring site on I Street in Modesto between 1991 and 1997). The CARB's estimates of the health risk associated with individual TACs indicates that the risk to health from diesel particulate matter is approximately ten times the risk of the next monitored TAC.[11] According to the most-recent District annual report on toxics, mobile sources are responsible for the greatest portion of emissions of many toxic air pollutants, such as benzene, formaldehyde and diesel particulate matter. Due largely to observed reductions in air toxics from motor vehicles, the calculated average cancer risk has been significantly reduced in recent years.[12]

EXISTING LOCAL SOURCE INVENTORY

An emission inventory for Stanislaus County is presented in **Table III.E-4: Stanislaus County Emission Inventory**, below. Throughout the SJVAB, agricultural operations and mobile sources account for the majority of ozone precursor and PM_{10} emissions. The majority of PM_{10} emissions in the San Joaquin Valley are attributed to farming operations and airborne dust from paved and unpaved roads.[13] Managing growth in emissions from agricultural operations and emissions from all types of motor vehicle activity is an important component of the regional air quality attainment strategy. Industry and other stationary sources make up the remainder of the human-generated emissions in the SJVAB.

Table III.E-4: Stanislaus County Emission Inventory (tons per day, annual average)

Year	1975	1980	1985	1990	1995	2000	2005	2010*
NO_x	51	64	63	77	66	57	48	39
ROG	76	71	66	71	61	54	46	43
CO	408	403	394	412	314	243	185	149
PM_{10}	30	31	31	37	36	36	33	30
$PM_{2.5}$	14	15	15	16	16	15	14	13

Note: * = Predicted

Source: CARB, The California Almanac of Emissions And Air Quality— 2006 Edition.

[11] California Air Resources Board, The California Almanac of Emissions and Air Quality, 2005 Edition.
[12] San Joaquin Valley Air Pollution Control District, *2002 Air Toxics Annual Report*, released May 2003. Available at: http://www.valleyair.org/busind/pto/air_toxics_annual_reports.htm.
[13] San Joaquin Valley Air Pollution Control District, *Guide for Assessing and Mitigating Air Quality Impacts, Technical Document*, Section 3, revised January 10, 2002.

Present land uses on the project site primarily include agricultural production, single-family residences, and some commercial/office space. Row crops and fallow fields make up the majority of the agricultural use throughout the north and central portions, with some orchards planted in the northwest corner of the site. Major sources of air emission sources in the vicinity are on- and off-road equipment and farming activities or burning that can create substantial dust or soot emissions.

The estimated annual PM_{10} emission from the project site from the current agricultural land use, assuming 125 acres of orchard and 500 acres of row crops is 13 tons [14] The estimate includes land preparation, planting, weeding, burning, and harvesting. The estimate does not include additional agricultural activities, such as orchard heaters, that also generate PM_{10} emission.

Agricultural land uses surrounding the project site can also occasionally cause emissions of TACs from pesticide application.[15] A search of the stationary source facility database maintained by CARB[16] indicated the following facilities are the major air pollutant emitters in the area: Designed Mobile Systems, Inc. - 800 S. Highway 33; Global Valley Networks Inc. - 25 El Circulo (now located in the Keystone Business Park); Unocal California Pipeline Co. - 2900 Oak Flat Road; and Vieira's Petroleum Company - 341 South First Street.

The closest of these facilities, and also the one emitting the largest mass of air pollutants is Designed Mobile Systems, Inc. Designed Mobile Systems, Inc. designs and builds modular buildings on 11 acres approximately one-half mile south of the project site boundary. The following is the 2002 emissions inventory for that facility in tons per year: Total organic gases - 13.2; ROG - 13.2; PM - 6.9; PM_{10} - 6.6; $PM_{2.5}$ - 6.4.

Mobile sources in the project vicinity are the major source of air emissions. Traffic on State Route 33 and other on-road vehicles throughout the region's transportation network routinely emit ROG, NO_x, and CO. On- and off-road vehicles are also a major source of respirable particulate matter emissions (PM_{10} and $PM_{2.5}$) from entrained dust on the roadways. Exhaust from diesel train engines is another source of air emissions. There are active Union Pacific (UP) railroad track west of the project site.

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[14] Based on CARB methodology. CARB, Summary of Fugitive Dust and Ammonia Emission Inventory Changes for the SJVU APCD Particulate Matter SIP, Revision 2.1, May 2003.

[15] The California Department of Pesticide Regulation is updating its process to improve management of the chemicals that pose the greatest risks (risk assessment prioritization), January 2004. Available at: http://www.cdpr.ca.gov/.

[16] The Facility Health Risk Assessment (HRA) and Prioritization Score data were collected under the Air Toxics "Hot Spots" Program. The inventory year associated with the most recent emissions data. Available at:http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php

SENSITIVE RECEPTORS

Land uses such as schools, children's day-care centers, hospitals, and convalescent homes are considered sensitive receptor locations because the population groups typically found in these areas are potentially more susceptible to respiratory distress than the general public. Other land uses, such as parks, where persons engaged in strenuous work or exercise have increased sensitivity to poor air quality or residential areas, because children generally spend longer periods of time there are also considered sensitive receptor locations. Because these groups may have heightened sensitivity to air quality impacts, the project's effect on air quality is evaluated to the nearest sensitive receptors.

Sensitive receptors in the project vicinity include existing single-family residential neighborhoods located to the south and west of the project area. Future users of residential areas, schools, and community parks within the Patterson Villages development are also potential sensitive receptors.

There are nine schools located with one mile of the project site: Patterson High School, Creekside Middle School, Del Puerto High School, Northmead School, Preschool Classes, Apricot Valley Elementary School, Las Palmas School, and Sacred Heart Catholic School, Walnut Acres Preschool at Mayette and Chase Streets. All these schools are located south of the project area and the closest to the project boundary is Preschool Classes at 456 Eureka Street. The Patterson Joint Unified School District has purchased a site within the Plan Area for a K-8 school (ultimately a 5-8 school) at the northwest corner of Walnut Avenue and Hartley Street. Construction is expected to commence in 2007.

There are three day-care centers located with one mile of the project site: Patterson House of Children at 650 N 2nd Street, Stanislaus County Child at 456 Eureka Street, and Sugar & Spice Day Care at 624 Walnut Avenue.

The park nearest the project site is the Felipe Garza Jr. Memorial Park, located south at North Hartley Street and Lorelei Lane. There is one convalescent home located about one mile from the project site, south of downtown, Foothill Manor 405 South 4th Street. The Del Puerto Heath Center has an outpatient clinic on Ward Avenue at State Highway 33.

IMPACTS AND MITIGATION

SIGNIFICANCE CRITERIA

The San Joaquin Valley Air Pollution Control District (District) establishes thresholds of significance in guidelines adopted by the District in 1998.[17] The guidelines define separate thresholds for construction emissions, project operation and occupation, and cumulative impacts. Project development would cause a significant air quality impact if it were to result in:

- Construction activities that would not comply with District Regulation VIII or implement effective and comprehensive control measures.
- Emissions of air pollutants that would cause or substantially contribute to either localized or regional violations of the ambient air quality standards. (Project emissions of more than 10 tons per year (tpy) of ROG or NO_x would substantially contribute to on-going regional ozone violations.)
- Exposure of sensitive receptors to substantial concentrations of TACs or objectionable odors. (Substantial concentrations are those that lead to an exposure of TACs increasing the probability of contracting cancer for the maximally exposed individual by more than 10 in one million.)

If project development would individually cause a significant air quality impact from project operations, then the cumulative impacts of the project would be considered significant.

METHODOLOGY AND ASSUMPTIONS

Emissions from construction can vary considerably depending on the specific activities taking place, level of activity, soil conditions, and weather. The District emphasizes implementation of control measures determined by the District to be effective and comprehensive rather than detailed quantification of construction emissions.[18] The analysis in this EIR identifies all feasible control measures for emissions of construction dust and equipment exhaust emissions.

Analysis of emissions from project operations involves predicting regional emission changes that would be caused by a large new source of employment and intensification of land use. Large-scale development can cause new mobile source activity, which increases emissions from motor vehicles, and new stationary or area-wide sources. Mobile source emissions depend on the nature of the new vehicle trips. Among the complex variables that affect emission estimates are the trip lengths, trip speeds, and the nature of trip ends (e.g., whether it is followed by another trip in rapid succession or followed by a lull where the vehicle has an opportunity to cool off). The

[17] San Joaquin Valley Air Pollution Control District, *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), revised January 10, 2002, p. 24.
[18] Ibid, p. 24.

URBEMIS 2002 (Version 8.7.0) computer model published by CARB is used to analyze regional emissions from vehicle trips generated by the project.[19] This model includes the CARB-adopted emission factors for the statewide motor vehicle fleet in future years. The analysis for this EIR estimates future mobile source emissions based on the anticipated vehicle trip generation estimates from the Traffic Study[20] and the CARB vehicle emission rates for the San Joaquin Valley. Area source emissions, which include emissions from new natural gas combustion for energy and heating, landscaping activities, and use of consumer products, are also analyzed using URBEMIS 2002.

Because carbon monoxide conditions have improved greatly since the early 1990s, this analysis uses a tiered methodology for analyzing localized CO impacts caused by congested traffic. If heavy traffic would cause the level of service (LOS) on streets or intersections to deteriorate to LOS E or F, or if traffic would substantially worsen at an intersection or street currently operating in an LOS F condition, then the future localized concentrations of CO are predicted and compared to the ambient air quality standards. If these traffic conditions would not occur, then no potential violations of the CO standards are expected to occur.

Evaluating impacts of TACs and odors is accomplished by considering whether notable sources of TACs or objectionable odors would occur with the project, and whether project emissions would be located near existing sensitive receptors.

PROJECT IMPACTS AND MITIGATION

Impact E.1. Emissions of criteria pollutants during project construction would contribute to existing violations of the ambient air quality standards in the region. (Less than Significant with Mitigation)

Development of specific sites within the project area may include construction activities, including soil excavation and backfilling, grading, and movement of equipment and vehicular traffic on paved and unpaved roads. Airborne dust is a substantial component of the elevated PM_{10} concentrations in the San Joaquin Valley. Excavation, grading, unvegetated surfaces exposed to wind, material handling, material storage piles, and vehicle travel on paved and unpaved surfaces all can be sources of substantial fugitive dust emissions if not properly managed or maintained. As a result, construction activities have the potential to cause short-term dust emissions, which increase localized PM_{10} and $PM_{2.5}$ concentrations compared to existing conditions. Construction activities also impact air quality due to emissions from construction equipment that burn fossil fuels.

[19] Jones & Stokes Associates, Software User's Guide: URBEMIS 2002 for Windows with Enhanced Construction Module, Version 8.7.0, April 2005.
[20] TJKM Transportation Consultants, *The Villages of Patterson EIR Traffic Study*, July 2006.

The District considers fine particulate matter (PM_{10}) to be the pollutant of greatest concern with respect to construction activities. Particulates can cause or exacerbate asthma and bronchitis, and particulates contribute to reduced lung function in children. The District oversees an extensive set of rules in Regulation VIII to reduce adverse health effects from new construction-related PM_{10} and to address nuisance concerns such as visible clouds of dust and soiling of exposed surfaces. All aspects of the proposed Villages Development project would be expected to comply with the District rules; however, the District specifically identifies measures for use as CEQA mitigation measures.[21] Without implementing the District-recommended mitigation, construction-related fugitive dust emissions could contribute substantially to on-going violations of the PM_{10} standards, which would cause a significant impact. Quantification of construction emissions due to construction equipment burning fossil fuels is performed and reviewed by the District during the ISR program, when more specific detail about the types of equipment to be used are known. If all the PM_{10} control measures developed by the District are implemented, as appropriate, then the District considers air emissions from construction activities a less-than-significant impact.

Implementation of the mitigation measure below would reduce this impact to less than significant.

Mitigation Measure E.1a

The construction plans for all project phases shall incorporate the following recommendations from the District to minimize PM_{10} emissions during construction phases:

- The project developers shall review Regulation VIII of the District's regulations and submit a compliance plan to the City of Patterson prior to commencing any phase of construction. The compliance plan must demonstrate that the current requirements of Regulation VIII will be implemented.
- Prior to the issuance of construction contracts, the project developers shall perform a review of new technology, such as the use of particulate filters, to determine if advances in emissions reduction are available for use. The District should be consulted during this process.
- The project developers shall limit traffic speed on unpaved roads to 15 miles per hour.
- The project developers shall install sandbags or other control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- The project developers shall install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site, to prevent track-out of soil to public roadways.

[21] San Joaquin Valley Air Pollution Control District, *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), revised January 10, 2002, pp. 65-66.

- The project developers shall install windbreaks at windward sides of construction areas, if necessary to prevent wind-blown dust.
- The project developers shall suspend excavation and grading activity when winds exceed 20 miles per hour.
- The project developers shall limit the area subject to excavation, grading, and other construction activity at any one time.
- The project developers shall ensure that the accumulation of mud or dirt is expeditiously removed from adjacent public streets at least once every 24 hours when construction activities are occurring (the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions).
- The project developers shall implement activity management to reduce cumulative short-term impacts.

Mitigation Measure E.1b

The developers shall implement the following measures to control construction emissions of ozone precursors:

- The project developers shall use alternative-fuel construction equipment, where feasible.
- The project developers shall minimize idling time (e.g., to a 10-minute maximum).
- The project developers shall limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use to the minimum practical.
- Prior to the issuance of construction contracts, the project developers shall perform a review of new technology, such as the use of diesel oxidation catalysts, to determine if advances in emissions reduction are available for use. The District should be consulted during this process.
- The project developers shall replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set), where feasible.

Implementation of these mitigation measures would reduce impacts of construction-related PM_{10} and impacts of ozone precursors from construction equipment exhaust to a less than significant level.

Impact E.2. Emissions of criteria pollutants during project operation would contribute to existing violations of the ambient air quality standards in the region. (Significant and Unavoidable)

Air quality impacts to the regional air basin depend on the growth of the emission inventory. Because the San Joaquin Valley is designated a nonattainment area for violations of the ozone PM_{10}, and $PM_{2.5}$ standards, any new emissions of these pollutants and their precursors could cause or contribute to continuing violations of state and national air quality standards. Development of the project would remove current emissions, primarily PM_{10}, from the cessation

of agricultural activities on the project site. Although motor vehicle sources are the subject of numerous state and federal emission control requirements currently in place, the regional benefits provided by those programs are being off-set by local population growth and resultant increase in the levels of vehicular activity. The proposed project would cause motor vehicle emissions to increase because of additional vehicle trips and it would also cause minor amounts of emissions from stationary sources.

Buildout (with operation and occupation) of any phase of the proposed project would increase motor vehicle activity in the region by generating and attracting vehicle trips. Increased motor vehicle activity would cause increased emissions of ozone precursor pollutants (ROG and NO_x) and respirable particulate matter (PM_{10} and $PM_{2.5}$). Along with motor vehicle emissions, emissions from stationary and area sources would also increase with the development. Stationary sources associated with the proposed project are substantially less than the mobile sources and would include the natural gas uses by equipment such as water heaters, landscape equipment, consumer product, and architectural coatings (paint). As noted in Impact E.1, health effects of particulates include asthma, bronchitis, and reduced lung function. Ozone, formed by ROG and NO_x also can cause or contribute to asthma and reduced lung capacity.

The start of construction of the infrastructure improvements is estimated to begin in spring of 2007 with full buildout in 2013 to 2020 for the residential areas and 2018 to 2020 for the light industrial areas. Based on this estimate, the target date of 2020 was used for vehicle emissions.[22] Other assumptions used in the UBEMIS model are listed below:

- The soccer facility will consist of eight fields.
- The schools were modeled as elementary schools, to be conservative.
- Low- and medium-density residential units will be single-family homes
- Ten rapid transit buses will operate within one-half mile daily (Stanislaus Regional Transit, Routes 40 and 45).
- Adjustment to the architectural coating emission rate as recommended by the District.

The estimated emission increases caused by operation of the proposed project are quantified in **Table III.E-5: Project Operational Emissions - Year 2020**. Emissions of ozone precursors (NO_x and ROG) and PM_{10} for any phase of the proposed project would exceed the significance thresholds. Primarily, the project-related emissions would be from motor vehicle activity, but emissions from heating and other energy use would also contribute to this significant impact. It should be noted that although impacts from motor vehicle emissions of NO_x, CO, and ROG

[22] For operational emission projections beyond 2010, URBEMIS evaluates emissions at 5-year intervals, i.e., 2015, 2020, etc.

Table III.E-5: Project Operational Emissions - Year 2020 (tons per year)

	ROG	NOx	CO	SO_2	PM_{10}
Area Sources					
Natural Gas Use	0.88	11.68	7.08	0	0.02
Hearth	7.12	1.12	57.03	0.19	9.3
Landscaping	1.39	0.05	9.11	0.1	0.04
Consumer Products	27.68	-	-	-	-
Architectural Coatings	10.31	-	-	-	-
Subtotal	47.38	12.85	73.22	0.29	9.36
Mobile Sources					
Single family housing	14.51	18.84	161.71	0.26	22.7
Condo/townhouse general	2.61	3.33	28.57	0.05	4.01
Elementary schools	18.77	22.19	189.17	0.29	25.52
City park	0.03	0.03	0.22	0	0.03
Soccer Field Facility	0.05	0.06	0.52	0	0.07
Government office building	13.68	16.23	138.54	0.21	18.21
General light industry	1.08	1.52	12.91	0.02	1.82
TOTAL EMISSIONS	50.74	62.19	531.64	0.83	72.37
Reduction due of Cessation of Agricultural Emissions	0	0	0	0	13
TOTAL EMISSIONS	51	62	532	0.83	59
Significance Thresholds	10	10	--	--	--

Notes:
Includes correction for bypass trips.

Significant threshold from San Joaquin Valley Air Pollution Control District, *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)*, revised January 10, 2002; -- indicates an insignificant level.

Source: URBEMIS2002 Analysis, BASELINE Environmental Consulting, March 2006.

diminish in the future based on state and federal emission control requirements for improving tailpipe emissions, ozone impacts would be significant for any phase of the project and would not be off-set by the foreseeable reductions. Emissions of CO would not substantially affect regional air quality, but they could adversely affect local conditions near heavy traffic areas (as discussed under Impact E.3, below).

To mitigate a project's significant impacts related to ozone, the District recommends implementing a combination of strategies that minimizes the project's vehicle travel demand and the demand for heating, cooling, and other energy use. The applicable mitigation measures would be determined under the Indirect Source Review program (Rule 9510). It should be noted that the emissions estimated for this EIR used mitigation measures that are incorporated into the project conceptual design and do not represent the baseline emission against which the reduction of NO_x and PM_{10} required under Rule 9510 will be measured. The following measures may reduce project emissions shown in Table III.E-5. Even with mitigation, this impact would remain significant and unavoidable.

Mitigation Measure E.2a

The site design shall implement the following design features to reduce emissions from motor vehicle activity:

- The project developers shall incorporate sidewalks and bicycle paths throughout the site and connect those facilities to any nearby pedestrian and bicycle facilities, including those located at open space areas, parks, schools, or commercial areas.
- The project shall include mixed residential and commercial land use, including live/work spaces, with schools and parks within walking or biking distance.
- The project developers shall incorporate secure bicycle storage and parking facilities throughout the site.
- Site plan design shall encourage pedestrian movement between adjacent land uses.
- Incentives such as preferred location of 4 percent of parking for carpoolers and hybrid or other clean-fuel vehicles, at light industrial and commercial uses that provide employee parking, shall be provided.

Mitigation Measure E.2b

The site design shall implement the following site design features to reduce emissions from energy consumption:

- The project developers shall incorporate energy efficient building design features including automated control systems for heating and air conditioning and energy efficiency beyond the requirements of the Building Code (Title 24, California Code of Regulations), increased wall and ceiling insulation beyond Building Code requirements, light colored roof materials to reflect heat, and energy efficient lighting and lighting controls.
- The project developers shall design buildings with window and/or skylight oriented to maximize natural cooling and heating in accordance with the California Energy Commission's 2005 Building Energy Efficiency Standards.
- The project developers shall incorporate approved deciduous trees to provide shade on the south- and west-facing sides of buildings.

Implementation of these mitigation measures would reduce impacts to regional ozone and particulate matter concentrations, but the impacts would remain significant and unavoidable.

Impact E.3. Motor vehicle emissions would locally contribute to elevated concentrations of carbon monoxide. (Less than Significant)

Project-related traffic would cause or contribute to existing traffic on local roadways, which could result in locally elevated concentrations of CO. During stagnant weather conditions where there are large volumes of slow-moving traffic, such as congested intersections, the CO concentrations

can build up, creating a localized "hot spots." The traffic analysis indicated the intersections affected by the proposed project would operate at LOS C or better with the mitigation measures proposed. Operation at a LOS of C or better indicates that traffic is moving efficiently without the type of congestion that can result in CO "hot spots." Therefore, implementation of the proposed project would not contribute significantly to locally elevated concentrations of CO.

Mitigation Measure. No mitigation necessary.

Impact E.4. Emissions during project operation would cause sensitive receptors to be exposed to TACs. (Less than Significant)

The proposed commercial and residential land uses within the project would not generate substantial TAC emissions that would adversely affect nearby sensitive receptors. No stationary source of TACs within a two-mile radius of the project center has been found to emit TACs as a level that represents an unacceptable increased health risk to the general public. TACs from sources at greater distances would be expected to disperse to below levels of concern prior to reaching the project site. A commercial/office/light industrial area is planned for the western edge of the site to buffer the residential areas from the emissions from diesel fuel trains and vehicle emission from State Highway 33. Since implementation of the project would not cause or increase sensitive receptors' exposure to TACs, this is a less-than-significant impact.

Mitigation Measure. No mitigation necessary.

Impact E.5. Emissions of objectionable odors could occur during project operation. (Less than Significant)

The proposed commercial and residential land uses within the project would not generate objectionable odors during routine operation. Types of facilities identified by the District as likely sources of nuisance odors include the following: wastewater treatment facilities; sanitary landfills; composting facilities; petroleum refinery; asphalt batch plant; chemical manufacturing plant; fiberglass manufacturing plant; painting/coating operations; food processing facilities; feed lots/dairies; and rendering plants. None of these types of facilities are located within a mile of the project site. This is a less-than-significant impact.

Mitigation Measure. No mitigation necessary.

CUMULATIVE IMPACTS

Impact E.6. The project would cause a cumulatively considerable net increase of pollutants for which the San Joaquin Valley is designated as nonattainment. (Significant and Unavoidable)

On-going population and employment growth in the San Joaquin Valley, when combined with the proposed project would cumulatively increase mobile source activity and associated regional emissions of ROG, NO_x, and PM_{10}. Emissions from the project would occur during construction phases but would be short-term. Even with full mitigation (as described in Impact E.1), the net increase of construction-related emissions would be cumulatively considerable, resulting in a net increase of PM_{10} or ozone precursors. It should be noted that compliance with the District's suggested construction-related mitigation measures is considered sufficient mitigation for construction-related emissions. The operational phase of the proposed project would contribute to the regional violations of the ozone and PM_{10} standards (as described in Impact E.2). Because all sources in the region also contribute to these impacts, any individual project impact would also be cumulatively considerable, and the project's cumulative impacts to the region's ability to attain the ozone and PM_{10} standards would be significant.

Mitigation Measure E.6

See Mitigation Measures E.2a and E.2b. With implementation of these measures, significant cumulative impacts would be reduced but not to less-than-significant levels.

Impact E.7. The proposed project, including annexation of the proposed parcels to the City of Patterson, could conflict with or obstruct implementation of the District's ozone and PM_{10} attainment plans. (Less than Significant with Mitigation)

The proposed project includes annexing parcels to the City of Patterson and changing the land use designations to accommodate the development of the land for mixed-use residential. Reviewing the consistency of these changes with the regionwide ozone and PM_{10} Attainment Demonstration Plans provides an analysis of program-level impacts in a cumulative context.

The District plans for attainment of the ambient air quality standards rely, in part, on projections for growth in the region. Growth projections are based on land use designations in various General Plans. Growth that exceeds these projections could possibly conflict with the District planning strategy. The ozone and PM_{10} Attainment Demonstration Plans therefore evolved to reflect the changing projections for growth in the San Joaquin Valley. Because development on the project site would result in a population increase that is within the planned capacity of the City at full buildout, and is within the population projections used by the District in the attainment plans, the proposed project would be consistent with the District attainment plans.

The project's significant air quality impacts would mainly be from mobile source activity (traffic), i.e., vehicle trips associated with residents and commercial enterprises. Although some of the project's individual impacts may be off-set by reduced mobile source emissions elsewhere in the region, the impact of project emissions would remain cumulatively significant.

This impact is designated as significant because project-related emissions could significantly contribute to on-going and cumulative violations of ozone and PM_{10} standards (as described in Impact E.2) unless mitigation measures are implemented. Emission increases caused by the project in combination with other development in the region could delay the region's progress in attaining the ozone and PM_{10} standards. Thus, despite achieving consistency with the attainment plans, project-related emissions could obstruct implementation of the attainment plans, causing a significant cumulative impact, unless mitigated.

Mitigation Measure E.7

Participation in the Indirect Source Review program would either reduce the emissions from the project in line with the District's projections or fund off-site emission reduction programs, reducing this impact to a less-than-significant level.

F. NOISE

This section addresses the environmental noise impacts associated with the Villages of Patterson project. The Setting discussion describes the background sound levels and presents a summary of the project's acoustical criteria. The impact analysis section compares noise from the proposed project to the surrounding land uses and impinging noise. Mitigation measures are specified where necessary.

SETTING

NOISE FUNDAMENTALS

Three dimensions of environmental noise are important in determining subjective response:

- The intensity or level of the sound;
- The frequency spectrum of the sound;
- The time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in a logarithmic scale with the unit of decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing.

The logarithmic decibel scale allows an extremely wide range of acoustic energy to be characterized in a manageable numeric notation. For example, a doubling of noise energy is correlated to a 3 decibel (dB) increase in noise levels.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or hertz (Hz). Most of the sounds that we hear in the environment do not consist of a single frequency but of a broad band of frequencies, differing in level. The name of the frequency and level content of a sound is its "sound spectrum." A sound spectrum for engineering purposes is typically described in terms of octave bands, which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

There are many rating methods to compare sounds with different spectra. The simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively de-emphasizes the importance of frequency components below 1000 Hz and above 5000 Hz. This frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and at extreme high frequencies relative to the mid-range.

The weighting system described above is called "A"-weighting, and the level so measured is called the "A-weighted sound level" or "A-weighted noise level." The unit of A-weighted sound level is sometimes abbreviated "dBA." Typical sound levels found in the environment and in industry include a jet takeoff (at a distance of 200 feet), 120 dBA; a piledriver (at a distance of 50 feet), 100 dBA; an off-highway vehicle (at a distance of 50 feet), 80 dBA; speech (at a distance of one foot), 55 dBA; typical minimum nighttime levels in residential areas, 35 dBA; and a soft whisper (at a distance of five feet), 25 dBA.

Although a single sound level value may adequately describe environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise is a conglomeration of distant noise sources, which results in a relatively steady background noise having no identifiable source. These distant sources may include traffic, wind in trees, industrial activities, etc. and are relatively constant from moment to moment. As natural forces change or as human activity follows its daily cycle, the sound level may vary slowly from hour to hour. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities such as single vehicle pass-bys, aircraft flyovers, etc. which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, statistical noise descriptors were developed. "L_{10}" is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L_{10} is considered a good measure of the maximum sound levels caused by discrete noise events. "L_{50}" is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period; it represents the median sound level. The "L_{90}" is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period and is used to describe the background noise.

As it is often cumbersome to quantify the noise environment with a set of statistical descriptors, a single number called the average sound level or "L_{eq}" is now widely used. The L_{eq} is the average A-weighted sound level in a stated time period. The L_{eq} is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the different response of people to daytime and nighttime noise. During the nighttime, exterior background noise levels are generally lower than in the daytime; however, most household noise also decreases at night, and exterior noise intrusions become noticeable. Further, most people trying to sleep at night are more sensitive to noise. To account for human sensitivity to nighttime noise levels, a special descriptor was developed. The descriptor is called the L_{dn} (Day/Night Average Sound Level), which represents the 24-hour average sound level with a penalty for noise

occurring at night. The L_{dn} computation divides the 24-hour day into two periods: daytime (7:00 a.m. to 10:00 p.m.); and nighttime (10:00 p.m. to 7:00 a.m.). The nighttime sound levels are assigned a 10 dB penalty prior to averaging with daytime hourly sound levels. Similar to L_{dn} is a descriptor referred to as CNEL (Community Noise Equivalent Level). The CNEL is computed in much the same fashion as L_{dn} with the addition of a 5 dB penalty during evening hours (7:00 p.m. to 10:00 p.m.). Typically, this additional penalty results in an increase of less than 1 dB when compared to the L_{dn}. As discussed in further detail below, except in carefully controlled laboratory experiments, a change of only 1 dB in sound level cannot be perceived.

The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning;
- Physiological effects such as startle and hearing loss.

The sound levels associated with environmental noise usually produce effects only in the first two categories. There has never been a completely predictable measure for the subjective effects of noise nor of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over time. Thus, an important factor in assessing subjective reactions is to compare the new noise environment to the existing noise environment. In general, the more a new noise exceeds the existing noise levels, the less acceptable the new noise will be judged.

Noise levels diminish (or attenuate) as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured. Sound from a point source, such as a single piece of construction equipment, attenuates at a rate of 6 dB per doubling of distance. Ideally, heavily traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly 3 dB per doubling of distance. However, in reality, traffic sources are not infinitely long and do contain gaps between vehicles. Studies show that in practice, an attenuation rate of 4.5 dB per doubling is typical.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

Except in carefully controlled laboratory experiments, a change of only 1 dB in sound level cannot be perceived. Outside of the laboratory, a 3 dB change is considered a just-noticeable difference. A change in level of at least 5 dB is required before any noticeable change in community response would be expected. A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse community response.

EXISTING NOISE CONDITIONS

The existing noise environment at and adjacent to the project site generally comprises transportation on adjacent local roadways, agricultural and residential land uses, and a few stationary (e.g., commercial/industrial rooftop mechanical equipment) sources. Rail activities (approximately one freight train per day) along the California Northern Railroad along the western[1] border of the project site also contribute to the noise environment.

Roadways on the site boundary generate noise from rural or suburban traffic accessing the downtown portion of Patterson, State Highway 33 (SR 33) bordering the western side of the project site, and Interstate 5 approximately three miles west of the project site. Roads bordering and in the project site (i.e., North 1st Street, SR 33, Eucalyptus Avenue, Sycamore Avenue, Walnut Avenue, and Olive Avenue) may have occasional fast-moving vehicles, but they are not heavily traveled at night and cause only moderate daily levels of existing noise.

The California Northern Railroad runs along the western edge of the project site. The approximately one daily train exclusively carries freight. Typical noise associated with rail operations includes wheel-track noise, engine noise, and horns sounding near at-grade crossings. However, due to the infrequency of the rail operations along this section of the California Northern Railroad, noise associated with the train would not contribute significantly to ambient noise levels at the project site.

Although there are no major industrial operations or fixed equipment within the project area, certain surrounding uses at times cause perceptible, intermittent noise. Specifically, adjacent commercial and industrial land uses consist of printing, automotive, self-storage, and a vinyl fence manufacturer.

Ongoing agricultural operations on properties throughout the project area occur periodically and seasonally and they vary depending on how the land is used. For any of the agricultural properties, farming equipment, pumps, trucks, or cropdusters may occasionally cause elevated noise levels during certain operations.

[1] For the purpose of this analysis, it is assumed that the California Northern Railroad runs along "project" north-south.

Noise Sensitive Areas

Some activities and land uses are more sensitive to noise than others. The City's Noise Element identifies various land use types that are considered noise-sensitive. These include residences, schools, health care services, churches, public assembly facilities, libraries, museums, hotels and motels, outdoor recreation areas, and offices. The project itself would also introduce the presence of noise sensitive receptors to the site.

REGULATORY FRAMEWORK

Under the Noise Control Act of 1972, the U.S. EPA is responsible for developing regulations that adequately control environmental noise such that it does not endanger the population's health and welfare. The EPA established the Office of Noise Abatement and Control, but funding for the office was removed in 1981. Similarly, the California Department of Health Services (DHS) once operated an Office of Noise Control that has since been disbanded. As such, environmental noise protection is mainly a local government responsibility. The City of Patterson would be responsible for noise regulations and monitoring in the project area.

Governor's Office of Planning and Research

The State Governor's Office of Planning and Research (OPR) encourages each local jurisdiction to use its guidelines (based on guidelines developed by the DHS before its Office of Noise Control was closed) for evaluating the compatibility of various land uses as a function of community noise exposure.[2] The guidelines indicate that no special noise insulation is necessary for residential land uses in areas where exterior ambient noise levels do not exceed an L_{dn} of approximately 60 dB. If a residential area experiences an L_{dn} between 60 dB and 70 dB, the noise would be conditionally acceptable, assuming that conventional construction of the homes provides some level of noise insulation. On the other hand, residential uses should generally be discouraged in areas where noise levels are above an L_{dn} of 70 dB.

State of California, Noise Insulation Standards

The State of California Noise Insulation Standards (Title 24, Part 2, California Code of Regulations) requires that the interior noise level in a multi-family residential dwelling unit due to exterior noise not exceed an L_{dn} of 45 dB. Units requiring windows to be closed to achieve the interior noise standard will also need an alternative method of providing fresh air in accordance with the State Building Code (UBC Appendix Chapter 12, Section 1208A.8.5 Compliance). This ventilation system must not compromise the noise reduction of the exterior facade. Appendix

[2] State of California, Governor's Office of Planning and Research, *General Plan Guidelines*, Appendix A: Noise Element Guidelines, November 1998.

Chapter 12, Section 1208 also has requirements for sound insulation between units in a multi-family building.

City of Patterson, Municipal Code

The Municipal Code of the City of Patterson contains provisions that pertain to noise impacts of development. Among the most relevant to the proposed project are the following:

- *6.44.090 Construction of Buildings and Projects:* It shall be unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile drive, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other construction type device between the hours of 10 p.m. of one day and 7 a.m. of the next day in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a special permit authorizing exception to the above hours has been duly obtained from the officer or body of the city having the function to issue permits of this kind. No permit shall be required to perform emergency work as defined in Section 6.44.020 of this chapter.
- *18.52.140 (K) Property Development Standards in the Light Industrial District:* No operation shall be conducted on any premises in such a manner as to cause an unreasonable amount of *noise*, odor, dust, smoke, vibration or electrical interference detectable off-site.

City of Patterson, General Plan Policies

The City of Patterson Noise Element of the General Plan includes Goal VII.E: "To protect city residents from the harmful and undesirable effects of excessive noise." In addition, it contains the following policies related to the project:

- *Policy VII.E.1:* New development of noise-sensitive uses shall not be allowed where the noise levels due to non-transportation noise sources will exceed the noise levels standards of Table II-[1] (reproduced, in pertinent part, as **Table III.F-1**, below), as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in [that table].
- *Policy VII.E.2:* Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table II-1 (reproduced as **Table III.F-1**, below) as measured immediately within the property line of lands designated for noise-sensitive uses. This policy does not apply to noise sources associated with agricultural operations on lands zoned for agricultural uses.
- *Policy VII.E.3:* Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table II-1 (reproduced as **Table III.F-1**, below) at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. (Requirements for the content of an acoustical analysis are identified

in Table II-2) (reproduced as **Table III.F-2**, below). (Note: For the purpose of these noise policies, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations, such as a noise control ordinance.)

- *Policy VII.E.4:* The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure II-1 (reproduced as **Table III.F-4,** below**)**

- *Policy VII.E.5:* New development of noise-sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table II-3 (reproduced as **Table III.F-3**, below) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table II-1 (reproduced as **Table III.F-1**, below).
- *Policy VII.E.6:* Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table II-1 (reproduced as **Table III.F-1**, below) at outdoor activity areas or interior spaces of existing noise-sensitive land uses in either the incorporated or unincorporated areas.
- *Policy VII.E.7:* Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table II-1(reproduced as **Table III.F-1,** below) or the performance standards of Table II-3 (reproduced as **Table III.F-3,** below), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.
- *Policy VII.E.8:* Where noise mitigation measures are required to achieve the standards of Tables II-1 and II-3 (reproduced below as **Table III.F-1** and **Table III.F-3**, respectively), the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall only be considered a supplemental means of achieving the noise standards after all practical design-related noise mitigation measures have been integrated into the project.

Table III.F-1: Noise Level Performance Standards for New Projects Affected by or Including Non-transportation Sources

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Leq, dB	50	45
Maximum Level, dB	70	65

Notes:
Each of the noise levels specified above shall be lowered by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

Source: Patterson General Plan, Noise Element, Table II-1.

Table III.F-2: Requirements for an Acoustical Analysis

An acoustical analysis prepared pursuant to the noise policies of the General Plan shall:

A. Be the responsibility of the applicant.

B. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.

D. Estimate existing and projected (20 years) noise levels in terms of L_{dn} or CNEL and/or the standards of Table II-3, and compare those levels to the adopted policies of the Noise Element.

E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the noise section of the General Plan. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

F. Estimate noise exposure after the prescribed mitigation measures have been implemented.

G. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

Source: Patterson General Plan, Noise Element, Table II-2.

Table III.F-3: Maximum Allowable Noise Exposure – Transportation Sources

Land Use (L_{dn}, CNEL, Leq[2])	Outdoor Activity Areas[1]	Interior Spaces
Residential	60[3]	45
Office Buildings	60[3]	45
Schools	---	45
Parks	70	---

Notes:
[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
[2] As determined for a typical worst-case hour during periods of use.
[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB (L_{dn}/CNEL) or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB (L_{dn}/CNEL) may be allowed, provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: Patterson General Plan, Noise Element, Table II-3.

Table III.F-4: Land Use Noise Compatibility Guidelines for Development

Land Use Category	Community Noise Exposure – L_{dn} or CNEL (dB)			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Residential	Less than 60	60 to 70	70 to 75	Greater than 75
Schools	Less than 60	60 to 70	70 to 80	Greater than 80
Parks	Less than 70	---	70 to 75	Greater than 75
Office Buildings, Business Commercial and Professional	Less than 67	67 to 77	Greater than 75	---
Industrial, Agriculture	Less than 70	70 to 80	Greater than 80	---

Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: Patterson General Plan, Noise Element, Figure II-1.

PROPOSED VILLAGES OF PATTERSON DEVELOPMENT STANDARDS

If approved, the following proposed Villages of Patterson noise-related guidelines would be incorporated in the project's design:

Villages of Patterson Design Guidelines

Low Density Residential – Utility and mechanical equipment should be screened from view. Roof mounted air conditioners, coolers, or antennas are prohibited.

Medium Density Residential – Utility and mechanical equipment should be screened from view. Roof mounted air conditioners, coolers, or antennas are to be screened.

Commercial – Rooftop mechanical equipment, vents, and ducts are to be screened from view. Screens may consist of suitable material chosen for conformance with overall building design. Architectural integration of mechanical equipment is encouraged. Off-street parking shall be internalized (behind buildings), compartmentalized, and be shielded from residential and open space corridors.

Light Industrial – All rooftop equipment shall be screened from view by materials compatible with those of the building. The light industrial area located within The Villages of Patterson shall have a minimum distance of 75 feet from residentially zoned areas.

Schools – Landscape buffers should be used to separate potentially conflicting uses within the school grounds and surrounding residential and open space areas.

Public/Quasi-Public – Off-street parking shall be internalized (behind buildings) and shielded from residential uses.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The project would have a significant environmental effect if it would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

For the purposes of this analysis, a significant impact is considered to be a permanent increase in the noise level of at least 5 dB compared to existing conditions, in conjunction with an exceedance of applicable general plan standards.

METHODOLOGY AND ASSUMPTIONS

The major categories of noise sources that must be analyzed are construction noise, transportation and traffic-related noise, and noise from stationary or operational sources associated with commercial land uses. The major categories of noise sensitive receptors that must be analyzed are residential, commercial, educational, recreational (neighborhood park), and agricultural land uses.

Construction noise would be widespread at times and highly variable depending on the level of activity and the orientation of the activity with nearby sensitive receptors. In general, most construction equipment (e.g., heavy trucks, backhoes, graders) causes intermittent noise during daytime hours and does not substantially increase the L_{dn}. Although the City of Patterson regulates only the times of construction activities and not the noise levels, more specific noise levels are listed for planning purposes in **Table III.F-5**, below.

Receptors likely to be disturbed by construction noise are identified and measures that could be used to minimize the impacts are proposed. The compatibility of existing and future sensitive noise receptors with project-related and cumulative development is addressed by reviewing traffic noise and other project-related noise. New sensitive receptors in the Villages of Patterson could be adversely affected by the existing noise sources that are identified above.

Future traffic noise levels are characterized with contours that show how noise levels change with distance from the roadway. The change in noise levels that would be caused by traffic is quantified, based on the Federal Highway Administration's Highway Traffic Noise Prediction Model FHWA-RD-77-108. The model uses traffic volume, vehicle speed, truck percentage, distance to receiver, and a presumed attenuation rate to estimate the L_{eq} at a specified setback distance. For the purpose of this analysis, it is assumed that vehicle noise attenuates at a rate of 4.5 dB per doubling of distance, and that the L_{dn} is equal to the peak hour L_{eq}. Truck percentages along local roadways are assumed to be less than 1 percent. The analyzed truck percentage along SR 33 is 9.5 percent.[3]

Significant noise increases are defined to be those that would cause a recognizable change (i.e., an increase of at least 5 dB above the existing noise level), in conjunction with an exceedance of the general plan standards for nearby land uses. If significant noise increases would occur at residences already exposed to unacceptable noise levels, then the analysis identifies measures to reduce the project-related noise. If future-plus-project noise levels would be incompatible with surrounding land uses anticipated with the project, then the analysis identifies features that could be incorporated with proposed development to reduce the impact.

[3] State of California Department of Transportation, *2002 Annual Average Daily Truck Traffic on the California State Highway System*, March 2004.

Table III.F-5: Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA) at 50-feet	Noise Level (dBA) at 50-feet with Feasible Noise Control
Earthmoving		
Front Loader	79	75
Backhoe	85	75
Dozer	80	75
Tractor	80	75
Scraper	88	80
Grader	85	75
Paver	89	80
Materials Handling		
Concrete Mixer	85	75
Concrete Pump	82	75
Crane	83	75
Stationary		
Pump	76	75
Generator	78	75
Impact		
Pile Driver	101	95
Jack Hammer	88	75
Rock Drill	98	80
Pneumatic Tools	86	80
Other		
Saw	78	75
Vibrator	76	75

Source: EPA, *"Noise From Construction Equipment and Operations, Building Equipment, and Home Appliances."* NTID 300.1, EPA, December 1971.

PROJECT IMPACTS AND MITIGATION

Impact F.1. Project-related construction could cause a substantial, though intermittent and short-term, increase in noise levels. (Less than Significant with Mitigation)

Completion of construction activities would include use of heavy equipment, for grading and other activities, through completion of buildings and landscaping. Heavy trucks would travel to and from and within the development areas to move earthwork, equipment, and building materials. Smaller equipment, such as jack hammers, pneumatic tools, and saws could also be used throughout the construction phases. The noise associated with these activities would be generated within the entire Villages of Patterson project area and at off-site locations near any infrastructure improvements.

Existing residences and other sensitive receptors located adjacent to the project site with direct line-of-sight to construction activities and construction traffic would be affected along with new residences as they are developed within the project. Utility improvements (e.g., water, gas, electrical, etc.) and widening of roadways bordering the project site would also affect these residences. Residences at increased setback distances from the roadways bordering the project site would be buffered and shielded from construction activities by buildings closer to the roadways, and thus would not be significantly impacted by these construction activities.

For any one receptor location or residence, construction noise would be an intermittent impact extending only for the short term, corresponding with the development schedule for nearby project components. Construction equipment would be sufficiently distant from most noise-sensitive locations for the majority of the work because of the size of the development parcels. For example, existing residences located south of Walnut Avenue would be buffered by distance from construction activities on the interior portions of the project site.

Because most construction equipment causes intermittent noise levels up to 89 dBA at a distance of 50 feet (the project would not involve pile driving or rock blasting), any noise-sensitive locations that would be in close proximity to project-related construction noise could experience a recognizable noise increase (e.g., the Central California Child Development Services Center, on the south side of Walnut Avenue at Eureka Street.) Therefore, although temporary, noise-generating activities over the long-term construction period could cause a significant impact without implementation of reasonable measures to manage construction activities.

Mitigation Measure F.1

Construction-related activities shall be conducted in accordance with the following:

- Construction activities shall be restricted to the hours between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 9:00 a.m. and 7:00 p.m. on Saturday, with no construction on Sundays or federal and state holidays; minor construction equipment servicing and maintenance will be exempted from this restriction.
- During construction, mufflers shall be provided for all heavy construction equipment and all stationary noise sources in accordance with the manufacturers' recommendations.
- Stationary noise sources and staging areas shall be located as far as is feasible from existing residences, or contractors shall be required to provide additional noise-reducing engine enclosures (with the goal of achieving approximately 10 dBA of reduction compared to uncontrolled engines).
- Air compressors and pneumatic equipment should be equipped with mufflers, and impact tools should be equipped with shrouds or shields (with the goal of achieving the noise levels "…with feasible noise control" listed in Table III.F-5).
- If for construction purposes, locating stationary construction equipment near existing residential uses is required, an eight-foot-tall sound rated fence should be erected between the equipment and the sensitive receptor. The fence should be located as close to the equipment as is feasible.
- Construction vehicle access routes shall be designed to minimize the impact on existing residences and occupied hospital facilities.
- A "construction liaison" shall be designated to ensure coordination between construction staff and neighbors to minimize disruptions due to construction noise. Occupants and property owners of residences within 400 feet of construction activity shall be notified in writing of the construction schedule and the contact information for the construction liaison.
- A qualified acoustical engineer should be retained during the construction phase of the project to determine if the noise levels generated from construction equipment at the project site to adjacent property lines are within the standards.

Implementation of this mitigation measure would reduce the impacts from construction noise at the project site to a less-than-significant level.

Impact F.2. Increased traffic could cause substantial noise increases for existing sensitive receptors in the project vicinity. (Less than Significant)

Background growth in traffic volumes would result in increased noise levels regardless of whether or not the Villages of Patterson project is approved and the site is developed. Traffic generated by the proposed project would contribute to these increased noise levels, resulting in a gradual change from the existing, rural noise environment to one that would seem more urban.

Existing residences in the project vicinity would experience gradually increased traffic noise with background growth, and additional increases in traffic noise as the project proceeds.

The analysis of traffic-generated changes in noise levels summarizes the conditions anticipated for Existing Plus Approved Projects and future (year 2030) scenarios with the project, along with the related baseline conditions. The scenarios studied coincide with the traffic analysis,[4] and reflect transportation system, roadway segment, and local intersection improvements.

Locations in the vicinity of the project site will experience increases in ambient noise levels with increased traffic volumes, due to future growth without the proposed project. These scenarios – Existing Plus Approved Projects and Future 2030, provide future baselines against which to measure impacts of the proposed Villages of Patterson project. The existing and year 2030 future baseline noise levels along roadway segments in and around the project area are presented in **Table III.F-6** and **Table III.F-7**, both without and with noise from project-generated traffic.

Table III.F-6: Traffic Noise Levels along Roadways Segments for Existing + Approved Projects (EPAP) versus EPAP + Villages of Patterson Project (L_{dn} at 50 feet from roadway centerline)

	Existing + Approved Projects Baseline	Existing + Approved Projects Baseline + Project	Change with Project
Eucalyptus Avenue (between SR 33 and Sycamore Avenue)	52 dB	56 dB	+4 dB
SR 33 (between Eucalyptus Avenue and Olive Avenue)	69 dB	71 dB	+2 dB
SR 33 (between Olive Avenue and Walnut Avenue)	67 dB	69 dB	+2 dB
Walnut Avenue (near SR 33)	56 dB	58 dB	+2 dB
Walnut Avenue (near Sycamore Avenue)	50 dB	52 dB	+2 dB
Sycamore Avenue (between Walnut Avenue and Olive Avenue)	53 dB	55 dB	+2 dB
Sycamore Avenue (between Olive Avenue and Eucalyptus Avenue)	54 dB	53 dB	-1 dB

Source: Charles M. Salter Associates, Inc. 2006.

[4] TJKM Traffic Consultants, *The Villages of Patterson EIR Traffic Study*, July 2006.

Table III.F-7: Traffic Noise Levels along Roadways Segments for 2030 Baseline versus 2030 + Villages of Patterson Project (L_{dn} at 50 feet from roadway centerline)

	Future 2030 Baseline	Future 2030 Baseline + Project	Change with Project
Eucalyptus Avenue (between SR 33 and Sycamore Avenue)	48 dB	57 dB	+9 dB
SR 33 (between Eucalyptus Avenue and Olive Avenue)	72 dB	72 dB	0 dB
SR 33 (between Olive Avenue and Walnut Avenue)	70 dB	70 dB	0 dB
Walnut Avenue (near SR 33)	55 dB	58 dB	+3 dB
Walnut Avenue (near Sycamore Avenue)	47 dB	52 dB	+5 dB
Sycamore Avenue (between Walnut Avenue and Olive Avenue)	54 dB	58 dB	+4 dB
Sycamore Avenue (between Olive Avenue and Eucalyptus Avenue)	54 dB	57 dB	+3 dB

Source: Charles M. Salter Associates, Inc., 2006.

As shown in the tables above, both the Existing Plus Approved Projects Plus Project and the Future 2030 Baseline Plus Project scenarios show noise levels within 50 feet of the centerlines of SR 33 that range from an L_{dn} of approximately 70 dB to 72 dB. The nearest existing commercial and industrial land uses to SR 33 are situated between the California Northern Railroad and North 1st Street approximately 150 feet from the SR 33 centerline. Under both Scenarios, noise levels at 150 feet of the centerlines of SR 33 with project-generated traffic would range from an L_{dn} of approximately 62 dB to 65 dB. A noise level less than an L_{dn} of 67 dB is considered "Normally Acceptable" for both industrial and commercial land uses; therefore future noise levels along SR 33 for existing land uses would not be significant.

As shown in the tables above, under both Existing Plus Approved Projects and Future 2030 Baseline scenarios, noise levels within 50 feet of the centerlines of Eucalyptus Avenue, Walnut Avenue, Olive Avenue, and Sycamore Avenue, with project-generated traffic would range from an L_{dn} of approximately 52 dB to 59 dB. Under the City's General Plan, noise levels less than an L_{dn} of 60 dB are considered to be "Normally Acceptable" for residential land uses. The increases in the future noise levels along Walnut Avenue and Eucalyptus Avenue due to project-generated

traffic would occur gradually over the next 20 years. The proposed project would not cause exceedances of the noise compatibility standards established by the City's General Plan. Therefore, although project-generated increases would be noticeable to residents, particularly along Eucalyptus Avenue (+9 dB) and Walnut Avenue (+5 dB), the proposed project would have a less-than-significant impact with respect to traffic noise.

Mitigation Measure. No mitigation necessary.

Impact F.3. Future traffic could cause substantial noise levels for sensitive receptors in the Villages of Patterson Plan Area. (Less than Significant)

New residences in the Villages of Patterson project constructed adjacent to existing or new roadways would be exposed to traffic noise. The changes in project traffic noise levels were calculated to determine whether future noise levels would still be compatible with the proposed land uses. **Table III.F-8** shows the Existing Plus Approved Projects Plus Project and Future 2030 Baseline Plus Project noise levels.

Table III.F-8: Traffic Noise Levels along Roadway Segments for Existing Plus Approved Project + Project Compared to Future 2030 Baseline + Project (L_{dn} at 50 feet from roadway centerline)

	Existing Plus Approved Projects + Project	Future 2030 Baseline + Project	Change with Project
Eucalyptus Avenue (between SR 33 and Sycamore Avenue)	56 dB	57 dB	+1 dB
SR 33 (between Eucalyptus Avenue and Olive Avenue)	71 dB	72 dB	+1 dB
SR 33 (between Olive Avenue and Walnut Avenue)	69 dB	70 dB	+1 dB
Walnut Avenue (near SR 33)	58 dB	58 dB	0 dB
Walnut Avenue (near Sycamore Avenue)	52 dB	52 dB	0 dB
Sycamore Avenue (between Walnut Avenue and Olive Avenue)	55 dB	58 dB	+3 dB
Sycamore Avenue (between Olive Avenue and Eucalyptus Avenue)	53 dB	57 dB	+4 dB

Source: Charles Salter Associates, Inc., 2006.

As shown in Table III.F-8, the Existing Plus Approved Projects Plus Project and Future 2030 Baseline Plus Project noise levels within 50 feet of the centerlines of SR 33 range from an L_{dn} of approximately 70 dB to 72 dB. The nearest proposed commercial/light industrial land uses to SR 33 are situated between the California Northern Railroad and North 1st Street approximately 150 feet from the SR 33 centerline. The nearest proposed residential land uses to SR 33 are situated just east of North 1st Street approximately 450 feet from the SR 33 centerline. EPAP plus project and 2030 plus project noise levels at 150 feet and 450 feet of the centerlines of SR 33 range from an L_{dn} of approximately 62 dB to 65 dB and 55 dB to 58 dB, respectively. Noise levels less than an L_{dn} of 67 dB and 60 dB are considered "Normally Acceptable" for commercial/light industrial and residential land uses, respectively. In addition, the change in noise level is calculated to be less than 5 dB. Therefore future noise levels along SR 33 would not be significant.

The proposed project includes a 6-foot sound wall at the perimeter of the project area, along various roadway segments of Eucalyptus Avenue, N. 1st Street, Walnut Avenue, Sycamore Avenue, and Olive Avenue. A 6-foot sound wall would provide a 5 dB noise reduction from vehicular traffic along these roadway segments at outdoor use area, and at ground floor levels of residences. Even without incorporation of the proposed sound walls, land uses adjacent to roadways on the interior and border of the project site are not expected to be exposed to noise levels greater than an L_{dn} of 60 dB or increase by 5 dB as a result of future traffic growth. In addition, due to setbacks and shielding from major roadways, the proposed school and park uses are not expected to be exposed to noise levels that exceed the "Normally Acceptable" level. Conventional construction generally provides 20 dB to 25 dB of noise reduction at interior spaces. This corresponds to interior noise levels between an L_{dn} of 30 dB and 38 dB for residential dwellings, and between an L_{dn} of 37 dB to 45 dB for commercial office spaces. These interior noise levels meet the City and State interior noise level standards and no mitigation would be required.

Mitigation Measure. No mitigation necessary.

Impact F.4. Light Industrial activities and truck loading operations could generate noise levels inconsistent with the City's noise compatibility goals. (Less than Significant with Mitigation)

Future stationary sources of noise associated with the proposed light industrial uses would include mechanical equipment; delivery vehicle, forklift, waste collection, and warehouse operations; vehicle parking areas; and possibly specialized equipment for use with the various businesses in the light industrial use area. The new stationary sources would have the potential to cause noise that would violate the standards set forth in Table III.F-1 or be incompatible with the surrounding uses. The orientation of the buildings within the light industrial use area has not yet been finalized, but could be planned so that noisier activities such as loading dock operations,

waste collection, and stationary mechanical equipment would be facing away from the adjacent residential land uses located to the east (i.e., toward the west).

Noise levels can vary greatly for components of stationary mechanical equipment. Examples include mechanical equipment for building heating, ventilation and cooling, and refrigeration equipment on commercial buildings. As specific building locations in the proposed light industrial area have not been established, and specific equipment has not been identified, noise impacts cannot be quantified. Noise from these sources could be incompatible with any residential land uses planned to be developed adjacent to these light industrial areas.

The use of emergency generators at some commercial land uses would generate mechanical noise that would also be subject to the City's noise standards listed in Table III.F-1. Generators are typically only used for emergency purposes and occasional testing (about once per month). Because of the infrequency of this use, generators would not result in significant noise impacts, although testing would be noticeable to nearby residents.

Noise from parking lot areas is typically a small percentage of the total vehicular traffic volume in the vicinity and would not significantly increase noise levels at these areas. Delivery truck engines can be shut off during loading and unloading procedures. Loading dock operations including the use of forklifts can be performed inside warehouse areas or shielded by local noise barriers. Therefore, proper design and location of loading dock operations could be reduced to a less-than-significant impact.

The Villages of Patterson Design Guidelines include provisions that would help to reduce the potential effect of mechanical equipment.[5] In general, commercial and residential mechanical equipment is to be shielded, which would provide some noise reduction. Industrial mechanical equipment is to be screened and located no closer than 75 feet from residential land uses. The additional setback distance would also reduce noise levels at noise sensitive residential receptors.

Because there is not sufficient information available about the orientation of proposed commercial buildings, their distances from residential uses, and the types of mechanical equipment proposed to be used on commercial and light industrial buildings, it is assumed that if not mitigated, noise from mechanical equipment could result in a significant environmental impact.

[5] William Hezmalhalch Architects Inc., *Villages of Paterson Preliminary and Final Development Plan*, Section 3.7, May 2006.

Mitigation Measure F.4

Each development that involves light industrial or commercial land uses that would include outdoor mechanical equipment shall carry out the following:

- Retain a qualified acoustical engineer to review the development project during the design phase, prior to approval of building permits.
- Submit a report to the City by the acoustical engineer that calculates the noise levels at the nearest residential property lines that would result from proposed mechanical equipment, determines whether noise levels would exceed the City's "Normally Acceptable" standards or those presented in Table III.F-1, and identifies means to reduce exterior noise levels to the standards, or explains why such reduction is infeasible.
- Noise reduction measures that must be considered by the acoustical engineer include:
  - use of acoustical silencers on inlet and discharge openings of mechanical equipment,
  - installation of parapets or enclosures with louvers or other barriers to shield noise,
  - orientation of equipment so that it faces away from sensitive receptors,
  - orientation or setback of buildings to increase distance from sensitive receptors.
- Other noise reduction measures that would accomplish the same or similar purposes should be included if applicable to the particular building proposed.

Impact F.5. Other sources of noise associated with the proposed project or in the vicinity of the proposed project could generate noise levels inconsistent with the City's noise compatibility goals. (Less than Significant)

Other sources of noise not attributable to roadway traffic or the proposed light industrial use within the Plan Area include the following:

- School: Children arriving and departing from classes, recess and lunchtime outdoor activities, after school and weekend programs and events;
- Park: Typical park activities such as sporting events, possible amplified music, and scheduled festivities;
- Infrastructure: Garbage pick-up, general landscaping;
- Rail operations: Train horns near at-grade crossings;
- Police and Fire station activities: Emergency sirens and horns;
- Adjacent agriculture: Farming equipment, pumps, trucks, etc.

Although not particular to a specific source of noise, as discussed in the "Regulatory Framework" section above, the State standard in Title 24 requires that interior noise levels not exceed an L_{dn} of 45 dB at night caused by exterior noise.

School activities are typically conducted during daytime hours and therefore would not generate a significant noise impact. In addition, the Villages of Patterson Design Guidelines call for

landscape buffers to be incorporated to separate potentially conflicting school and residential land uses. Scheduled outdoor school events with amplified music or speech would be expected to generate substantially increased noise levels. However, the City's noise ordinance 6.44.110-A.5 specifically exempts events sponsored by the Patterson School District from noise controls. While noise from outdoor school events would be noticeable, such events would occur on an intermittent basis and would be short term. Therefore, they would not result in a significant impact on nearby residences.

Park activities are also typically conducted during daytime hours and therefore, would not generate a significant noise impact. Scheduled outdoor park events with amplified music or speech would generate substantially increased noise levels. However, the City's noise ordinance 6.44.110-A.5 specifically exempts events in public places and parks, and those sponsored by the City from noise controls. As with school events, amplified music or speech in parks would occur on an intermittent basis and would be short term. Therefore, such park activities would not cause a significant increase in average noise levels in the vicinity of parks.

Garbage pick-up is typically performed weekly and is not expected to generate a significant noise impact. Yard maintenance activities can be controlled to "Daytime" noise levels and times as defined in the Table III.F-1. Therefore, there would be no significant impact from these activities.

Since the railway is located approximately 100 feet from the western edge of the project site, significant noise or ground-borne vibration impacts are not expected. The Federal Railroad Administration regulates the use of railroad horns at at-grade crossings and railroad horn noise is specifically exempted from local noise ordinances. The Federal Transit Administration (FTA) specifies a noise screening distance for commuter rail mainline operations of 750 feet from unobstructed residential land uses. The FTA also specifies a vibration screening distance for rapid rail transit and conventional commuter railroad operations of 200 feet from residential land uses and 120 feet from institutional land uses including schools and quiet offices.[6] However, the FTA does not provide screening distances for rail freight activities. Instead, the FTA provides goals for ground-borne vibration levels at various land uses. For sites exposed to "infrequent events" (less than 70 pass-bys per day), such as the Villages of Patterson project, the FTA proposes goals of 80 dB (re: 1 micro-inch per second) and 83 dB, or less, for residential and institutional (commercial/industrial) land uses, respectively. The nearest proposed commercial/light industrial and residential land uses are approximately 100 feet and 400 feet east of the California Northern Railroad, respectively. The FTA estimates that a locomotive-powered freight train traveling at 50 miles per hour would produce a vibration level of approximately 77

[6] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* April 1995.

dB at 100 feet and below 65 dB at 400 feet from the railway. These vibration levels meet the goals proposed by the FTA. Therefore, ground-borne vibrations level would not be significant.

Although specific single event noise level limits due to train operations are not specifically addressed by the City, horns used near at-grade crossing could produce noise levels up to approximately 105 dBA at the proposed commercial/light industrial land use areas, and up to approximately 90 dBA at the proposed residential land use area. However, due to the infrequency of rail operations along the California Northern Railroad (approximately one train per day), it is not expected that noise levels from use of the railroad would be significant.

The project proposes police and fire stations at the northwest corner of the North 1st Street and Olive Avenue intersection. In general, noise associated with these operations is not expected to be significant. No K-9 unit kennels or shooting ranges would be constructed as part of the proposed police and fire station. Emergency sirens can generate very high noise levels. However, the City's noise ordinance 6.44.110-A.5 specifically exempts emergency sirens from noise controls. Emergency sirens would occur on an intermittent basis and would be short in duration. Therefore, emergency sirens would not cause a significant increase in average noise levels in the vicinity of the proposed police and fire station.

Agricultural land uses at adjacent properties not within the project site may generate noise associated with farming activities. Such activities could include the use of farming-related mechanical equipment (e.g., tractors, pumps, trucks, etc.). Most farming activities occur during daytime hours and therefore are not expected to generate significant noise impacts on surrounding land uses at the project site. In addition, noise levels from proposed agricultural land uses are specifically exempted from the City's Noise Element under Policy VII.E.2.

The noise sources discussed above are familiar, accepted, and expected conditions of the residential noise environment of Patterson. Impacts associated with these would be less than significant.

Mitigation Measure. No mitigation necessary.

CUMULATIVE IMPACTS

Impact F.6. Cumulative development could lead to noise conflicts between incompatible land uses. (Less than Significant with Mitigation)

The proposed project would be part of other foreseeable development in the Patterson area that would alter the noise environment of Patterson by 2030. The mitigation measures identified for Impact F.1 (construction noise) and Impact F.4 (light industrial development) are relevant to

cumulative noise impacts. Implementation of these measures would reduce the project's contribution to cumulative noise impacts on sensitive land uses to a less-than-significant level.

An increase in traffic noise levels is expected to occur due to general growth and other approved projects, regardless of the development of the proposed project. The cumulative baseline therefore includes noise levels that would seem more urban compared to the existing, rural, noise environment. However, as discussed under Impact F.2, project-related traffic noise would not contribute to significant cumulative increases in future noise levels. The cumulative impact of project-related traffic noise on sensitive receptors would be less than significant.

Mitigation Measure F.6. Same as Mitigation Measures F.1 and F.4.

G. HAZARDOUS MATERIALS

The following section summarizes relevant laws and regulations applicable to development on the project site, describes existing conditions on the project site related to possible presence of hazardous materials,[1] and evaluates the potential public health impacts from exposure to hazardous materials that may be encountered during development of the proposed project. Potential hazardous materials impacts that would result from implementation of the proposed project, such as routine transport, use, or disposal of these materials, are described, and mitigation measures are identified, as appropriate.

SETTING

This section outlines the regulatory framework for hazardous materials and hazardous waste, including demolition of structures with hazardous building materials, state school siting provisions, and health and safety requirements for project site workers. The findings of the two Phase I Environmental Site Assessments (ESAs) prepared for the proposed project area are summarized. Patterson General Plan policies for hazardous materials identification and management, including investigation of sites with potential or known hazardous materials contamination and remediation, are also presented.

REGULATORY FRAMEWORK

Regulatory Agency Framework

Many laws and regulations at the federal, state, and local levels affect the management of hazardous materials. In California, the U.S. Environmental Protection Agency (U.S. EPA) has delegated most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). In turn, a local agency, the Stanislaus County Environmental Resources Department (SCERD), has been granted responsibility for implementation and enforcement of many hazardous materials regulations in Stanislaus County under the Certified Unified Program Agency (CUPA) Program (California Health and Safety Code Chapter 6.11).

[1] The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (California Health and Safety Code Section 25501).

In California, regional agencies are responsible for programs regulating emissions to the air, surface water, and groundwater. At the project site, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has oversight over air emissions, and the Central Valley Regional Water Quality Control Board (CVRWQCB) regulates discharges and releases to surface water and groundwater.

Oversight over investigation and remediation of sites affected by hazardous materials releases can be performed by state agencies, such as the Cal/EPA Department of Toxic Substances Control (DTSC); regional agencies, such as CVRWQCB; or local agencies, such as SCERD.

Lead, Asbestos, and Other Hazardous Building Materials Laws and Regulations

Prior to 1978, lead compounds were commonly used in exterior and interior paints. Lead is a suspected human carcinogen (i.e., causes cancer), and a known teratogen and reproductive toxin (i.e., causes birth defects and sterility). Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. They were frequently found in insulation, roofing, and siding, textured paint and patching compounds used on wall and ceiling joints, vinyl floor tiles and adhesives, and water and steam pipes, among other uses. Asbestos is a known human carcinogen. Demolition or renovation of structures constructed prior to 1980 has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air, which then may be inhaled by construction workers and the general public. In addition, other common items, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats can contain hazardous materials, which may pose a risk if not handled and disposed of properly.

Federal and state regulations govern the demolition of structures where lead or material containing lead is present. Regulations pertaining to demolition of structures with lead-based paint are promulgated by the U.S. EPA, DTSC, and the U.S. Department of Housing and Urban Development (HUD). For example, the U.S. EPA and DTSC require that lead-based paint equal to or greater than the HUD definition of lead-based paints (greater or equal to 1 milligram per square centimeter [mg/cm^2] or 0.5 percent lead by weight) be removed prior to demolition if the paint is loose and peeling. If the paint is securely adhering to the substrate, the entire material may be disposed of as demolition debris, which is a non-hazardous waste. Loose and peeling paint must be disposed of as a California and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds. Hazardous wastes must be appropriately managed, labeled, transported, and disposed of in accordance with local, state, and federal requirements by trained workers. State and federal construction worker health and safety regulations, described below, require air monitoring and other protective measures during demolition activities where lead-based paint is present.

Federal, state, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACM), including the demolition of structures where asbestos is present. These requirements are promulgated by the U.S. EPA, federal and state Office of Safety and Health Administration (OSHA), DTSC, and the SJVAPCD. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage must be abated prior to demolition in accordance with applicable requirements. Friable ACM must be disposed of as an asbestos waste at an approved facility. Non-friable ACM may be disposed of as non-hazardous waste at landfills that will accept such wastes. Workers conducting asbestos abatement must be trained in accordance with state and federal OSHA requirements, described below.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

State School Siting Provisions

Section 17210 et seq. and 17072.18 of the State Education Code and Sections 2115.2, 21151.4, and 21151.8 of the Public Resources Code[2] require that prospective school sites be reviewed to ensure that such sites are not a current or former hazardous waste disposal site, a hazardous substances release site, or the site of hazardous substances or pipelines. These laws require consultation with the local hazardous materials agencies and air quality districts to ensure that no sites within one-quarter mile of a school that handle or emit hazardous substances would potentially endanger future students or workers at the prospective school site. The identification of existing and proposed airports within two miles of the school site, location of high voltage power lines, high-pressure gas lines and oil wells, railroad tracks, major roadways, pipelines, and investigation of geological hazards are also required for proposed school sites.

State legislation enacted in 1999 through 2001 (SB 162, AB 387, AB 2644, and AB 972) added further school siting and public notification and review requirements to the Education Code. All school districts receiving state funds must prepare a Phase I Environmental Site Assessment (ESA) on prospective school sites. The Phase I ESA must detail the historical uses of the property and indicate any potential for contamination from hazardous materials releases or from naturally occurring hazardous materials. DTSC has issued guidance documents for supplemental

[2] The Public Resources Code sections are part of the California Environmental Quality Act (CEQA).

evaluation of former agricultural areas[3] and other potential hazardous materials concerns at school sites.[4,5]

DTSC must review the Phase I ESA for proposed school sites and will generally make one of the following findings: 1) that no further action is required; or 2) that concerns about contamination exist and the district must conduct a Preliminary Endangerment Assessment (PEA). The PEA entails site sampling and the development of a detailed risk assessment of any contaminants present on the proposed school property. The PEA is open to public review and comment. DTSC must review the PEA and make one of three determinations:

1) No further action is required.
2) The project may proceed straight to cleanup. This determination is possible for sites with relatively uncomplicated cleanup needs. A Removal Action Workplan is prepared and once approved by DTSC after a public comment period, the district can then undertake the cleanup work.
3) The project must go through a formal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly known as "Superfund") investigation and remediation process, as described above.

Some cleanup actions may require long-term operation and maintenance (O&M) where DTSC would provide oversight through an O&M agreement between DTSC and the school district. When all necessary investigation and cleanup activities haven been completed and approved, DTSC will issue a letter to the school district certifying that the cleanup has been completed.[6]

Worker Health and Safety

Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). Under this jurisdiction, workers at hazardous waste sites (or working with hazardous wastes as might be encountered during

[3] Department of Toxic Substances Control (DTSC), Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision): California Department of Toxic Substances Control, California Environmental Protection Agency, 26 August 2002. DTSC, Addendum to Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), Section 4.2 Chemicals of Potential Concern (COPC): Pesticides, California Department of Toxic Substances Control, California Environmental Protection Agency, 26 September 2003.
[4] DTSC, Draft Interim Guidance for Evaluating Lead-Based Paint and Asbestos-Containing Materials at Proposed School Sites, California Department of Toxic Substances Control, California Environmental Protection Agency, 23 July 2001.
[5] DTSC, Phase I Environmental Site Assessment Advisory: School Property Evaluations, Revised, California Department of Toxic Substances Control, California Environmental Protection Agency, 5 September 2001.
[6] DTSC, Fact Sheet #2, Update on Environmental Requirements for Proposed School Sites/Construction Projects, Assembly Bill 2644 Summary, California Department of Toxic Substances Control, California Environmental Protection Agency, February 2001.

excavation of contaminated soils) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (29 CFR 1910.120). Additional regulations have been developed for construction workers potentially exposed to lead (29 CFR 1926.62) and asbestos (29 CFR Part 1926.1101).

Worker health and safety in California is regulated by the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA). California standards for workers dealing with hazardous materials (including hazardous wastes) are contained in California Code of Regulations (CCR) Title 8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and hazardous waste operation and emergency response (CCR Title 8, Section 5192). Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

PROJECT SITE HAZARDOUS MATERIALS SETTING

The hazardous materials setting is based on two Phase I Environmental Site Assessments (ESAs) prepared for the project area. A Phase I ESA for the Villages of Patterson project[7] was prepared for the 56-parcel project site area, with the exception of Parcel 047-026-025, which is owned by the City of Patterson and used as a stormwater detention basin, and Parcels 047-031-017 and a portion of 047-031-016, which are owned by the Patterson Joint Unified School District and together are a proposed school site. A Phase I ESA for the two school district parcels is described separately below. No Phase I ESA was available for the City stormwater detention basin parcel.

Phase I Environmental Site Assessment, Villages of Patterson

The Phase I ESA for the Villages of Patterson project, prepared by Brown and Caldwell (2006), included a review of regulatory agency records, a site reconnaissance, interviews and communications with persons knowledgeable about the site, and preparation of a preliminary report. As part of the Brown and Caldwell Phase I ESA, title records, historical aerial photographs, topographic maps, fire insurance maps, and municipal, county, and state files were reviewed by the preparers.

Current and Historical Land Uses with Hazardous Materials

The project site area was historically used for agricultural production. The current primary land use is for commercial row crops (including oats and alfalfa) and commercial stone fruit orchards (primarily apricot). Other land uses within the project site area include rural residential

[7] Brown and Caldwell, Phase I Environmental Site Assessment for the Villages of Patterson Project, prepared for Terra Firma Entitlement Company, LLC, 17 April 2006 (hereafter "Brown and Caldwell, 2006."). This ESA is reproduced in this EIR in Appendix D.

developments and several commercial enterprises. Approximately 36 residential dwellings and numerous detached garages, barns, sheds, and other storage structures were identified during a site reconnaissance completed in support of the Brown and Caldwell Phase I ESA. These structures are not served by public water, sewer, or natural gas utilities, but rely on private wells and septic systems and private propane tanks.

Industrial and light commercial uses are present along the Union Pacific Railroad/Highway 33 corridor, immediately adjacent to the western project area boundary. Orchards and rural residences are located to the north and east of the project site area, while residential developments are located to the south. The Patterson Airport is more than two miles west of the project area.

Permitted Hazardous Materials Uses

Information on permitted materials data for the years 2000 through 2005 was provided for the Villages of Patterson project site area by the Stanislaus County Agricultural Commissioner's Office (SCACO). A variety of herbicides, insecticides, rodenticides, fungicides, adjuvants,[8] and other hazardous materials were permitted for use on various parcels. Records on possible use of pesticide and other hazardous materials before 2000 were not available from SCACO.

Other permitted hazardous materials uses within the Villages of Patterson project area[9] were identified as having a Hazardous Materials Business Plan or Hazardous Materials Farm Plan Inventory on file with SCERD, or were identified in other information sources. These included the following (type and quantity of hazardous materials and date reported in parentheses following the address):

- 524 Eucalyptus Avenue (two[10] 550-gallon underground storage tanks (USTs) containing gasoline; Hazardous Materials Inventory Certification, 2004);
- 260 Olive Avenue (300-gallon diesel container, 5 gallons of gasoline, 1 gallon Round-up herbicide, 1 gallon solvent; Hazardous Materials Farm Inventory, 1987);
- 261 Olive Avenue (300-gallon diesel aboveground storage (AST) tank, 200-gallon AST gasoline tank, 55-gallon drum of hydraulic oil, 55-gallon drum of motor oil, 300 pound sack of parathion; Hazardous Materials Business Plan, 1989 and 1995);
- 342 Olive Avenue (525-gallon gasoline UST[11]);

[8] Adjuvants are substances added to improve the effect of the material (herbicide, insecticide, etc.) applied.
[9] For hazardous materials operators identified outside the study area, the reader is referred to Brown and Caldwell, 2006, pp. 29-30.
[10] A third tank was identified in a separate Statewide Environmental Evaluation and Planning System (SWEEP) database reviewed. This underground storage tank list was updated and maintained until the early 1980s by a contractor to the State Water Resources Control Board. The listing is no longer updated or maintained; the local agency is the contact for information for sites on the SWEEPS list.
[11] Identified in SWEEPS database.

- 343 Olive Avenue (300-gallon AST, one oxygen cylinder, one 55-gallon waste oil drum; Farm Chemical Inventory Certification, 2001);[12]
- 513 Walnut Avenue (350-gallon gasoline UST; Hazardous Materials Farm Plan Inventory Certificate, 2003);
- 673 Walnut Avenue (no reportable quantities of hazardous materials).

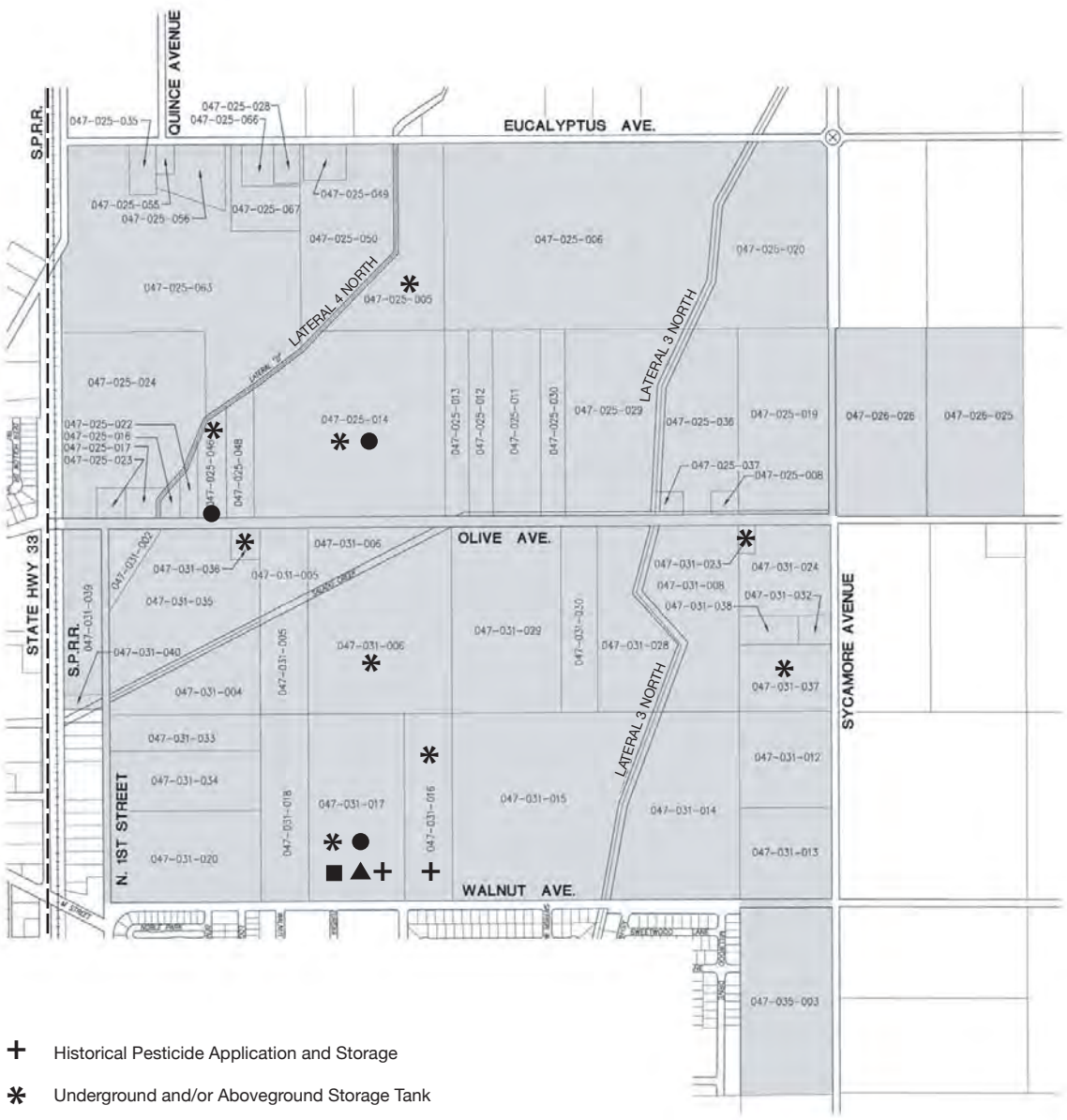
Recognized Environmental Conditions[13]

The Brown and Caldwell Phase I ESA identified three recognized environmental conditions that will require additional investigation and could result in regulatory agency oversight and remediation (see **Figure III.G-1: Potential Hazardous Materials Identified on the Project Site,** for the locations):

- The potential for soil contamination at the Standard/Chevron Old Valley Pipeline, located between the railroad lines and Highway 33, adjacent to the western boundary of the site (Figure III.G-1). The pipeline was operated from the early 1900s to 1960s to transport heated crude oil. In the vicinity of the project study area, the pipeline consisted of two 8-inch lines. Two pumping stations, Vanormer Pump Station, located approximately one-half mile north of the project site (see description of Petroleum Recycling Corporation Superfund site below for more details), and Emerald Pump Station, approximately one mile south of the project site were associated with this pipeline (Figure III.G-1). At least three cases of soil contamination related to this pipeline have been reported near the project area. Further investigation of possible petroleum-related soil contamination within the project study area parcels adjacent to the railroad right-of-way was recommended in the Brown and Caldwell Phase I ESA.
- The existence of ASTs and USTs. The Phase I ESA recommended that all ASTs and USTs be removed prior to grading or site development activities. Additional investigation may be required if releases from the ASTs and USTs are discovered during removal. The preparers of the Brown and Caldwell Phase I ESA identified nine specific properties within the project area with ASTs and USTs: 260, 261, 342, 343, and 900 Olive Avenue; 524 Eucalyptus Avenue; 513 Walnut Avenue; and 14701 Sycamore Avenue (see **Figure III.G-1**).

[12] An earlier inventory from 1985 listed one 500-gallon gasoline tank, one 500-gallon diesel tank, one 500-gallon propane tank, 2,000 pounds of Kocide cupric hydroxide, 120 pounds of parathion, 610 gallons of Super 94 oil, and 40 gallons of motor oil, Brown and Caldwell, 2006, p. 29.

[13] The term "recognized environmental condition" means the presence, or likely presence, of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of hazardous substances or petroleum products into structures on the property, or into the ground, groundwater, or surface waters of the property. The term is not intended to include de minimis conditions (described below) (ASTM, 2000, p. 6).



Note: the locations identified are only for the parcel and do not indicate any specific location within the parcel.

SOURCE: Natural Investigations Company, and Condor Earth Technologies

FIGURE III.G-1: POTENTIAL HAZARDOUS MATERIALS IDENTIFIED ON THE PROJECT SITE

- The likely presence of residual pesticides in pesticide-handling areas of farm operations and the potential for pesticide contamination of soil or groundwater. The preparers of the Brown and Caldwell Phase I ESA indicated that additional investigation might be warranted at APN 047-031-017 (farm complex at/adjacent to proposed school site, described in greater detail below); and at 261 and 343 Olive Avenue (see **Figure III.G-1**).

The report identified one historical recognized environmental condition,[14] which in the past would have been considered a recognized environmental condition, but which is not currently considered a recognized environmental condition.

- The Petroleum Recycling Corporation Superfund site, located at 13331 Highway 33, Patterson, approximately one-half mile northwest of the site. The U.S. EPA identified specific remedial actions to be completed at this site, including removal of one 5,000-gallon oil UST (now closed). A Superfund Removal Program Action conducted in 1999-2000 removed all aboveground containers from the site, including seven ASTs, drums, and roll-off bins. A leaking UST investigation on the property and on-going remedial activities are currently under the oversight of DTSC. This site was formerly Standard Oil Company's Vanormer Pump Station, one of the crude oil pump stations for the Old Valley Pipeline discussed above.

The report also identified the following de minimis[15] recognized environmental conditions, which are hazardous materials related issues unlikely to result in a significant remedial effort (based on the findings of the Brown and Caldwell Phase I ESA):

- The presence of refuse piles and structures that should be properly disposed of in the appropriate sanitary landfill.
- Historic and current registered use and storage of hazardous substances, petroleum products, and pesticides.
- The presence of potable water wells on numerous properties. If these wells were not capped, they could interfere with proposed grading and development activities.
- The presence of septic systems on numerous properties. If these septic systems are not removed, they could interfere with proposed grading and development activities.

[14] If a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated, where such remediation has accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an *historical recognized environmental condition* and included in the findings section of the Phase I Environmental Site Assessment report (ASTM, 2000, p. 6).

[15] De minimis environmental conditions are defined in the Phase I ESA as "conditions that are not believed to present a material risk of harm to public health or the environment and that generally would not be subject of an enforcement action if brought to the attention of appropriate governmental agencies." (ASTM, 2000, p. 1).

Phase I Environmental Site Assessment, Parcels APN 047-031-017 and APN 047-031-016, Patterson Joint Unified School District Site

A Phase I ESAwas prepared by Condor Earth Technologies in 2005, as part of a larger Geological and Environmental Hazards Assessment Report, Proposed East Side Middle School,[16] for most of APN 047-031-017 and a portion of APN 047-031-016, the parcels that were transferred to the Patterson Joint Unified School District for construction of a new school. The District has purchased these parcels as the location for a kindergarten through grade 8 school, with the ultimate plan to use the site for a middle school serving grades 6 through 8.[17] The Phase I ESA was prepared in accordance with ASTM Practice E 1527-00 (ASTM, 2000) and included additional information to comply with California Education Code and Public Resources Code requirements for new school sites. These requirements focus on investigation of the presence of identifiable hazardous materials and proximity of hazardous air emissions, high voltage power lines, pipelines, railroads, major roadways, and current and proposed airport runways, as described above.

Current and Historical Land Uses with Hazardous Materials

Both proposed school site parcels were identified in Stanislaus County Assessor's records as being used for apricot and tree orchards with a residential living unit. A site reconnaissance completed in support of the Condor Earth Technologies Phase I ESA indicated that these parcels were used for agricultural purposes and that APN 047-031-17 was planted with oats and APN 047-031-16 was planted with alfalfa. Adjacent properties at the time of the site reconnaissance were also observed to be used for agricultural purposes.

An asphalted driveway, a house, an old barn, an old outbuilding, an old tank house, and a well (domestic) were located in the southwestern corner of APN 047-031-017. A septic system was also reported by the owner on the west side of the house at APN 047-031-017. Due to the age of the buildings, the preparers of the Condor Earth Technologies Phase I ESA indicated that there is the possibility that lead-based paint and/or asbestos products are present within these structures. A metal pipe sticking out of the ground, approximately 3.5 inches in diameter and approximately 3 feet high, was also observed on the south side of the stairway to the front door at APN 047-031-017 during the site visit. The purpose for the pipe was not apparent to the preparers of the Condor Earth Technologies Phase I ESA; there is a possibility it could be related to a UST or other potential subsurface hazard at the property.

[16] Condor Earth Technologies, Geological and Environmental Hazards Assessment Report, Proposed Eastside Middle School Site, 361 Walnut Avenue (APN 047-031-016 and 047-031-017), Patterson, Stanislaus County, California, prepared for the Patterson Unified School District, 2005 (hereafter "Condor Earth Technologies, 2005"). This report is reproduced in this EIR in Appendix D.
[17] City of Patterson, Initial Study, Villages of Patterson Development Plan, 8 March 2006, p. 40.

Review of a 1916 topographic map indicated that a small structure, assumed to be a residence, was located on the southwestern portion of APN 047-031-017. A barn-shaped building was located northeast of the dwelling in the 1953 topographic map and an orchard was observed on the northeastern portion of this parcel in this map. Buildings, with the exception of the barn, were reportedly removed from APN 047-031-017 in April 2005.

The owners and occupants of the two properties indicated that there have been industrial drums or sacks of chemicals located on the property and that the agricultural chemicals beulate and diazione have been used on the property (APN 047-031-017).[18] In addition, the occupant of APN 047-031-017 indicated that ASTs were formerly located on that property.[19]

Permitted Hazardous Materials Uses

Permitted materials data information for the years 2002 and 2003 were provided for the two parcels by Stanislaus County Agricultural Comissioner's Office (SCACO). The following materials were permitted for use within the two parcels: Buctril 4 EC Herbicide, crop oil concentrate, Du Pont Lannate Insecticide, Gramoxone Extra Herbicide, Latron Ag-98, Rhomene MCPA Amine Herbicides, RNA Activator 85, RNA Tri-Ad 73, Source 1 No Foam B, and Warrior Insecticide with Zeon Technology. Records on pesticide and other hazardous materials used before 2002 were not available from the SCACO.

Other permitted hazardous materials uses for aboveground and underground hazardous materials storage were identified near the two school site parcels in SCERD files reviewed. No permitted hazardous materials uses were identified within the two parcels in the files reviewed. These off-site permitted hazardous materials uses included the following (type and quantity of hazardous materials and date reported in parentheses following the address):[20]

- 513 Walnut Avenue, southeast corner of parcel APN 047-031-016 (aboveground storage of gasoline; Hazardous Materials Farm Plan Inventory Certification form, 2003);
- 320 Second Street, 0.4 miles southwest of the two school site parcels (USTs for gasoline; Underground Storage Tank Permit and Application form, 2005, and Hazardous Materials Management Plans, 2004).

[18] Condor Earth Technologies, 2005, p. 13.
[19] Ibid.
[20] Condor Earth Technologies, 2005, p. 9.

Recognized Environmental Conditions

The following current recognized environmental conditions were identified in the Condor Environmental Technologies Phase I ESA for the proposed school site (see **Figure III.G-1** for the locations):

- Historical pesticide application and storage (since at least the 1950s), and likely residual contamination of agricultural chemicals (including pesticides) in soil at both parcels.
- Evidence of soil staining (and odors) at the south side of the barn and past petroleum hydrocarbons storage (gasoline and diesel ASTs) at the farm complex at APN 047-031-017. Due to the staining and former presence of ASTs in the farm complex observed during the site reconnaissance, petroleum hydrocarbons contaminated soils were reportedly as likely being present.
- Pesticide mixing and odors at the farm complex at APN 047-031-017. Odors were noticed at the farm complex area (barn) during the site visit and are likely present in soil.
- Possible lead contamination of soil surrounding the perimeter of the former farm complex buildings at APN 047-031-017.

As the recognized environmental conditions identified above are largely related to the former farm complex on the southwestern portion of APN 047-031-017, the preparers of the Condor Earth Technologies Phase I ESA recommended that that the Patterson Joint Unified School District revise the proposed school boundary to exclude this area. In addition, it was also recommended that a Preliminary Endangerment Assessment (PEA) be completed to evaluate pesticide concentrations in site soils for both parcels under the oversight of DTSC (the status of the PEA completed for the proposed school site parcels is described below).

The following de minimis conditions were reported in the Condor Earth Technologies Phase I ESA for the proposed school site:

- The need to properly abandon domestic water well and septic systems in accordance with SCERD procedures and recommendations prior to development at APN 047-031-017. (See Mitigation Measure I.5, in Section III.I, Hydrology and Water Quality, for a discussion of the proper procedures for well inspections, sealing, and abandonment.)
- Removal of refuse, including automotive tires, an old battery, and possibly a PCB-containing electrical transformer, gear oil and viscous liquid (5-gallon buckets) at APN 047-031-017, in accordance with local, state, and federal requirements.
- Determination of the function of a buried pipe near the house doorway at APN 047-031-017 prior to site development.
- Proper abandonment of an outhouse pit by the northeast corner of the barn at APN 047-031-017. An old outhouse toilet seat was observed in this location at the time of the site visit.

Preliminary Endangerment Assessment

A PEA[21] was submitted for the proposed school site to DTSC, which included a health risk screening evaluation for the site. The PEA reportedly evaluated organochlorine pesticides and metals data and reported that there were no detections that would pose a threat to human health and the environment. The preparers of the PEA therefore recommended no further action.[22]

Based on DTSC's review of the PEA, neither a release of hazardous material nor the presence of a naturally occurring hazardous material, which would pose a threat to public health or the environment under unrestricted land use, was indicated at the proposed school site. Therefore, DTSC concurred with the conclusion of the PEA that further environmental investigation of the site was not required and subsequently approved the PEA.[23]

LOCAL PLANS AND POLICIES

Patterson General Plan

The City of Patterson General Plan Policy Document (2004) contains the following Policy that is relevant to hazardous materials identification and management:

- *Policy VII.C.8:* In cooperation with the Stanislaus County Health Department, the City shall require testing for contamination in areas suspected as potentially hazardous and shall require that remediation of hazardous areas takes place prior to development.

IMPACTS AND MITIGATION

This section analyzes the impacts to public health and safety from encountering hazardous materials during development and operation of the proposed project. Significance criteria are defined, which establish the thresholds for determining whether a project impact is significant. Potential impacts from hazardous materials to public health and safety associated with the proposed project are then presented, with mitigation measures to reduce potential impacts to less-than-significant levels.

[21] Condor Earth Technologies, Draft Preliminary Endangerment Assessment (PEA) Report, 11 November 2005. The PEA was not available for review during the preparation of the hazardous materials impact analysis.
[22] Fair, Sharon, DTSC, Letter Re: Approval of Draft Preliminary Endangerment Assessment, Eastside Middle School Site, 361 Walnut Avenue, Patterson (Site Code 104484-11), to S. Menge, Patterson Unified School District, February 7, 2006.
[23] Ibid.

SIGNIFICANCE CRITERIA

A significant hazardous materials impact[24] would occur if the project would:

- Create a significant hazard to the public or the environment through exposure to hazardous materials present in soil, groundwater, and/or building materials as a result of historical or current land uses in the project vicinity.
- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or wastes within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact G.1. Site grading and development activities could result in releases of contaminants from soils or groundwater that may affect the health and safety of construction workers, future site users, and the general public. (Less than Significant with Mitigation)

Residual pesticides may be present in soil and/or groundwater in the entire proposed project area. The proposed project area is currently and was historically used for agricultural pesticide application and storage since at least the 1950s (and possibly earlier).[25] Most pesticides used in agriculture today have short persistence, and quickly degrade to less toxic compounds. However, inorganic compounds containing metals such as mercury, copper, lead, and/or arsenic were commonly used prior to World War II and may have been used within the project area. Highly persistent and bioaccumulative organic compounds, such as DDT, were commonly used after World War II, and may have been used within the project area during the time the site was used for agricultural purposes.

Pesticides, herbicides, and other hazardous materials are also known to have been lawfully applied in 2002 and 2003 to one of the sites identified for school use, and to other parcels within the Villages of Patterson project area from 2000 through 2005. Hazardous materials uses (pesticides, fuels, and other hazardous materials) are also permitted in several areas throughout

[24] California Environmental Quality Act, CEQA Appendix G. Environmental Checklist Form, Hazards and Hazardous Materials, 2006, p. 266.
[25] Condor Earth Technologies, 2005, p. 21.

the Villages of Patterson project area. Pesticide handling areas associated with farm operations and on other properties have been documented, and there are oral accounts from owners and occupants who identified use of chemicals, pesticides, and ASTs on one of the parcels proposed for a school.[26]

At least three cases of soil contamination by crude oil release associated with the Standard / Chervon Old Valley Pipeline, located between the railroad tracks and Highway 33, have been reported. This pipeline is located adjacent to the western boundary of the site.[27]

Both the Brown and Caldwell and Condor Earth Technologies Phase I ESAs prepared for the project area[28] documented the likely existence of unpermitted or improperly abandoned ASTs and USTs, as well as permitted ASTs and USTs. Nine specific properties in the project area Brown and Caldwell Phase I ESA (2006) were identified as requiring additional investigation.[29] In addition, drum storage areas, drums, a possible trash incinerator, paint cans, a metal pipe sticking out of the ground at one of the school-site parcels (use undetermined), and other tanks were observed during the site visits completed in support of the two Phase I ESAs.

Numerous properties within the project area were also reported in both the Brown and Caldwell and Condor Earth Technologies Phase I ESAs as having or potentially having septic systems and leachfields and private wells, since the project area is not currently served by the City's wastewater or water treatment systems. These wells and septic systems could present a safety issue if encountered by construction workers driving construction equipment during site development activities. In addition, if wells were left in place without proper closure, they could act as a conduit for hazardous materials to enter groundwater. Refuse piles and discarded materials were identified in several locations within the project area during the site visits completed in support of both Phase I ESAs; these could contain hazards.

Finally, the two Phase I ESAs conducted did not include the parcel owned by the City of Patterson that is used as a stormwater detention basin. Up to eight soccer fields may be developed on a portion of this parcel. In addition, excavation of this parcel may be undertaken to increase the capacity of the detention basin. There may be a potential for contaminants in stormwater, or other contamination potentially associated with historical land use in this area, to have affected soils and groundwater on these parcels.

Exposure to hazardous materials in soils, groundwater, or structures or containers during site grading and development activities could potentially affect the health and safety of construction

[26] Brown and Caldwell, 2006; and Condor Earth Technologies, 2005.
[27] Brown and Caldwell, 2006, p. 75.
[28] Brown and Caldwell, 2006; and Condor Earth Technologies, 2005.
[29] Brown and Caldwell, 2006, p. 75.

workers and the general public. If left in place, this contamination could also affect future residents, workers, and other site users at the project site.

Mitigation Measure G.1a

As a condition of approval for construction, excavation, demolition, or grading permits for the project site, the following subsurface investigations shall be performed to evaluate recognized environmental conditions identified in Phase I ESA investigations for the project site:

- Limited site-wide shallow soil sampling and analysis of samples for organochlorine pesticides, chlorinated herbicides, and metals shall be collected by a qualified environmental professional in accordance with the methodology in DTSC's *Interim Guidance for Sampling Agricultural Fields for School Sites, Second Revision,* 26 August 2002, and DTSC's informal policy on redevelopment of former agricultural areas.
    - All sampling activities shall be conducted prior to site grading and development activities. Sampling of areas previously sampled during the PEA prepared for the proposed Eastside Middle School Site, 361 Walnut Avenue, need not be included in the sampling activities.
        - The project sponsor and its successors shall also ensure that sampling of areas that were formerly or are currently used for pesticides or fertilizer handling mixing and/or storage is conducted by a qualified environmental professional for the purpose of characterizing these areas, and identifying potential risks/hazards to construction workers and future site users.
    - As specified in DTSC's *Interim Guidance*, any detected organic compounds or metals above naturally-occurring concentrations must be evaluated in a risk assessment, and additional remedial action such as soils removal may be required, depending on the results of the environmental investigation and risk assessment.
    - The results of the soil sampling investigations shall be reported by a qualified environmental professional to the City and agency(ies) providing regulatory oversight, and the results of the investigation shall include recommendations for future actions, including additional remediation, as necessary.
- Shallow soil samples shall be collected near the perimeter of existing or former structures with confirmed or suspected lead-based paint by a qualified environmental professional. The purpose of the investigation shall be to determine whether lead particles from lead-based paint may have affected soils near buildings within the project area.
- Soil samples shall be collected by a qualified environmental professional to evaluate potential petroleum hydrocarbon contamination issues in the project area parcels adjacent to the railroad right-of-way prior to development. The purpose of the investigation shall be to determine potential risks/hazards to construction workers, future site users, and the general public during and following construction activities, and the need for any remediation prior to site grading and development.

- Soil sampling results shall be compared to U.S. EPA Preliminary Remediation Goals (PRGs)[30] appropriate for the proposed future land use at the parcel (i.e., residential or commercial/industrial).
- If hazardous materials are identified in excess of U.S. EPA PRGs, a Human Health Risk Assessment (HHRA) shall be performed by a qualified environmental professional. The HHRA shall describe measures that must be implemented to ensure that any potential added health risks to construction workers, maintenance and utility workers, site users, and the general public as a result of hazardous materials are reduced to a cumulative risk of less than 1×10^{-6} (one in one million) for carcinogens and a cumulative hazard index of 1.0 for non-carcinogens, or as required by a regulatory oversight agency. The HHRA would be subject to review and/or approval by SCERD and/or other regulatory oversight agencies.
- The potential risks/hazards to human health in excess of these goals would be reduced either by remediation of the contaminated soils or groundwater (e.g., excavation and off-site disposal and/or extraction/treatment of groundwater) and/or implementation of institutional controls and engineering controls (IC/EC). IC/EC may include the use of hardscape (buildings and pavements), importation of clean soil in landscaped areas to eliminate exposure pathways, and deed restrictions. If IC/EC are implemented, an Operations and Maintenance Program must be prepared and implemented to ensure that the measures adopted are maintained throughout the life of the project. If IC/EC are implemented, the Operations and Maintenance Program would be subject to review and approval by SCERD and/or other regulatory oversight agencies.

Mitigation Measure G.1b

As a condition of approval for construction, excavation, demolition, or grading permits for the project site, all ASTs and USTs shall be removed prior to site grading or site development activities within the proposed project area, in accordance with state and local requirements. In addition, the nine properties identified in the Brown and Caldwell Phase I ESA (2006) for the Villages of Patterson project shall also be investigated for the potential presence of undocumented ASTs and USTs. The AST and UST removals shall be completed by a qualified environmental professional, under a permit(s) obtained from the SCERD. Soil and/or groundwater samples shall be collected at the time of removal and analyzed as directed by the SCERD and the findings of the sampling effort shall be documented by the qualified environmental professional and submitted to SCERD and the City. Sampling results shall be compared to U.S. EPA PRGs, and additional actions performed, as described above in Mitigation G.1a.

[30] The U.S. EPA PRGs are at: http://www.epa.gov/Region9/waste/sfund/prg/index.html.

Mitigation Measure G.1c

Prior to activities involving soil disturbance on the parcel owned by the City of Patterson and used as a stormwater detention basin, a Phase I environmental site assessment or an Update of the Brown and Caldwell Phase I ESA[31] shall be conducted by a qualified environmental professional (e.g., a California-registered environmental assessor) for this parcel. The new or updated Phase I ESA shall be conducted to identify specific current or historical land uses that have or may have included the storage or generation of hazardous materials and the potential for releases of hazardous materials that may have impacted the site. The assessment shall be performed in conformance with standards adopted by the ASTM for Phase I ESAs. The Phase I ESA (or Phase I ESA update) shall also present recommendations for further investigation of the site (if necessary). The Phase I ESA (or Phase I ESA Update) report shall be submitted to the City, upon completion.

If a Phase I ESA (or Phase I ESA Update) were to indicate that a release of hazardous materials could have affected the location(s) where soil disturbance will occur, a soil and/or groundwater investigation shall be conducted prior to soil disturbance by a qualified environmental professional to assess the presence and extent of contamination at the site and the potential risks/hazards to human health and public safety from the contamination (if any). The soil and/or groundwater investigation shall be conducted in accordance with state and local guidelines and regulations, with oversight from a regulatory agency (e.g., SCERD). The findings of the investigation shall be documented in a written report and shall be submitted to the City and the regulatory agency. Sampling results shall be compared to U.S. EPA PRGs, and additional actions performed, as described above in Mitigation G.1a.

Mitigation Measure G.1d

Prior to approval for any demolition, grading, or construction permits at the project site, a Construction Risk Management Plan (CRMP) shall be prepared with provisions to protect construction workers and the nearby public from health risks from residual contaminants in site soils and groundwater during project construction.

- The CRMP shall summarize previous environmental investigations and health risk assessments conducted for the project site (as required in Mitigation Measures G.1a, G.1b, and G.1c).
- In accordance with state and federal laws and regulations, the CRMP shall describe required worker health and safety provisions for all workers potentially exposed to

[31] A Phase 1 ESA meeting or exceeding the ASTM practice and completed less than 180 day previously is presumed to be valid. A Phase 1 ESA meeting or exceeding the ASTM practice and completed more than 180 previously may be used to the extent allowed by the standard, ASTM, 2000, p. 9.

contaminated soil and groundwater, including air monitoring. Action levels for contaminants of concern shall be established, with detailed descriptions of corrective actions to be taken in the event that the action levels are reached during monitoring.

- The CRMP shall also provide procedures to be undertaken in the event that previously unreported contamination or subsurface hazards (such as undocumented USTs, septic systems, and wells) are discovered during construction and as also required by Education Code 17213.2 (e) for school sites; incorporate construction safety measures for excavation and other construction activities; establish detailed procedures for the safe storage, stockpiling, use, and disposal of contaminated soils and groundwater and other hazardous materials at the project site; provide emergency response procedures; and designate personnel responsible for implementation of the CRMP during the construction and operational phases of the project.
- The CRMP shall be submitted to the City.

Implementation of these mitigation measures would reduce this impact to a less-than-significant level.

Impact G.2. Demolition or modification of structures with lead-based paint, asbestos-containing materials, or other hazardous building materials could release airborne particles of hazardous materials, which may affect the health of construction workers, future school site users, and the general public. (Less than Significant with Mitigation)

The proposed project would involve redevelopment of areas with existing residential and farm-related structures; based on the Brown and Caldwell and Condor Earth Technologies Phase I ESAs for the project area, the earliest structures may have been constructed in 1916 or earlier.[32] The structures on the proposed school site properties, which were evaluated separately, were identified as potentially containing lead-based paint and/or lead in soil surrounding the perimeter of the buildings or former structures.[33]

Demolition or alteration of structures on the project site could result in the release of lead, asbestos, and other hazardous materials commonly present in structures built prior to 1980. Exposure to hazards associated with building materials may potentially result in health effects to construction workers, future school site users, and the public.

Mitigation Measure G.2

As a condition of approval for any demolition permit for a structure or facility potentially containing lead or asbestos under the proposed project, a lead-based paint and asbestos-containing survey shall be performed at the structure or facility by a certified environmental

[32] Brown and Caldwell, 2006, p. 38; Condor Earth Technologies, 2005, p. 10.
[33] Condor Earth Technologies, 2005, p. 21.

professional. Also, any major modification to structures/facilities constructed prior to 1980 shall require a similar lead and asbestos survey for those portions of the structure to be modified.

Based on the findings of the survey, all loose and peeling lead-based paint and identified asbestos hazards shall be abated by a certified contractor in accordance with local, state, and federal requirements, including the requirements of the San Joaquin Valley Air Pollution Control District. Other hazardous materials and wastes generated during demolition or renovation activities, such as fluorescent light tubes and mercury switches, shall be classified, handled, and disposed of in accordance with applicable universal and hazardous waste regulations.

Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

Impact G.3. Construction of new schools on land with previous agricultural land uses that could have involved the use of pesticides and petroleum hydrocarbons, or with structures that could potentially contain lead-based paint, asbestos-containing materials, or other hazardous building materials, could result in a health hazard to students, teachers, and other on-site personnel. (Less than Significant with Mitigation)

Three school sites (located at Hartley Street and north and south sides of Garcia Way, and Hartley Street and Kern Avenue) are proposed in the project area. A Phase I ESA and additional information required under the applicable sections of the State Education Code and the Public Resources Code have been completed for the first school that is proposed for construction on the south side of Garcia Way at Hartley Street. This school would first house students from grades kindergarten through grade 8, and then later as the other schools described below are constructed, would house middle school students (grades 6 through 8).

As part of the Condor Earth Technologies Phase I ESA (2005) completed for the proposed school site,[34] evidence of soil staining and odors and petroleum hydrocarbon storage (gasoline and diesel ASTs) were identified for APN 047-031-017; petroleum hydrocarbon contaminated soils were reported as likely being present at this location. In addition, pesticide mixing areas and possible lead contamination of the former farm complex area (barn) with possible soil contamination were identified. Finally, other potential hazardous materials were identified in the Condor Earth Technologies Phase I ESA (2005) for the proposed school site as described above (e.g., refuse, septic systems, domestic water wells, a buried pipe, outhouse pit, containers or structures [transformer] containing hazardous materials). The preparers of the Condor Earth Technologies Phase I ESA recommended that the school district revise the proposed school boundary to exclude this area of potential contamination, and recommended that a PEA be completed for

[34] Ibid.

these parcels proposed for school siting, with DTSC oversight. A PEA was subsequently prepared and DTSC concurred that further environmental investigation of the site was not required and approved the PEA.[35]

The Brown and Caldwell Phase I ESA for the Villages of Patterson site included the areas proposed for the two additional elementary school sites. Other requirements for the siting of schools pursuant to the State Education Code and Public Resources Code are not known to have been completed for these two additional school sites as of the date of this document.

Students, teachers and other on-site school personnel may come into contact with lead, asbestos, petroleum hydrocarbons, pesticides and other hazardous materials associated with previous land uses and materials identified during the site visits. Exposure to these hazardous materials could have adverse health effects, depending on the route and duration of exposure.

Mitigation Measure G.3

The project sponsor and its successors shall comply with all applicable environmental regulatory requirements and guidance documents for the siting of new schools. In accordance with existing requirements, all environmental work performed in support of school siting shall be performed by qualified environmental professionals under oversight by DTSC's School Siting Unit. No additional mitigation is required.

Implementation of this measure would reduce this impact to a less-than-significant level.

Impact G.4. Use and potential accidental spills of hazardous materials during construction of the proposed project could result in soil and/or groundwater contamination and adverse health effects to construction workers, the public, and the environment. (Less than Significant with Mitigation)

Hazardous materials (e.g., fuels, lubricants, paints, adhesives) would be transported and used on-site for proposed site construction and redevelopment activities. In addition, construction vehicles would be used on-site that could accidentally release hazardous materials, such as oils, grease or fuels. It is likely that these hazardous materials and vehicles would be stored by the contractor(s) on-site during the duration of construction activities. Accidental release of hazardous materials could impact soil and/or groundwater quality, or could result in adverse health effects to construction workers, the public, and the environment.

[35] Fair, Sharon, California Department of Toxic Substances Control, Letter to Mr. S. Menge, Patterson Unified School District, Re: Approval of Draft Preliminary Environmental Assessment, Eastside Middle School Site, 361 Walnut Avenue, Patterson (Side Code 104484-11), 7 February 2006.

Mitigation Measure G.4

The Stormwater Pollution Prevention Plan (SWPPP) required for the project (see Mitigation Measure I.4a in Section III.I, Hydrology and Water Quality, p. III.I.17-III.I.18) shall include emergency procedures for incidental hazardous materials releases. The procedures shall include necessary personal protective equipment, spill containment procedures, and training of workers to respond to accidental spills/releases.

The SWPPP shall also include Best Management Practices, which shall include requirements for hazardous materials storage during construction to minimize the potential for releases to occur (see Mitigation Measure I.4a in Section III.I, Hydrology and Water Quality, p. III.I.17-III.I.18). All use, storage, transport, and disposal of hazardous materials during construction activities shall be performed in accordance with existing local, state, and federal hazardous materials regulations.

Implementation of these mitigation measures would reduce this impact to a less-than-significant level.

Impact G.5. Future land uses at the project site may potentially create a significant hazard to the public or the environment as a result of routine transport, use, production, or disposal of hazardous materials. (Less than Significant)

Light industrial/commercial/office land uses along the frontage to Highway 33 are proposed across N. 1st Street from parcels proposed for low-density residential and medium-density residential development. In addition, village commercial/office uses within The Village Circle are proposed immediately adjacent to medium-density residential land uses and schools. The light industrial and village commercial uses could potentially use, store, produce, transport, and dispose of hazardous materials. The types of hazardous materials are unknown, but would be a function of the specific light industrial land uses and commercial land uses. Hazardous materials could also be used at areas proposed for public/quasi-public uses (e.g., fire and police stations) or parks adjacent to proposed residential areas, for example, for grounds maintenance activities. Improper transport, use, storage, or disposal of these hazardous materials could result in a release of hazardous materials that could potentially affect site workers, site patrons, the general public, and the environment.

Any businesses with hazardous materials storage, use, and/or disposal would be required to comply with federal, state, and local requirements for managing hazardous materials. These plans include the primary hazardous materials programs administered by the Stanislaus County Environmental Resources Department (CUPA Plans, Programs and Permits) as well as other requirements of state and federal laws and regulations. Depending on the precise types and quantities of hazardous materials used, stored, and disposed of from the project site, these

requirements may include the preparation of, implementation of, and training in the following plans, programs, and permits.

- **CUPA Plans, Programs, and Permits**
  - *Hazardous Waste Generator Requirements*. Facilities that generate more than 100 kilograms (approximately 225 pounds) per month of hazardous waste, or more than 1 kilogram (approximately 2.2 pounds) per month of acutely hazardous waste, must be registered in accordance with the Resource Conservation and Recovery Act (RCRA) (Title 42, US Code, Sections 6901 et seq.).
  - *Aboveground and Underground Storage Tank Permits*. Facilities with ASTs or USTs must be permitted. Other plans, such as a Spill Prevention Control and Countermeasures (SPCC) Program, may be required due to the size and type of hazardous materials stored in the ASTs. The SPCC Program provides a detailed engineering analysis of the potential for release from oil-filled equipment, and describes the measures, such as secondary containment and emergency response, that will be implemented to reduce the release potential.
  - *Hazardous Materials Business Plan (Business Plan)*. Facilities that use, store, or handle hazardous materials in quantities greater than 500 pounds, 55 gallons, or 200 cubic feet are required to prepare a Business Plan. The Business Plan would contain facility maps, up-to-date inventories of all hazardous materials for each shop/area, emergency response procedures, equipment, and a description of employee training.
  - *Hazardous Material Release Response Plan (Contingency Plan)*. All facilities that generate hazardous waste must prepare a Contingency Plan. The Contingency Plan identifies the duties of the facility Emergency Coordinator, identification and location of emergency equipment, and also includes reporting procedures for the facility Emergency Coordinator to follow after a hazardous materials incident.
  - *California Accidental Release Program (CalARP)*. Businesses that use significant quantities of acutely hazardous materials must prepare a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. CalARP requirements typically apply to heavy industrial properties such as factories and refineries, which are not proposed for the project site.
- **Non-CUPA Plans, Programs, and Permits**
  - *Injury and Illness Prevention Plan*. The California General Industry Safety Order requires that all employers in California shall prepare and implement an Injury and Illness Prevention Plan which should contain a code of safe practice for each job category, methods for informing workers of hazards, and procedures for correcting identified hazards.
  - *Emergency Action Plan.* The California General Industry Safety Order requires that all employers in California prepare and implement an Emergency Action Plan. The Emergency Action Plan designates employee responsibilities, evacuation procedures and routes, alarm systems, and training procedures.
  - *Fire Prevention Plan*. The California General Industry Safety Order requires that all employers in California prepare and implement a Fire Prevention Plan. The Fire

Prevention Plan specifies areas of potential hazard, persons responsible for maintenance of fire prevention equipment or systems, fire prevention housekeeping procedures, and fire hazard training procedures.

- *Hazard Communication Plan*. Facilities involved in the use, storage, and handling of hazardous materials are required to prepare a Hazard Communication program. The purpose of the Hazard Communication program is to provide methods on safe handling practices for hazardous materials, ensure proper labeling of hazardous materials containers, and ensure employee access to Material Safety Data Sheets (MSDSs).
- *Air Pollution Sources*. Facilities that emit pollutants into the air from sources other than motor vehicles and consumer products are required to be permitted by SJVAPCD.

Compliance with existing hazardous materials plans, programs, and permits would ensure that potential hazardous materials impacts related to proposed future land uses would be less-than-significant.

Mitigation Measure: No mitigation is necessary.

Impact G.6. Implementation of the project would not result in the emission or handling of hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of an existing or proposed school. (Less than Significant)

If the proposed project were to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of an existing or proposed school, it could result in significant human health effects. There are no permitted air emissions or hazardous materials or waste handling facilities within one-quarter mile of the proposed school site area.[36]

Any hazardous materials used, emitted, or handled following development of the proposed project (e.g., for light industrial, commercial, and public/quasi-public uses) would be required to comply with federal, state, and local requirements for managing hazardous materials. See Mitigation Measure G.5 for the plans, programs, and permits that may be required.

Mitigation Measure: No mitigation necessary.

[36] Condor Earth Technologies, 2005, p. 15.

Impact G.7. Implementation of the proposed project would not involve development on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (Less than Significant)

No sites in the project area, including the proposed school site, were found on the list of properties that have been compiled pursuant to Government Code Section 65962.5.[37] This list of properties is commonly referred to as the Cortese database. [38] The Cortese database is a list of sites designated by the State Water Resources Control Board, the Department of Toxic Substances Control, and the Integrated Waste Management Board. The list identifies public drinking water wells with detectable levels of contamination, sites with underground storage tanks having reportable releases, sites with cease and desist orders or cleanup or abatement orders filed regarding waste discharges to waters of the state, hazardous substances sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program and other programs, hazardous waste property or border zone properties, properties with hazardous waste disposals on land, and all solid waste disposal facilities from which there is known migration.

Mitigation Measure: No mitigation necessary.

[37] Brown and Caldwell, 2006, Section 16.2 (Environmental Data Resources, Executive Summary, p. 5); Condor Earth Technologies, 2005, Appendix B (Environmental Data Resources, Executive Summary, p. 4).
[38] Information reviewed on-line at www.dtsc.ca.gov/SiteCleanup/upload/ land-restrictions-factsheet-12-20-99.pdf, on 13 April 2006.

H. BIOLOGICAL RESOURCES

This section addresses the environmental setting and impacts related to biological resources, including threatened, endangered and other special-status species and habitats. While agricultural and other human-related activities have long ago greatly modified the natural communities that historically occurred along the west side of the San Joaquin Valley, this region still supports remnants of these communities and the diverse assemblage of plants and wildlife that they once contained. Development of the Villages of Patterson project would occur in the vicinity of some of these sensitive biological resources.

SETTING

REGULATORY FRAMEWORK

Special-Status Plant and Wildlife Species

Federal and state endangered species legislation gives special status to several plant and animal species known to occur in the vicinity of the project site. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies that review environmental documents, have identified some species occurring in the vicinity of the project site as sensitive. These species are referred to collectively as "species of special status" and include plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); animals listed as "fully protected" under the California Fish and Game Code; animals designated as "Species of Special Concern" by the California Department of Fish and Game (CDFG); and plants listed as rare or endangered by the California Native Plant Society (CNPS).[1]

ESA provisions protect federally listed threatened and endangered species and their habitats from unlawful take. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The U.S. Fish & Wildlife Service's (USFWS) regulations define harm as "an act which actually kills or injures wildlife." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."[2] Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species in May 2005.[3] Candidate species are not afforded any legal protection

[1] California Native Plant Society, *Inventory of Rare and Endangered Plants of California*, 2001.
[2] Federal Code of Regulations, Title 50, Section 17.3.
[3] 50 CFR §17, May 11, 2005.

under ESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

Provisions of CESA protect state-listed threatened and endangered species. CDFG regulates activities that may result in "take" of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected."[4] Such species may not be taken or possessed.

In addition to federal and state-listed species, the CDFG also has produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection. USFWS also uses the label "Species of Concern" as an informal term that refers to those species that might be in need of concentrated conservation actions. Species of Concern receive no legal protection as a result of their designation, and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species. However, most, if not all, of these species are currently protected by state and federal laws.

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and state regulations. The federal Migratory Bird Treaty Act[5] (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are protected in California under the State Fish and Game Code.[6] Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG.

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under federal or state endangered species legislation, are defined as follows:

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[4] California Fish & Game Code §§3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), 5515 (fish).
[5] 16 U.S.C., Sec. 703, Supp. I, 1989.
[6] California Fish & Game Code §3503.5, 1992.

- List 1A: Plants considered by the CNPS to be extinct in California.
- List 1B: Plants rare, threatened, or endangered in California and elsewhere.
- List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3: Plants about which we need more information – a review list.

United States Army Corps of Engineers Jurisdiction

The U.S. Army Corps of Engineers (USACE) identifies wetlands under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). The legal definition of wetlands is given in Appendix C. Wetlands are identified using the USACE protocol manual.[7]

Construction activities within wetlands are regulated by the USACE. The placement of fill into wetlands must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

California Department of Fish and Game Jurisdiction

The CDFG definition of stream includes "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams shown on U.S. Geological Survey topographic maps, and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife."[8] Such areas on the site were determined using CDFG's methodology.[9]

Activities that result in the diversion or obstruction of the natural flow of a stream, or that substantially change its bed, channel or bank, or that use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFG.

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[7] U.S. Army Corps of Engineers, Waterways Experiment Station, Environmental Laboratory, *Corps of Engineers Wetlands Delineation Manual,* 1987.
[8] California Department of Fish and Game, *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607,* 1994 ("CDFG 1994a").
[9] CDFG, 1994a.

City of Patterson

General Plan Goals and Policies

The following major goals, policies, and programs in the City of Patterson *General Plan*, as updated in 2004, are relevant to the proposed project:

- *Natural Resources Goal VI.C*: To protect sensitive native vegetation and wildlife communities and habitat.
- *Natural Resources Policy VI.C.2*: The City shall support state and federal laws and policies to preserve populations of rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects.
- *Natural Resources Policy VI.C.3*: Unless there are significant, overriding considerations, the City shall not approve projects that would cause unmitigable impacts on rare, threatened, or endangered wildlife or plant species.
- *Natural Resources Policy VI.C.4*: The City shall support and participate in local and regional attempts to restore and maintain viable habitat for endangered plant and animal species.
- *Natural Resources Policy VI.C.5*: The City shall work with the California Department of Fish and Game in identifying a regional area or areas suitable for Swainson's Hawk habitat; this land should be designated as a potential mitigation land bank for impacts on existing habitat for these species.
- *Natural Resources Policy VI.C.6*: The City, and other government agencies, shall investigate a mechanism for funding acquisition and management of lands in the potential mitigation land bank.
- *Natural Resources Policy VI.C.7:* The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties.

EXISTING CONDITIONS

The Villages of Patterson project site is located north and east of the City of Patterson, in unincorporated Stanislaus County, contiguous to, and outside of, the incorporated boundaries of Patterson. The majority of land within the project site is cultivated in irrigated row crops, including alfalfa, wheat, and oats. Large tracts of orchard and fallow fields also occur on the project site.

Reconnaissance-level field surveys and a Swainson's Hawk nesting survey of the project site were conducted on 10 March 2006. A biotic study summarizing the results of this survey is included in Appendix C. The purpose of these surveys was to document biotic resources on the site that may pose constraints to the proposed development. Specifically, surveys were conducted to: 1) describe existing biotic habitats; 2) assess the site for its potential to support special-status

species and their habitats; and 3) identify potential jurisdictional habitats, including Waters of the U.S., riparian habitat, and ordinance trees.

The project site is primarily characterized by agricultural habitat types, including irrigated row crops, orchards, fallow fields, ruderal, aquatic (concrete-lined laterals), and developed areas. These biotic habitats, and associated vegetation and wildlife, are described in further detail below.

BIOTIC HABITATS AND ASSOCIATED VEGETATION AND WILDLIFE

Irrigated Row Crops

Irrigated row crops and disked fields comprise the majority of the project site (383.4 acres). Dominant crops included oats (*Avena sativa*), wheat (*Triticum aestivum*), and alfalfa. Black mustard (*Brassica nigra*) is also found sporadically throughout the fields. These crops are flood-irrigated using water that is diverted from the laterals present on the site to irrigation trenches located on the periphery of the fields.

Because they are less frequently disturbed than other crops, irrigated row crops are used by some wildlife. Species that occur in cultivated habitats are generally widespread species accustomed to disturbances such as American Kestrels (*Falco sparverius*), American Crows (*Corvus brachyrhynchos*), Killdeer (*Charadrius vociferous*), Mourning Doves (*Zenaida macroura*), Western Meadowlarks (*Sturnella neglecta*), Brewer's Blackbirds (*Euphagus cyanocephalus*), and House Finches (*Carpodacus mexicanus*). Alfalfa frequently supports large populations of gophers and voles (*Microtus* sp.), which are prey for raptors such as Red-tailed Hawks (*Buteo jamaiceusis*), Swainson's Hawks (*Buteo swainsoni*), and Northern Harriers (*Circus cyaneus*). During irrigation, flocks of American Crows and Great Blue Herons (*Ardea herodias*) are frequently observed feeding on invertebrate life forced to the surface by sheets of water.

Orchards

Developed apricot (*Prunus armeniaca)*, black walnut (*Juglans nigra*), English walnut (*Juglans regia*), and almond (*Prunus dulcis*) orchards make up approximately 122.3 acres of the project site. The orchards throughout the project site are maintained with few weeds, and consisted primarily of barren soil at the time of the survey.

Orchards provide limited habitats for wildlife, as frequent disturbances associated with crop production such as pruning, spraying, harvesting, watering, and other ground disturbances limit the potential for most wildlife species to persist in these habitats. However, some animals such as the side-blotched lizard (*Uta stansburiana*) persist under these conditions. Birds such as American Crows and Yellow-billed magpies (*Pica nuttalli*) utilize nut crops and can be quite abundant. Burrowing animals such as California ground squirrels (*Spermophilus beecheyi*) and

gophers (*Thomomys sp.*) are normally actively discouraged because of damage these animals can cause to irrigation systems.

Fallow Fields

Fallow fields (previously farmed but not currently planted) comprise approximately 123.1 acres of the project site. Although these fields appeared to previously contain oats, wheat, or alfalfa, they were devoid of these crops at the time of the field survey, and contained black mustard and other ruderal, weedy species.

Fallow fields are likely to have larger populations of small mammals such as gophers than actively farmed lands and may be more likely to provide nesting habitat for birds such as Killdeer, Mourning Doves, and Red-winged Blackbirds (*Agelaius phoeniceus*). Raptors also prey upon small mammals within fallow fields.

Ruderal Habitat

Ruderal habitat comprises approximately 8.8 acres of the project site. Ruderal communities are assemblages of plants that thrive in disturbed areas, and weedy, non-native annual forbs and grasses are typically the first species to colonize these sites following disturbance. Human-caused disturbances common within and around agricultural fields include disking, weed control, and operation of heavy farm equipment. Ruderal species observed on the project site included ripgut brome (*Bromus diandrus*), filaree (*Erodium* sp.), black mustard, shepherd's purse (*Capsella bursa-pastoris*), and yellow star-thistle (*Centaurea solstitialis*).

Ruderal habitats within the project area are of limited value to wildlife due to the lack of vegetative cover. Common species such as Mourning Doves and Killdeer occasionally forage in such areas.

Aquatic Habitat

Aquatic habitat comprises approximately 9.4 acres of the project site and occurs only seasonally within the following two laterals: Lateral 4 North, extending from Highway 33 on the western boundary of the project site to Eucalyptus Avenue to the north; and Lateral 3 North, which spans the entire eastern portion of the project site north from Walnut Avenue to Eucalyptus Avenue. Both of the laterals are approximately 8 feet (2.4 m) wide at the top and 6 feet (1.8 m) wide at the bottom. At the time of the survey, the Lateral 4 North did not contain water while Lateral 3 North contained water.

The two laterals on the project site were completely devoid of aquatic vegetation, and recent scraping and clearing of the laterals was evident at the time of the survey. Some hydrophytes

("water-loving" plants) could be present in areas at the terminus of irrigation trenches where ponding may occur as a result of flood-irrigating practices within the project site. However, neither standing water nor hydrophytes were observed within irrigation trenches during the field survey. Because the laterals and the surrounding areas are devoid of vegetation, these areas are of little value for wildlife species. When in use, the laterals may provide a source of drinking water for birds and mammals.

Developed Areas

Approximately 45.0 acres of the project site is comprised of developed areas, including houses and associated hardscape, as well as barns, related structures, and equipment. Many of the ruderal species previously listed occur around these developments. Additionally, a variety of native and ornamental trees including coast live oak (*Quercus agrifolia*), date palm (*Phoenix* sp.), pine (*Pinus* sp.), and eucalyptus (*Eucalyptus* sp.) are present within developed areas.

Homesteads and developed areas typically provide habitat for common species accustomed to human disturbance. Common backyard birds such as Western Scrub-jays (*Aphelocoma californica*), American Robin (*Turdus migratorius*), Northern Mockingbirds (*Mimus polyglottos*), House Finches, and House Sparrows (*Passer domesticus*) are likely to be present at these sites. Where there are wood or brush piles, species such as western fence lizards (*Sceloporus occidentalis*) and desert cottontails (*Sylvilagus audobonii*) may be present.

SPECIAL STATUS SPECIES

Swainson's Hawk *(Buteo swainsoni)*
Federal Status: None; State Status: Threatened

The Swainson's Hawk (*Buteo swainsoni*) is a large soaring bird of open habitats. Swainson's Hawks were once one of the most common birds of prey in the grasslands of California. Populations have declined at least 90 percent since 1990, and are still believed to be declining.[10] They once nested in the majority of the lowland areas in the state. Currently, the nesting range is primarily restricted to portions of the Sacramento and San Joaquin Valleys and northeast California.[11] It was listed as Threatened by the State of California in 1983.

Swainson's Hawks require large amounts of foraging habitat, preferably grassland or pasture habitats. Their preferred prey items are voles (*Microtus* sp), gophers, birds, and insects such as

[10] P.H. Bloom and D.Van De Water, *Swainson's Hawk,* in C.G. Thelander and M.Crabtree, eds, Life on the Edge: A Guide to California's Endangered Natural Resources: Wildlife, Biosystems Books, 1994.
[11] P.H. Bloom, *The Status of the Swainson's Hawk in California, 1979,* Federal Aid in Wildlife Restoration, Project W-54-R-12, Final Report 11-8-0, California Department of Fish and Game, Wildlife Management Division, Nongame Bird and Mammal Section, 1980.

grasshoppers.[12] They have also adapted to some croplands, particularly alfalfa, but also forage in hay, grain, tomatoes, beets, and other row crops.[13] Crops such as cotton, corn, rice, orchards, and vineyards are not suitable since they either lack suitable prey or the prey is unavailable due to the crop structure.

In the Central Valley, Swainson's Hawks are generally tied to riparian habitat for nesting sites.[14] A few pairs nesting in Tulare and Kings County use eucalyptus trees and nest outside riparian areas.[15]

In the fall, Swainson's Hawks form flocks called kettles, sometimes in large numbers, and migrate together to South America. Kettles can occasionally be seen in the valley foraging behind tractors or harvesters, hunting mice and insects that have been displaced by the activities.

Land conversion for agricultural purposes in the San Joaquin Valley and the predominance of crops that are unsuitable foraging habitat have led to a loss of suitable habitat patches large enough to sustain Swainson's Hawks. However, there are numerous current and historic records of Swainson's Hawk within ten miles (16 km) of the project site.[16] Furthermore, an additional CNDDB record from 1999 exists within 3 miles (4.8 km) of the project site. This record is more that five years old; however, the habitat in the vicinity of the nest appears to be mostly unchanged and remains suitable for Swainson's Hawk. Potential foraging habitat is abundant within the project site within irrigated row crops, disked fields, and fallow lands, and suitable nest locations exist in the vicinity of the project site. Therefore, while the species was not observed during reconnaissance-level surveys, the Swainson's Hawk is presumed present in the project area. Swainson's Hawk nesting surveys are being conducted per the Swainson's Hawk Technical Advisory Committee recommendations to confirm nesting within the project vicinity.

Northern Harrier *(Circus cyaneus)*
Federal Status: None; State Status: Species of Special Concern (nesting)

Northern Harriers are commonly found in open grasslands, agricultural areas, and marshes. Northern Harriers nest on the ground in areas where long grasses or marsh plants provide cover and protection. Harriers hunt for a variety of prey, including rodents, birds, frogs, reptiles, and

[12] J.A. Estep, *Biology, movements and habitat relationships of the Swainson's Hawk in the Central Valley of California, 1986-1987,* California Department of Fish and Game, Wildlife Management Division, Nongame Bird and Mammal Section, 1989.
[13] Estep, 1989.
[14] Bloom, 1980.
[15] CNDDB, California Natural Diversity Data Base, California Department of Fish and Game, Sacramento, CA, 2006.
[16] Ibid.

insects, by flying low to the ground and slowly in a traversing manner, using both sight and sound to detect prey items.

Northern Harriers were observed foraging in the project vicinity during the field survey on 10 March 2006. While nesting habitat is absent from the project site, suitable foraging habitat exists throughout the area.

Western Burrowing Owl *(Athene cunicularia)*
Federal Listing Status: None; State Listing Status: Species of Special Concern

The Burrowing Owl is a small, terrestrial owl of open country. Burrowing Owls favor flat, open grassland or gentle slopes and sparse-shrub land ecosystems. These owls prefer annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, Burrowing Owls are found in close association with California ground squirrels. Owls use the abandoned burrows of ground squirrels for shelter and nesting.

Burrowing Owls are known to be resident within the southern San Joaquin Valley. They are likely to inhabit pastures, fallow fields, and canal and railway right-of-ways where ground squirrels have been allowed to invade. No Burrowing Owls or signs of their presence, such as feathers, droppings, pellets, or prey remains, were observed on the project site during the reconnaissance-level survey. However, habitat characteristics within fallow fields and some ruderal habitats within the project site may become suitable for Burrowing Owls prior to construction. Therefore, the species could occur on the project site.

Loggerhead Shrike *(Lanius ludovicianus)*
Federal listing status: None; State listing status: Species of Special Concern

This predatory songbird inhabits much of the lower 48 states of the United States of America. They prefer open habitats interspersed with shrubs, trees, poles, fences or other perches from which they can hunt. Some populations of the Loggerhead Shrike, primarily those in eastern North America, have declined significantly over the last 40 years. Other populations, including those in western North America, appear to be decreasing as well. Even with this trend, Loggerhead Shrikes are still considered a fairly common species in California. Though they are likely to be more common in less disturbed habitats, Loggerhead Shrikes are still found throughout the Central Valley.

A Loggerhead Shrike was observed on the project site during the survey. Suitable nesting and foraging habitat exists on the project site at the edge of orchards and in some vegetation associated with the residences.

Tricolored Blackbird *(Agelaius tricolor)*

Federal listing status: None; State Listing Status: Species of Special Concern

Tricolored Blackbirds are found almost exclusively in the Central Valley and central and southern coastal areas of California. The Tricolored Blackbird is highly colonial in its nesting habits and forms dense breeding colonies of up to tens of thousands of pairs. This species nests primarily in tall, dense stands of cattails or tules, but also nests in blackberry, wild rose bushes and tall herbs. Nesting colonies are typically located near standing or flowing freshwater. Tricolored Blackbirds form large, often multi-species, flocks during the non-breeding period and range more widely than during the reproductive season.

Nesting habitat for Tricolored Blackbirds is absent from the project area. Tricolored Blackbirds are known from the project vicinity[17] and are likely to occasionally forage in agricultural habitats on the project site such as orchards, alfalfa fields, and recently disked fields.

IMPACTS AND MITIGATION

SIGNIFICANCE CRITERIA

The California Environmental Quality Act (CEQA) defines a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment."[18] Under CEQA Guidelines[19] Section 15065, a project's effects on biotic resources are deemed significant where the project would:

- Substantially reduce the habitat of a fish or wildlife species,
- Cause a fish or wildlife population to drop below self-sustaining levels,
- Threaten to eliminate a plant or animal community, and/or
- Reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, the project would have a significant impact on the environment if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species by the CDFG or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.

[17] Ibid.
[18] California Public Resources Code, § 21068.
[19] California Code of Regulations, § 15000, et seq.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preserve policy or ordinance, or an identified species.

PROJECT IMPACTS AND MITIGATION

Impact H.1. Implementation of the Development Plan would result in loss of aquatic habitat within concrete-lined laterals. (Less than Significant)

Development of the Villages of Patterson project site would result in the permanent loss of approximately 9.4 acres of exposed aquatic habitat in the concrete-lined laterals. These canals are artificially created irrigation ditches used for the conveyance of irrigation water. Neither lateral contained any vegetation at the time of the survey. Neither appears to be a jurisdictional Water of the U.S., subject to Corps of Engineers jurisdiction, nor do they come under the Section 1600 provisions of the Fish & Game Code, administered by the CDFG. Impacts associated with converting the exposed canals to closed conveyance features are, therefore, considered to be less than significant.

Mitigation Measure. No mitigation necessary.

Impact H.2. Implementation of the Development Plan would result in loss of orchard, ruderal, and developed habitat. (Less than Significant)

Orchards, ruderal, and developed habitats support mainly common plant and wildlife species. These habitats are locally common, the plant species present within these areas are regionally common, and the majority of biotic resources associated with these habitats would continue to be abundant following the build-out of the Villages of Patterson project area. Loss of these habitats would not result in significant impacts to biological resources.

Mitigation Measure. No mitigation necessary.

Impact H.3. Implementation of the Development Plan would result in loss of foraging habitat for Northern Harriers and Tricolored Blackbird. (Less than Significant)

Irrigated row crops and disked fields within which Northern Harriers and Tricolored Blackbirds may forage are regionally abundant. Project implementation would not substantially reduce the foraging habitat available for these species, restrict their range, or cause their regional populations to drop below a self-sustaining level. Therefore, impacts to these species stemming from a loss of foraging habitat would be less than significant.

Mitigation Measure. No mitigation necessary.

Impact H.4. Implementation of the Development Plan would result in loss of nesting and foraging habitat for Loggerhead Shrikes. (Less than Significant)

Loggerhead Shrikes were observed during the reconnaissance-level survey and could nest within the project site. Similar potential breeding and foraging habitat for Loggerhead Shrikes associated with agricultural operations and developed areas are regionally abundant. Project implementation would not substantially reduce the foraging habitat available for these species, restrict their range, or cause their regional populations to drop below a self-sustaining level. Therefore, impacts to this species would be less than significant.

Mitigation Measure. No mitigation necessary.

Impact H.5. Implementation of the Development Plan could result in disturbance to nesting Swainson's Hawks. (Less than Significant with Mitigation)

Construction activities during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes Swainson's Hawks to abandon their nest and/or results in the loss of reproductive effort would be a significant impact. A recent nesting season survey has confirmed the presence of an active nest within the project site.[20]

Mitigation Measure H.5a

In order to assure that nesting Swainson's Hawks will not be disturbed by construction activities, a qualified ornithologist shall be retained by each developer to conduct pre-construction surveys of each development site and adjacent areas within one mile of the development site. Such surveys shall follow the survey methodology developed by the Swainson's Hawk Advisory Committee prior to any disturbance within 5 miles of a potential nest tree. Survey Period I occurs from January 1 to March 20, Period II from March 20 to April 5, Period III from April 5 to April 20, Period IV from April 21 to June 10 (surveys not recommended during this period because identification is difficult as the adults tend to remain within the nest for longer periods of time), and Period V from June 10 to July 30. No fewer than three surveys shall be completed, in at least the two survey periods immediately prior to project initiation. In the event that this species is detected during protocol-level surveys, consultation with CDFG shall be required to establish site-specific procedures that ensure project initiation would not result in nest disturbance (see Mitigation Measure H.5b).

[20] H.T. Harvey & Associates, *Villages of Patterson Swainson's Hawk Survey Report*, June 23, 2006.

Implementation of the mitigation measure would reduce the potential impact from nest disturbance to a less-than-significant level.

Mitigation Measure H.5b

Nest trees on the project site(s) should not be removed unless avoidance measures are determined to be infeasible. If a nest tree must be removed, a Management Authorization (including conditions to off-set the loss of the nest tree) must be obtained. The Management Authorization will specify the tree removal period, generally between October 1 – February 1. If construction or other project-related activities which may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the developer) by a qualified biologist should be required to determine if the nest is abandoned. If it is abandoned, and if the nestlings are still alive, the developer shall fund the recovery and hacking (controlled release of captive reared young) of nestling(s).

Impact H.6. Implementation of the Development Plan would result in loss of Swainson's Hawk foraging habitat. (Less than Significant with Mitigation)

Preferred foraging habitat for Swainson's Hawks includes dry-land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, rice land, and cereal grain crops.[21] The project site contains approximately 506.5 acres of suitable foraging habitat for Swainson's Hawks and is within ten miles of known active Swainson's Hawk nests. As noted above, a recent nesting season survey has confirmed the presence of an active nest within the project site.

Project implementation would result in the loss of this foraging habitat and represent a significant adverse effect to this state-threatened species through habitat modification. Implementation of the following mitigation measures would reduce the potential impact on this species to a less-than-significant level.

Mitigation Measure H.6

As a condition precedent to the City's issuance of any building permit for the project, the project sponsor (or its successor(s)) shall furnish documentation, in a form acceptable to the City, that it has provided funding for mitigation for the loss of foraging habitat for Swainson's Hawks by providing offsite Habitat Management (HM) lands as described in the CDFG's *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*[22] because the site is known foraging habitat for Swainson's Hawks.

[21] California Department of Fish and Game, Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California, 1994 ("CDFG 1994b").
[22] CDFG 1994b.

The final acreage of off-site management lands to be provided depends on the distance between the project site and the nearest active nest site,[23] as determined by protocol-level nest surveys. The acreage of offsite HM lands provided should be derived from the following

[23] CDFG 1994b.

recommendations included in the 1994 CDFG staff report for projects within one mile of an active nest tree:

- One acre of HM land (at least 10 percent of the HM land requirements shall be met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90 percent of the HM lands protected by a conservation easement [acceptable to the Department] on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's Hawk) for each acre of development authorized (1:1 ratio); or
- One-half acre of HM land (all of the HM land requirements shall be met by fee title acquisition or a conservation easement [acceptable to the Department] which allows for the active management of the habitat for prey production on the HM lands) for each acre of development authorized (0.5:1 ratio).
- Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands) at the rate of $400 per HM acre.

Impact H.7. Implementation of the Development Plan would result in loss of occupied Burrowing Owl habitat. (Less than Significant with Mitigation)

No Burrowing Owls or signs of their presence, such as feathers, droppings, pellets, or prey remains, were observed in the project area during the survey. The project site does not currently provide suitable Burrowing Owl habitat because there are no ground squirrel burrows or other suitable burrows in, or adjacent to, the open areas of the project site. There is evidence that ground squirrels are actively prevented from establishing burrow systems by on-going farming practices on the site. Should active farming of the site cease prior to the beginning of the project, ground squirrels could become established on the project site and provide habitat for Burrowing Owls.

If Burrowing Owls are present within a construction zone, or adjacent to such an area, at the time of construction, disturbance could destroy occupied burrows or cause owls to abandon burrows. Construction during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. The loss of occupied Burrowing Owl habitat (habitat known to have been occupied by owls during the nesting season within the past 3 years) or reductions in the number of this rare species within Stanislaus County, directly or indirectly through nest abandonment or reproductive suppression, would constitute a significant impact. Furthermore, raptors, including owls and their nests, are protected under both federal and state laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code section 3503.5 (see "Disturbance of Nesting Raptors" below). Implementation of the following mitigation measures would reduce the potential impact on this species to a less-than-significant level.

Mitigation Measure H.7a

In conformance with federal and state regulations regarding the protection of raptors, a habitat assessment in accordance with CDFG protocol for Burrowing Owls shall be completed prior to the start of construction on each parcel in the Project Area. Burrowing Owl habitat on each development site and within a 500-foot (150 m) buffer zone around each development site within the VOP area shall be assessed ("Assessment Area"). If the habitat assessment concludes that the Assessment Area lacks suitable Burrowing Owl habitat, no additional action would be warranted. However, if suitable habitat is located on the Assessment Area, all ground squirrel colonies shall be mapped at an appropriate scale, and the following mitigation measures shall be implemented:

- In conformance with federal and state regulations regarding the protection of raptors, a pre-construction survey for Burrowing Owls, in conformance with CDFG protocol, shall be completed no more than 30 days prior to the start of construction within suitable habitat at the project site(s) and buffer zone(s). Three additional protocol-level surveys shall also be completed per CDFG protocol prior to construction.
- Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the CDFG authorizing the eviction.
- A 250-foot (76 m) buffer, within which no new activity will be permissible, shall be maintained between project activities and nesting Burrowing Owls during the nesting season. This protected area shall remain in effect until August 31, or at the CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently.
- If accidental take (disturbance, injury, or death of owls) occurs, the CDFG shall be notified immediately.

Mitigation Measure H.7b

If preconstruction surveys determine that Burrowing Owls occupy the site and avoiding development of occupied areas is not feasible, then habitat compensation on off-site mitigation lands shall be implemented. Habitat Management (HM) lands comprising existing Burrowing Owl foraging and breeding habitat shall be acquired and preserved. An area of 6.5 acres (the amount of land found to be necessary to sustain a pair or individual owl) shall be secured for each pair of owls, or individual in the case of an odd number of birds. As part of an agreement with the CDFG, the project applicant shall secure the performance of its mitigation duties by providing the CDFG with security in the form of funds that would:

- Allow for the acquisition and/or preservation of 6.5 acres of HM lands;

- Provide initial protection and enhancement activities on the HM lands, potentially including but not limited to such measures as fencing, trash clean-up, artificial burrow creation, grazing or mowing, and any habitat restoration deemed necessary by CDFG;
- Establish an endowment for the long-term management of the HM lands; and
- Reimburse the CDFG for reasonable expenses incurred as a result of the approval and implementation of this agreement.

Pending CDFG approval, HM lands providing foraging habitat for Swainson's Hawks may also be used to mitigate impacts to Burrowing Owls provided the HM lands provide existing Burrowing Owl foraging and breeding habitat.

With implementation of either of these mitigation measures, impacts would be reduced to a less-than-significant level.

CUMULATIVE IMPACTS

Impact H.8. Implementation of the Development Plan would result in cumulative loss of Swainson's Hawk foraging habitat. (Less than Significant with Mitigation)

The loss of foraging habitat due to agricultural and urban expansion has greatly reduced the breeding range and abundance of Swainson's Hawks in California. Patterson is expected, and planned, to accommodate a share of Stanislaus County's projected population growth. Development in the Patterson area including the project area and projects analyzed in the West Patterson EIR would contribute to the conversion of substantial contiguous areas of agricultural lands in the Patterson area.[24]

Conversion of approximately 506.5 acres of suitable Swainson's Hawk foraging habitat within the project area would result in significant contribution to cumulative impacts to Swainson's Hawks. However, the mitigation measures described above would reduce these cumulative impacts to less than significant levels.

Mitigation Measure H.8. Same as Mitigation Measure H.6.

[24] City of Patterson. 2003. West Patterson Projects: West Patterson Business Park Master Development Plan, Keystone Pacific Business Park and Patterson Gardens Final Environmental Impact Report. Prepared by Turnstone Consulting, January 9, 2003. State Clearing House Nos. 2001022031 and 20111032037.

INDIRECT IMPACTS

Impact H.9. Implementation of the Development Plan would result in indirect impacts to downstream biological resources. (Less than Significant with Mitigation)

The proposed project has the potential to degrade water quality within both laterals on the project site or in the reaches north of the project site, and in Del Puerto Creek at the terminus of Lateral 3 North as a result of pollution, sedimentation, and litter stemming from site construction. These factors could result in significant indirect effects to downstream biological resources.

The project, however, must comply with state and federal water quality regulations, including California's General Construction Stormwater Permit, which requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). SWPPPs are designed to manage stormwater quality degradation through best management practices during and after construction. These practices may include temporary drainage ditches, culverts, berms, and/or straw bales that confine stormwater and prevent it from carrying sedimentation off of the project site. Compliance with the SWPPP, identified in Mitigation Measure I.4a in Section III.I, Hydrology and Water Quality, would reduce the potential for indirect impacts to biological resources to less-than-significant levels.

Mitigation Measure H.9. Same as Mitigation Measure I.4a.

I. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the northeastern Patterson area, including runoff, drainage, and water quality. The analysis is based on information included in published and unpublished reports and consultation with City staff. Based on information collected, this section identifies impacts that may result from project development and suggests mitigation measures to reduce potential impacts.

SETTING

The existing conditions in the vicinity of the project site related to hydrology, storm drainage, and water quality are described below.

CLIMATE

The climate in Patterson is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warm, dry summers. The mean annual rainfall in the vicinity of the project site is approximately 11 inches.[1] The lowest rainfall year on record for the Modesto-Patterson area is 1913, recorded as having only 4.3 inches of rainfall; the highest recorded rainfall was 26.0 inches in 1983.[2]

The western U.S., including the Patterson area, periodically experiences a weather phenomenon referred to as the "Pineapple Express." The Pineapple Express is a Pacific Ocean subtropical jet stream that brings warm moist air from the Hawaii area (where pineapples are grown) into the region. The combination of moisture-laden air, atmospheric dynamics, and orographic[3] enhancement that results as this air passes over the mountain ranges of the West Coast causes some of the most torrential rains to occur in the region. Many major West Coast flooding events, such as the 1998 floods in the Central Valley, were caused by this weather phenomenon.

SURFACE WATER

Drainage and Flooding

The project site is located within the San Joaquin Valley, a relatively flat, structural and topographic trough. The primary source of surface water flows in the San Joaquin Valley is rainfall and snowmelt runoff from the Sierra Nevada range to the east. In general, runoff flows

[1] Western Regional Climate Center, 2002. Website http://www.wrcc.dri.edu/elimsmsfo.html, accessed May 2002.
[2] The City of Modesto, Engineering & Transportation Department, Capital Planning Division and the Modesto Irrigation District, *Urban Water Management Plan,* 2000.
[3] Of or pertaining to the physical geography of mountains and mountain ranges.

from the Sierra Nevada toward the west across alluvial fans and the valley floor in streams and rivers, including the Kings, Merced, Tuolumne, and Stanislaus Rivers. The secondary source of surface water flow, and the source more relevant to the project site, is local rainfall and runoff from the Coast Range to the west. These westward-flowing rivers and eastward flowing creeks join with the San Joaquin River on the west side of the valley, where the combined flows travel northwest toward the Delta and San Francisco Bay.

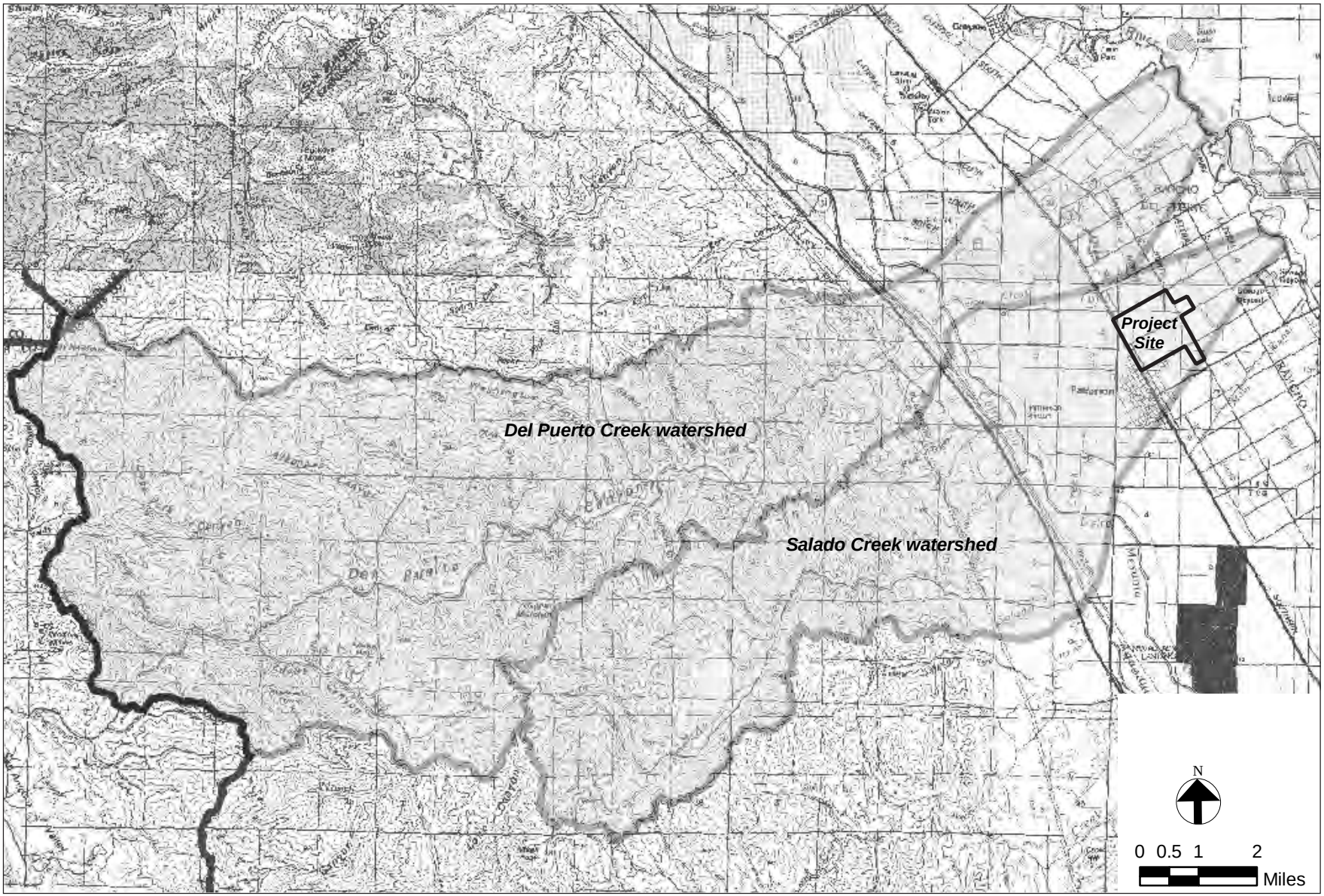
The project site is located between the San Joaquin River (to the east) and the Coast Range foothills (to the west). The drainage within this region is characterized by a series of generally eastward-flowing creeks, which drain the Coast Range uplands to the west and eventually discharge to the San Joaquin River. These creeks create alluvial fans[4] where they emerge from the foothills onto the valley floor. The project site is located at a topographically low point between the alluvial fans created by Salado and Del Puerto Creeks. Both Salado and Del Puerto Creeks eventually drain into the San Joaquin River.

Salado Creek is an intermittent stream with a drainage area of approximately 25 square miles upstream of Interstate-5 (**Figure III.I-1, Watersheds of Salado and Del Puerto Creeks, Stanislaus County, California)**. Salado Creek flows through the Coast Range uplands in a steep well-defined channel and through the foothills in a moderately-defined and sometimes incised channel. Within about one-half mile of its emergence from the foothills, the creek crosses the Delta Mendota Canal (DMC) through an overchute structure. North of the DMC, Salado Creek flows through gently northward-sloping irrigated agricultural land and through the City of Patterson.

Del Puerto Creek has a watershed of approximately 73 square miles, substantially larger than that of Salado Creek (Figure III.I-1). The DMC crosses under Del Puerto Creek in an underground siphon structure. The defined channel of Del Puerto Creek flows to the northeast from its point of emergence onto the valley floor to its confluence with the San Joaquin River, never coming within a mile of the project site. However, the mapped floodplain of Del Puerto Creek, which is described further below, does affect the site.

In a relatively undeveloped setting like the project site, when rainfall intensities exceed the infiltration capacity of surface soils, runoff flows over the ground surfaces toward topographically low areas and/or established drainage channels. Storm water runoff is then conveyed away from the area in creeks and streams. Prior to human development, the storm water generated in the uplands to the west would have flowed through the well-defined channels (now called Salado and Del Puerto Creeks) until it reached the valley floor, where the flowing

[4] An alluvial fan is cone-shaped deposit of sediments made by a stream where it runs out onto a level plane.



SOURCE: Balance Hydrologics, Inc.

FIGURE III.I-1: WATERSHEDS OF SALADO AND DEL PUERTO CREEKS, STANISLAUS COUNTY, CALIFORNIA

water would spread out over a large area on the relatively flat surface, losing most of its kinetic energy (velocity). Encroachment into this wide natural "floodplain" of these creeks on the valley floor by roadways, canals, and agricultural fields has resulted in narrowly constricted channels. In general, these constricted channels are capable of conveying typical base flow and small to moderate storm flow, but they cannot accommodate flows associated with large flood events.

Runoff associated with Del Puerto Creek directly affects the project site only during extreme storm events. However, prior to development in the vicinity, Salado Creek flowed through the project site. Recent drainage improvements in the vicinity of Highway 33 and the railroad tracks have directed the open channel flow of the creek into underground pipes (one 36-inch pipe and one 96-inch pipe). The pipes convey creek flows to the northeast until reaching Olive Avenue near the center of the project site. The pipe system continues to the northeast for approximately two miles before discharging to the San Joaquin River.

Based on the Federal Emergency Management Agency's (FEMA) 1989 Flood Insurance Study for Stanislaus County, flooding reportedly occurred in the Patterson/Newman area in 1954, 1955, 1957, 1958, 1959, 1963, 1968, 1969, 1978, 1980, 1983, and 1986. Since that report was published, flooding has occurred on Salado Creek several times in the 1990s, including 1995 and 1998. Based on the Flood Insurance Rate Map (FIRM), a substantial portion of the project site (the central and southern area) is located within the 100-year special flood hazard area (Zone AO) (**Figure III.I-2, Map of FEMA Special Flood Hazard Areas, City of Patterson and Adjacent Areas, Stanislaus County, California**).[5, 6] Zone AO is defined as "areas of shallow flooding where depths are between one (1) and three (3) feet…" The northern and eastern portions of the site are located within the FEMA-designated Zone B. Zone B is defined as "areas between limits of the 100-year and 500-year flood; or certain areas subject to 100-year flooding with an average depth less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood." In this case, the Zone B designation is for "areas subject to 100-year flooding with an average depth less than one (1) foot." The FIRM indicates that as the Zone AO flood waters move through the project site, they would be expected to spread out and the depth of flooding would decrease (to less than one foot) and at that location the designation changes from Zone AO to Zone B.

[5] Federal Emergency Management Agency, Flood Insurance Rate Map for Stanislaus County, California, Community Panel Number 060384 0685B and 060384 0705C, September 29, 1989.
[6] Federal Emergency Management Agency, Flood Insurance Rate Map for City of Patterson Community Panel Number 060390 0001D, 1990.

SOURCE: FEMA, 1989, 1990
Balance Hydrologics, 2006

FIGURE III.I-2: MAP OF FEMA SPECIAL FLOOD HAZARD AREAS, CITY OF PATTERSON AND ADJACENT AREAS, STANISLAUS COUNTY, CALIFORNIA

The FEMA-mapped special flood hazard zone occurs at the site as a result of the site's location in a relatively low topographic area between the alluvial fans for Salado and Del Puerto Creeks. Interpretation of the Flood Insurance Studies completed by FEMA in 1987 indicates that the combined 100-year storm event flood discharges of Salado and Del Puerto Creeks flowing through the site are estimated to be approximately 2,400 cubic feet per second.[7] It should be noted that this magnitude of flood flow is considered a low probability (statistically estimated to occur once every 100 years).

Flooding can also occur as a result of catastrophic dam failure and the release of waters contained in upstream reservoirs. The Villages of Patterson project area is not located within identified dam failure inundation hazard areas.[8] At coastal locations, flood hazards may include tsunamis, extreme high tides, and/or sea level rise. The inland location and the elevation of the study area would protect the area from coastal hazards.

WATER QUALITY

Surface Water Quality

Salado and Del Puerto Creeks drain sparsely developed lands in the uplands to the west. Cattle grazing occurs in the upland portions of the watersheds, which may result in elevated levels of nutrients, pathogens, and sediment in the creek water. In addition, Salado and Del Puerto Creeks receive tailwater discharges from agricultural operations, and therefore may contain residual pesticides, herbicides, and nutrients from this source. Upstream of the project site, Salado Creek may receive urban pollutants (petroleum hydrocarbons, metals, sediment) from roadway and industrial site runoff through the City of Patterson storm drainage collection and conveyance system.

Runoff from the project site drains to the San Joaquin River approximately two miles east of the project area. The San Joaquin River, which drains the northern portion of the San Joaquin Valley, carries substantial amounts of agricultural return water or drainage. The San Joaquin River in the vicinity of the City of Patterson is designated as "impaired" by the Central Valley Regional Water Quality Control Board (RWQCB) for numerous pollutants under the Clean Water Act Section 303(d).[9] The 2002 303(d) list indicates that the San Joaquin River in the vicinity of the project site is impaired for the following pollutants: boron, chlorpyrifos, DDT, diazinon, electrical conductivity, group A pesticides, mercury, and unknown toxicity. Agriculture has been

[7] Ballman, Edward, Civil Engineer-Hydrologist, Balance Hydrologics, personal communication with Bruce Abelli-Amen of BASELINE, March 16, 2006.
[8] Based on review of the dam inundation maps provided by the California Office of Emergency Services.
[9] State of California, Regional Water Quality Control Board, Central Valley Region, Section 303(d), Clean Water Act, Impaired Water Body Lists, 1998. Available at the RWQCB website: http://www.swrcb.ca.gov/rwqcb5/programs/tmdl/index.

identified as the source for each of these pollutants (with the exception of mercury and unknown toxicity).

Groundwater Quality

There are three physiographic regions within the San Joaquin Valley: 1) the western alluvial fan, the eastern alluvial fan, and the basin.[10] The project area is located within the western alluvial fan region in a subbasin referred to as the Delta-Mendota Groundwater Basin (as designated by the California Department of Water Resources). The sediments in the western alluvial fan region are generally poorly sorted and derived from marine sedimentary rocks (with some continental sedimentary and volcanic rocks) of the Coast Ranges.[11] Groundwater occurs in the geologic materials underlying the site in discrete water-bearing zones or "aquifers". The uppermost zone (from the ground surface to a depth of about 250 feet) is composed of a heterogeneous mixture of gravel, sand, silt, and clay.[12] At a depth of approximately 250 to 300 feet below the surface, a lacustrine clay deposit known as the "modified E clay" or "Corcoran Clay" occurs in the vicinity of the site and acts as a confining layer (or aquitard) for the aquifer below. The City of Patterson, which relies almost exclusively on groundwater, operates five wells that draw groundwater from the confined aquifer (below the Corcoran Clay). This water contains elevated levels of salt,[13] averaging 900 mg/L. The levels of salts in water supplied by Patterson do not exceed state drinking water standards.[14]

Salt loading is a water quality issue of concern in the San Joaquin Valley. As stated in the Water Quality Control Plan (Basin Plan):[15]

> Salt management is becoming increasingly important in the San Joaquin Valley for urban and agricultural interests. If current practices for discharging water containing elevated levels of salt continue unabated, the San Joaquin Valley can have a large portion of its groundwater severely degraded within a few decades.

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[10] Dubrovsky, N.M., C.R. Kratzer, L.R. Brown, J.M. Gronberg, and L.R. Burow, *Water Quality in the San Joaquin-Tulare Basins, California, 1992-95*: USGS Circular 1159, 1998.

[11] Burow, K.R., Shelton, J.L., Dubrovsky, N.M., *Occurrence of Nitrate and Pesticides in Ground Water Beneath Three Agricultural Land-Use Settings in the Eastern San Joaquin Valley, California, 1993-1995*, U.S. Geological Survey, Water Resources Investigation Report 97-4284, 1998.

[12] Page, R.W., *Geology of Fresh Ground-Water Basin of the Central Valley, California, with Texture Maps and Sections*, U.S. Geological Survey Professional Paper 1401-C, 1986.

[13] The term "salt" refers to unspecified dissolved ions in water. The salt content is typically quantified as total dissolved solids (TDS) in mg/L or electrical conductivity in mhos/cm.

[14] Stoddard and Associates, *Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County*, April 1996.

[15] California Regional Water Quality Control Board Central Valley Region, *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, The Sacramento River Basin and the San Joaquin River Basin*, 1994, p. IV-2.00.

Salts (generally measured as total dissolved solids [TDS]) are introduced into the basin with imported water supplies. Although the water may leave the basin by evaporation, evapotranspiration, or through the San Joaquin River, much of the salts stay behind, potentially leading to a build-up of salt in the soil and groundwater. Excessive salt loading can result in a degraded water supply, particularly if concentrations exceed the Secondary Drinking Water standard of 1,000 mg/L (upper limit). Salt loading of managed groundwater basins is an important issue throughout the San Joaquin Valley. In addition, many of the naturally-occurring deposits in the vicinity of the project area, particularly in the mountains to the west, are of marine origin and, therefore, have high salt content.

The contribution of human activities (e.g., agriculture, groundwater pumping, water transfers) to the salt balance has been investigated. A United States Geological Survey (USGS) study was conducted in the Sacramento Valley of California to determine whether human activities had affected groundwater quality through time.[16] Substantial increases in TDS and nitrates were observed since the 1950s, indicating that groundwater quality was degraded as a result of increasing application of agricultural chemicals and growth in urban populations. No similar studies for the San Joaquin Valley were reported, but "because agricultural practices in the San Joaquin Valley are similar to those of the Sacramento Valley, it is likely that groundwater quality in the San Joaquin Valley is also degrading as a result of human activity."[17]

A subsequent study conducted by the USGS on nitrate and pesticide trends in groundwater in the eastern San Joaquin Valley[18] indicates that groundwater drinking water supplies have been degraded by fertilizers and pesticides. Of approximately 100 various types of wells monitored, nitrate concentrations exceeded U.S. EPA drinking water standards about one-fourth of the time and pesticides were identified about two-thirds of the time (although mostly at low concentrations).

REGULATORY FRAMEWORK

Federal Emergency Management Agency

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

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[16] Bertoldi, G.L., R.H. Johnston, and K.D. Evenson, *Ground Water in the Central Valley, California - A Summary Report*, U.S. Geological Survey Professional Paper 1401-A, 1991.
[17] Ibid.
[18] Dubrovsky, N.M., C.R. Kratzer, L.R. Brown, J.M. Gronberg, and L.R. Burow, *Water Quality in the San Joaquin-Tulare Basins, California, 1992-95*: USGS Circular 1159, 1998.

The NFIP is managed by the Federal Emergency Management Agency (FEMA). FEMA is responsible for conducting floodplain studies and publishing Flood Insurance Rate Maps (FIRM) that delineate flood hazard areas. The City of Patterson and Stanislaus County are participating communities in the NFIP, and therefore all new development must comply with the minimum requirements of the NFIP.

Regional Water Quality Control Board

Water quality in surface and ground water bodies is regulated by the State and Regional Water Quality Control Boards. The County is under the jurisdiction of the Central Valley RWQCB, which is responsible for implementation of State and Federal water quality protection guidelines in the vicinity of the project area. The RWQCB implements the Water Quality Control Plan (Basin Plan),[19] a master policy document for managing water quality issues in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region. Beneficial uses of surface waters in the Central Valley include water contact recreation, noncontact water recreation, industrial service supply, irrigation supply, navigation, shellfish harvesting, fishing, and preservation of rare and endangered species. Beneficial uses of the groundwater aquifer include municipal and domestic supply, industrial process supply, industrial service supply, and agricultural supply.

Runoff water quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Nonpoint Source Program (established through the Federal Clean Water Act). The NPDES Nonpoint Source Program objective is to control and reduce pollutants to water bodies from nonpoint discharges. The Program is administered by the California Regional Water Quality Control Boards. Two nonpoint source NPDES permits – the General Construction Permit and the General Industrial Permit – and the Municipal Separate Storm Sewer System Program, described below, are relevant to the City of Patterson and development proposed by the project.

General Construction Permit

Projects disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. A developer must propose control measures that are consistent with the State General Permit. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. An SWPPP should include Best Management Practices (BMPs) designed to

[19] California Regional Water Quality Control Board Central Valley Region, *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, The Sacramento River Basin and the San Joaquin River Basin,* 1994.

reduce potential impacts to surface water quality throughout the construction and life of the project. The specific project that has been proposed, the Villages of Patterson Development Plan, exceeds five acres and would be required to comply with the General Permit.

General Industrial Permit

The control of nonpoint source runoff from industrial sources and associated pollutants is regulated in California by the State Water Resources Control Board under the statewide General Permit for Stormwater Discharges Associated with Industrial Activities. The General Permit presents the requirements for compliance of certain industries with the NPDES. A wide range of industries is covered under the General Permit, including mining operations, lumber and wood products facilities, petroleum refining, metal industries, and some agricultural product facilities such as dairies.

Based on the information available, it appears that the General Permit for Industrial Activities would apply to some proposed uses in the Light Industrial areas of the Plan Area. The Villages of Patterson proposal includes residential and commercial uses (General Permit for Industrial Activities would not apply) and a range of industrial uses that may include the types of facilities covered by this General Permit. If the project were to include industrial activity covered by this General Permit, those specific uses would be required to comply with the General Permit for Industrial Activities.

Municipal Separate Storm Sewer System Program

The Storm Water Phase II Final Rule applies to operators of regulated small municipal separate storm sewer systems (MS4s). Under the NPDES storm water program, operators of large, medium, and regulated small MS4s require authorization to discharge pollutants under an NPDES permit. Medium and large operators are required to submit comprehensive permit applications and are issued individual permits. Patterson is a regulated small MS4 operator and submitted an application to be covered under the General Permit[20] in January 2004.

A Storm Water Management Program (SWMP)[21] to comply with the Small MS4 General Permit was prepared and submitted to the State Water Resources Control Board by the co-permittees (the participating city agencies). The SWMP describes the program to be implemented by the City agencies. The City of Patterson is legally obligated to implement the requirements of the SWMP

[20] State Water Resources Control Board, *Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Permit)*, NPDES No. CAS000004, 2003. Available at: http://www.swrcb.ca.gov/stormwtr/phase_ii_municipal.html
[21] Tulloch Engineering, *Storm Water Management Program for the Cities of Ceres, Oakdale, Patterson, Riverbank, Report of Waste Discharge*, March 10, 2003.

and to comply with the requirements of the small MS4 General Permit, which include the following (excerpt from the General Permit):

> The Permittee must require long-term post-construction BMPs that protect water quality and control runoff flow, to be incorporated into development and significant redevelopment projects. Post-construction programs are most efficient when they stress (i) low impact design; (ii) source controls; and (iii) treatment controls.

In addition, projects disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. A developer must propose control measures that are consistent with the State General Permit. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site, as noted above under General Construction Permit.

The Reclamation Board, State of California Resources Agency

The Reclamation Board is charged with controlling flooding along the Sacramento and San Joaquin Rivers and their tributaries in cooperation with the U.S. Army Corps of Engineers. The Board cooperates with various federal, state and local governments in establishing, planning, constructing, operating, and maintaining flood control works.

State law (Water Code Sections 8534, 8608, 8609, 8710 and 8723) tasks the Reclamation Board with enforcing appropriate standards for the construction, maintenance, and protection of adopted flood control plans. Regulations implementing these directives are found in California Code of Regulations (CCR) Title 23, Division 1. The Reclamation Board ensures the integrity of the flood control system through a permit process (Water Code Section 8710). A permit must be obtained prior to initiating any activity, including excavation and construction, removal or planting of landscaping within floodways, levees, and ten feet landward of the landside levee toes. Additionally, activities located outside of the adopted plan of flood control but which may foreseeably interfere with the functioning or operation of the plan of flood control are also subject to a permit of the Reclamation Board [CCR Title 23 Section 6(c)]. At this time it is uncertain whether the proposed project would require a permit from the Reclamation Board. If a permit is required for the actions proposed, the project sponsor would comply with these requirements.

City of Patterson General Plan and Ordinances

The City of Patterson General Plan includes the following policies that relate to water quality and flooding:

Water Quality

- *Policy VI.A.1*: The City shall prohibit the establishment of any new septic systems within areas where City sewer and water service will be available in the foreseeable future.
- *Policy VI.A.2*: The City shall seek the elimination of existing septic tanks in urbanized areas.
- *Policy VI.A.3:* In reviewing major new development proposals, the City shall consider the project's potential for adversely affecting water quality in the San Joaquin River and the area's groundwater resources.
- *Policy VI.A.4*: The City shall regularly monitor water quality in City wells for evidence of toxics, saltwater intrusion, and other contaminants.
- *Policy VI.A.5*: The City shall utilize the CEQA process to identify and avoid or mitigate potential groundwater pollution problems resulting from new commercial and industrial development.
- *Policy VI.A.6:* The City shall support efforts at the county, regional, and statewide levels to reduce runoff of toxic agricultural chemicals into Salado Creek and the San Joaquin River.
- *Policy VI.A.7:* The City shall implement measures to minimize the discharge of sediment into Salado Creek and the San Joaquin River.

Flooding

- *Policy VII.B.1:* The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that its regulations are in full compliance with standards adopted by the Federal Emergency Management Agency.
- *Policy VII.B.2*: New residential development, including mobile homes, shall be constructed so that the lowest floor is at least 12 inches above the 100-year flood level.
- *Policy VII.B.3*: Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the 100-year flood level.
- *Policy VII.B.4*: Existing development shall comply with policies B.2. and B.3. when improvements are made costing at least 50 percent of the estimated current market value of the structure before the improvements.
- *Policy VII.B.5*: Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.
- *Policy VII.B.6*: The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.

The City of Patterson ordinances include requirements for flood damage prevention:

17.12.030 Standards for Subdivisions.

A. All preliminary subdivision proposals shall identify the flood hazard area and the elevation of the base flood.

B. All final subdivision plans will provide the elevation of proposed structure(s) and pads. If the site is filled above the base flood, the final pad elevation shall be certified by a registered professional engineer or surveyor and provided to the floodplain administrator.

C. All subdivision proposals shall be consistent with the need to minimize flood damage.

D. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

E. All subdivisions shall provide adequate drainage to reduce exposure to flood hazards. (Ord. 419 § 5.3, 1987)

IMPACTS AND MITIGATION

SIGNIFICANCE CRITERIA

Development of the proposed project would have a significant impact if it were to result in:

- An increase in the frequency and/or magnitude of flooding events at the site or in the region;
- Alteration of drainage patterns that could exacerbate flooding problems;
- Exposure of life and property to increased flood hazards as defined by FEMA;

- Substantial degradation of water quality, including violation of applicable water quality standards;
- Substantial interference with groundwater recharge or depletion of groundwater supplies.

PROJECT IMPACTS AND MITIGATION

Impact I.1. Placement of housing and other types of development in areas subject to flooding could result in severe hardship and property damage for project occupants. (Less than Significant with Mitigation)

The portions of the project site within FEMA zones AO and B may be susceptible to flooding during an extreme storm event. Interpretation of the FEMA Flood Insurance Study data that was used to develop the flood hazard mapping for the area indicates that flood flows of up to 2,400 cubic feet per second could pass through the site during the 100-year flood event. Unmitigated, this magnitude of flood flow could cause injuries and/or substantial damage to proposed project elements, including residential buildings. This is a significant impact.

The location of the proposed project occupies the overland flow path for a large portion of the overflow from Del Puerto Creek in extreme flood events. Therefore, it is not possible for the project to simply raise pad elevations above predicted base flood elevations without potentially impacting upslope areas due to obstruction of the flood flowpath. The preliminary hydraulic design for the proposed project specifies that the proposed Garcia Way and reconstructed Olive Avenue be designed to convey the flood flows (i.e., flood waters would flow over the street surfaces and be contained within the street right-of-way.[22] This design is preliminary and requires additional hydraulic engineering.

Upon completion of construction of the new 100-year flood conveyance features at the project site, much of the proposed Villages of Patterson development would still be located in FEMA-designated flood hazard zones (even though the FEMA floodplain would no longer represent actual flooding conditions because the project would direct the flows to the streets). To comply with the National Flood Insurance Program and City of Patterson policies, the development would be required to ensure that the elevation of all residential finished floors on lots adjacent to the 1 percent chance floodplain are at least one foot above the new 100-year flood elevation. Additionally, a formal revision of the FEMA flood hazard mapping would need to be completed to remove the requirement of purchasing flood insurance in those areas currently mapped in Zone AO.

[22] Irwin, Ken, Professional Engineer, GDR Engineering, personal communication with Bruce Abelli-Amen of BASELINE, March 30, 2006.

Mitigation Measure I.1a

The proposed project drainage plan shall include designs for permanent conveyances features capable of passing the 100-year flood flows through the site. The drainage design shall demonstrate, through detailed hydraulic analysis, that FEMA-estimated flood flows would be conveyed within the conveyance features (i.e. housing and other susceptible development shall not be inundated). The proposed drainage plan shall be reviewed and approved by the City of Patterson Public Works Department. The City shall conduct inspections to ensure that the drainage plan is implemented during project construction.

Mitigation Measure I.1b

The project proponent shall design and construct the project so that the lowest finished floors of all residential buildings on lots adjacent to the 1 percent chance floodplain will be elevated at least one foot above the local 100-year flood elevation identified by the hydraulic analyses called for in Measure I.1a. The finished floor elevations shall be confirmed by a licensed surveyor prior to issuance of occupancy permits. Compliance with the requirements of the NFIP will be further documented by processing of a Letter of Map Revision with FEMA, which will update the mapping of the special flood hazard areas to appropriately depict the post-project conditions.

Implementation of Mitigation Measures I.1a and I.1b would reduce this impact to a less-than-significant level.

Impact I.2. Impervious surfaces and placement of structures in a floodplain would increase the amount of runoff, potentially exacerbating existing local flooding problems downstream of the Plan Area. (Less than Significant with Mitigation)

Development of the project area would result in more surface area covered by impervious surfaces (buildings, paved roadways, sidewalks, and parking lots) relative to existing conditions. Undeveloped, gently sloping lands (the existing condition) generally have low runoff coefficients, meaning that they yield a relatively small portion of the total rainfall as runoff. Much of the precipitation infiltrates into the subsurface. Impervious surfaces yield nearly all rainfall as runoff because infiltration is greatly reduced. Increased runoff volume and the increased rate of delivery of runoff to storm water conveyances could exceed the capacity of downstream drainage ways, causing localized flooding. In addition, placement of structures in the Zone AO and B flood hazard areas could displace existing floodwater storage capacity, increasing flooding problems downstream.

The draft *Villages of Patterson Storm Drainage Study and Master Plan*[23] describes the proposed approach to storm water management at the developed project site. Under the proposed project, the existing detention basin located northeast of the intersection of Olive and Sycamore Avenues would be expanded to accommodate increased runoff from the project site. The existing detention basin is designed to detain 40 acre-feet of storm water (runoff collected from the downtown area of the City of Patterson served by the Walnut/Sycamore Avenue storm drain line). The combined detention requirement of the expanded basin, which would receive stormwater flows from the Walnut/Sycamore storm drain line and the new Villages of Patterson development, would be 98 acre-feet based on a City of Patterson design criteria of the 10-year, 24-hour storm event. The current design of the expanded basin includes approximately 80 acre-feet of freeboard storage.[24] Discharge from the detention basin would be through the 96-inch storm drain running along Olive Avenue for ultimate discharge to the San Joaquin River.

During extreme storm events associated with overflow from Del Puerto Creek reaching the basin, it is possible the capacity of the expanded detention basin would be exceeded. The basin would be designed so that the north and east (downstream) sides of the basin would be overtopped first and flood waters would be dispersed over a wide area.[25] The basin would be designed to return flood flows to relatively flat lands northeast of the project site if the capacity of the basin was exceeded (essentially returning the flood flows to the path that they would take under existing conditions).

As described in Impact and Mitigation Measure I.1, the project would reshape the 100-year floodplain through the Villages of Patterson site. Upon project implementation, the existing broad floodplain area would be replaced by relatively narrow flood conveyances. By restricting the area inundated at the site, the project would remove available floodplain storage, potentially increasing base flood elevations downslope.

The existing land use of the area downstream of the project site is rural, with relatively few residences or other structures that would be considered highly vulnerable to infrequent shallow flooding events. The applicant's engineering team has conducted a survey all the residences downstream of the project site that could be affected by the potential project-related incremental increase in 100-year flood level elevations.[26] This survey determined that all of the finished floor elevations of the existing residences are greater than ten inches above surrounding grade. The

[23] GDR Engineering, Inc., *Villages of Patterson Storm Drainage Study and Master Plan*, July 2005.
[24] Freeboard is the storage area between the maximum design water level and the top of the lowest bank of the basin.
[25] Irwin, Ken, Professional Engineer, GDR Engineering, personal communication with Bruce Abelli-Amen of BASELINE, March 30, 2006.
[26] Balance Hydrologics, Inc., 2006, Elevations of Predicted Overland Flooding and Occupied Structures Lower Floors East of the Villages of Patterson Project, City of Patterson, letter to Mr. Joe Hollowell, Terra Firma Entitlement Company, June 30.

maximum predicted depth of flooding (under both pre- and post-project conditions) is less than five inches. Therefore, provided the flood waters are properly dispersed at the eastern project boundary, none of the existing residences would be expected to be significantly impacted by the project. Implementation of Mitigation Measure I.2, which requires that the site and ancillary features be designed and graded for proper floodwater dispersal, would reduce this potential impact to a less-than-significant level.

Mitigation Measure I.2

The expanded detention basin and improvements to Sycamore Avenue shall be designed so that any overland flow is released uniformly at low velocity and with flow depths less than ten inches. Design-level drainage plans for each phase of development of the Plan Area shall be submitted to the City of Patterson for review and approval.

Impact I.3. The increase in impervious surfaces could adversely affect groundwater recharge. (Less than Significant)

A substantial increase in impervious cover (e.g., structures, roads, and parking lots) could reduce the quantity of rainfall and/or irrigation water that infiltrates into the subsurface and recharges the shallow aquifer. However, implementation of the proposed Villages of Patterson project would not be expected to result in a significant impact to groundwater recharge for two reasons: 1) the project area is small relative to the size of the groundwater basin, which is largely undeveloped; and 2) features included in the project design, including substantial on-site detention of storm water, would to some degree offset the reduced infiltration that would occur in those areas covered by impervious surfaces.

The project area covers approximately 670 acres. The Delta-Mendota groundwater basin, which underlies the project area, covers an area of 736,000 acres. The entire project area represents approximately one-tenth of a percent of the surface area of the groundwater basin.

In addition, the project would include water features and storm water drainage basins that would collect and detain runoff prior to discharge. Since the detention basins would be constructed in native soils, some infiltration would occur. As the water depths increased in the basins during storm events, the infiltration rates would likely increase with the greater depth (hydraulic head) further increasing groundwater recharge.

This impact is considered less than significant without mitigation.

Mitigation Measure. No mitigation necessary.

Impact I.4. Construction activities and post-construction land uses could result in degradation of water quality in nearby surface water bodies by reducing the quality of storm water runoff. (Less than Significant with Mitigation)

Construction-Period Impacts

Under existing conditions, much of the project area is regularly plowed for row crop agriculture, which results in regular disturbance of surface soils. However, standard agricultural practices limit erosion by timing of plowing operations and orientation of plowed rows. Construction and grading within the project area could result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavated areas would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in off-site receiving waters and eventually the San Joaquin River.

The potential for chemical releases is present at most construction sites. Once released, substances such as fuels, oils, paints, and solvents could be transported to surface waters and/or groundwater in storm water runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

Operation-Period Impacts

New construction and intensified land uses at the project area would result in increased vehicle use and potential discharge of associated pollutants. Leaks of fuel or lubricants, tire wear, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Runoff from the proposed common landscaped areas and individual home sites may contain residual pesticides and nutrients. Long-term degradation of the quality of runoff from the site could impact the quality of receiving waters.

Mitigation Measure I.4a

Each developer who proposes to carry out construction within the project area shall prepare and implement an SWPPP designed to reduce potential impacts to surface water quality through the construction and life of the project whether or not the development site is over one acre. The SWPPP would act as the overall program document designed to provide measures to mitigate potential water quality impacts associated with implementation of the proposed project. It is not required that the SWPPP be submitted to the RWQCB, but must be maintained on-site and made available to RWQCB staff upon request. The SWPPP shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with storm water. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain.

An important component of the storm water quality protection effort is educating the site supervisors and workers about practices and procedures. To educate on-site personnel and maintain awareness of the importance of storm water quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.

The SWPPP shall specify a monitoring program to be implemented by the construction site supervisor, and must include both dry and wet weather inspections. In addition, in accordance with State Water Resources Control Board Resolution No. 2001-046,[27] monitoring would be required during the construction period for pollutants that may be present in the runoff that are "not visually detectable in runoff."[28] Each developer shall retain an independent monitor to conduct regular inspections and provide written reports to the City of Patterson Public Works Department to ensure compliance with the SWPPP. RWQCB personnel, who may make unannounced site inspections, are empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented.

BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, watering for dust control, perimeter silt fences, placement of hay bales, and sediment basins. The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control, that is, keeping sediment on the site. End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions.

Mitigation Measure I.4b

As a condition of approval of the final grading plans, the project sponsor shall prepare a Project Stormwater Management Plan (SMP) to be reviewed and approved by the City Engineer for the Plan Area. The SMP will be the guiding document detailing practices for mitigating water quality in the post-construction phase. The SMP shall provide operations and maintenance guidelines for all of the BMPs identified in the SMP, include measures designed to mitigate

[27] State Water Resources Control Board, Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity, 2001.

[28] Construction materials and compounds that are not stored in water-tight containers under a water-tight roof or inside a building are examples of materials for which the discharger may have to implement sampling and analysis procedures.

potential water quality degradation of runoff from all portions of the completed development (including roof and sidewalk runoff), and clearly identify the funding sources for the required on-going maintenance. The project sponsor or the consultant retained by the sponsor to prepare the SMP shall thoroughly review and comply with the requirements of the most current municipal Phase II General Permit for storm water discharges (Order No. 2003-0005-DWQ). In general, passive, low-maintenance BMPs are preferred.

Yet to be developed residential, commercial, and light industrial parcels generally provide many opportunities for innovative storm water management, including permeable pavers, concave lawn/infiltration basins, grassy swales, and dry-wells connected to roof downspouts. The final design team for each development project in the Plan Area shall review and incorporate the concepts included in *Start at the Source, Design Guidance Manual for Stormwater Quality Protection*[29] in the project design, and shall prepare an SWPPP in compliance with the Project SMP.

The City of Patterson Department of Public Works shall ensure that the Project Stormwater Management Plan is prepared prior to approval of any grading plans. The City of Patterson Department of Public Works shall review and ensure that the SWPPP for each development project within the Plan Area complies with or updates the Project Stormwater Management Plan.

Implementation of this mitigation would reduce this impact to a less-than-significant level.

Impact I.5. Existing water supply wells at the project area, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality. (Less than Significant with Mitigation)

There are numerous water supply wells located on the project area. If any of the wells were not fitted with effective sanitary seals upon construction, or if any seals have been damaged since installation or were to be damaged during grading and construction for the Villages of Patterson project, surface water (potentially containing pollutants) could seep into the wells and the underlying aquifer, causing water quality degradation.

Mitigation Measure I.5

Prior to approval of a grading plan for development of a particular parcel or subarea of the project area, a well survey shall be conducted to determine the location and characteristics of each well

[29] Bay Area Stormwater Management Agencies Association, *Start at the Source, Design Guidance Manual for Stormwater Quality Protection,* 1999.

for that particular parcel or subarea. The survey shall be conducted and documented by a State-registered geologist or engineer, and the results submitted to the City for review.

The water supply wells shall either be:

1. Properly abandoned in compliance with the California Department of Water Resources, California Well Standards and Stanislaus County Code, Chapter 9.36 prior to final approval of the grading plan, or
2. Inspected by a qualified professional to determine whether each well is properly sealed at the surface to prevent infiltration of water-borne contaminants into the well casing or surrounding gravel pack. The California Well Standards require an annular surface seal of at least 20 feet. If any of the wells are found not to comply with this requirement, the applicant shall retain a qualified well driller to install the required seal. Documentation of the inspections and seal installations, if any, shall be provided to the City prior to final approval of the grading plan.

Implementation of this mitigation would reduce the level of significance of this impact to a less-than-significant level.

Impact I.6. The proposed change in land use at the project area could affect regional groundwater quality. (Less than Significant)

It is possible that the proposed project, while adequately mitigating project site-related water quality impacts, could contribute to regional groundwater quality degradation. In particular, the project will contribute salt loading to the basin by allowing the application of irrigation water to residential and commercial landscaping (and other incidental uses). However, relative to existing salt loading associated with agricultural production, it is estimated that based on existing and proposed irrigation patterns, the proposed project would reduce total on-site salt load.

In the previously approved West Patterson Projects EIR,[30] the salt loading levels associated with typical agricultural use patterns and typical residential /commercial uses were evaluated. The West Patterson Projects EIR found that residential and commercial land uses tend to apply less irrigation water and agricultural chemicals than agricultural land uses. Therefore, the proposed project, which converts agricultural land use to commercial/residential use, would be expected to reduce overall salt loading levels.

Mitigation Measure. No mitigation necessary.

[30] City of Patterson, *West Patterson Projects Final Environmental Impact Report*, Certified January 9, 2003; Chapter III, Section H.

J. WATER SUPPLY

This section analyzes water demand associated with the Villages of Patterson project, in addition to existing water demand and that associated with projected growth through 2030 under the City's General Plan; identifies existing and proposed future sources of water supply to serve that demand; and analyzes the reasonably foreseeable environmental impacts associated with serving that demand. This analysis is based primarily on the Water Supply Assessment for the Villages of Patterson (WSA)[1] and the City's General Plan. A copy of the Draft WSA is provided in Appendix E to this EIR. The analysis also employs information in the City's Urban Water Management Plan (UWMP),[2] adopted by the City of Patterson City Council on August 6, 2002.

SETTING

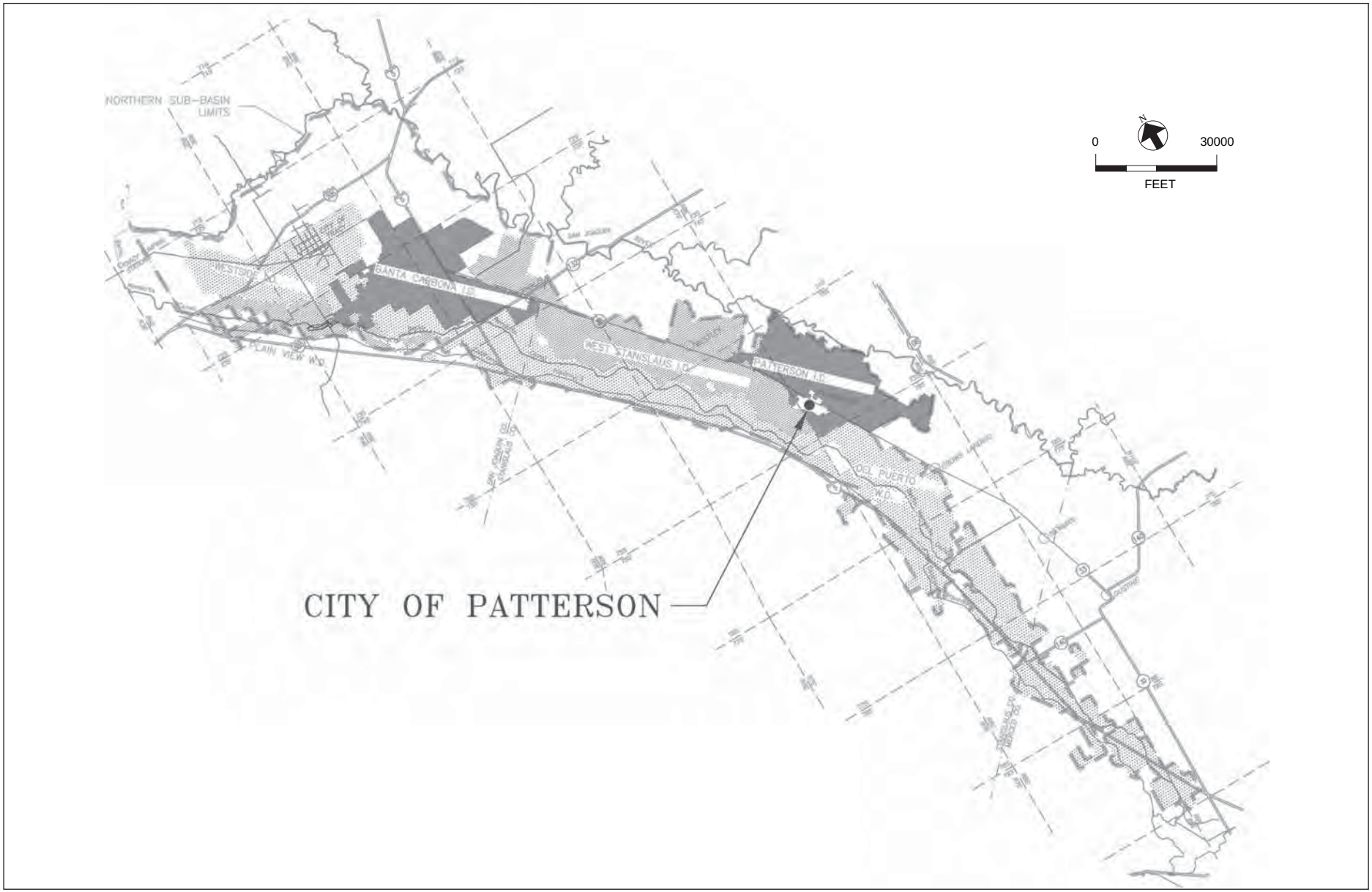
REGIONAL AND LOCAL SETTING

The City of Patterson supplies potable water for residential, commercial and industrial uses within its service area. Water for agricultural use is provided by the surrounding irrigation districts that use surface supplies; some properties in agricultural production use groundwater. The City of Patterson does not use any surface water to supply to customers.

Groundwater

The City of Patterson has historically satisfied all of its demand for water from the underlying groundwater. The City lies within the Delta-Mendota Groundwater Subbasin ("the Subbasin"), as defined by the California Department of Water Resources (DWR).[3] The Basin encompasses 747,000 acres of land extending along the western side of the San Joaquin Valley between the San Joaquin River and the western edge of the Valley alluvium, from the Stanislaus/San Joaquin County line through Stanislaus and Merced Counties into Fresno County to the boundary of the Westlands Water District south of the City of Firebaugh. A regional Groundwater Management Plan prepared by the San Luis & Delta Mendota Water Authority (SLDMWA) identified three subbasins – a Northern Subbasin, a Central Subbasin, and a Southern Subbasin, in the City's vicinity.[4] As shown in **Figure III.J-1: Location of the Northern Subbasin**, the City of Patterson is located in the Northern Subbasin.

[1] The H20 Group, *Water Supply Assessment for The Villages of Patterson*, July 2006 (hereinafter referred to as H2O Group, WSA, July 2006).
[2] City of Patterson, *Year 2000 Urban Water Management Plan*, August 2002.
[3] California Department of Water Resources, Bulletin 118, *San Joaquin Valley Groundwater Basin Delta-Mendota Subbasin*, updated 1/20/06.
[4] City of Patterson, *2000 Urban Water Management Plan*, 2002, p. 14.



SOURCE: Stoddard & Associates

FIGURE III.J-1: LOCATION OF THE NORTHERN SUBBASIN

In the City's vicinity, groundwater is found in a shallow unconfined aquifer and a deeper confined aquifer, hydraulically separated by a thick layer of fine-textured soils known as Corcoran Clay. The depth from the surface to the bottom of the Corcoran Clay layer varies from approximately 100 feet west of the City near I-5 to 350 feet east of the City.[5] The confined aquifer lying below that depth is the primary source of the City's water supply, as discussed further below. The shallow aquifer supplies groundwater to some existing agricultural water users in the Villages of Patterson project vicinity as well as for various domestic wells. A substantial component of the recharge to the shallow aquifer is believed to be percolation from applied irrigation water. The confined aquifer is recharged primarily by lateral inflow from the south and southeast.

The San Luis Delta-Mendota Water Authority prepared a regional groundwater management plan (GMP) that analyzed the Delta-Mendota Groundwater Sub-Basin. Although the City of Patterson was and is not a participant in the plan or the Water Authority, the plan includes detailed information about the Northern Sub-Basin that underlies Patterson.[6] As summarized in the WSA, the GMP estimated sustainable yield, basin-wide groundwater pumping during an eight-year study period, and determined the impacts on the groundwater basin of exports of water through the Delta-Mendota Canal. According to the results of the GMP studies, the northern portion of the sub-basin was in a hydrologically balanced condition during the 8-year study period. The GMP projected that under normal conditions there would be an annual increase in water storage of 35,000 AF. The outflow from the groundwater basin to the San Joaquin River varied annually between about 73,000 AF per year to 185,000 AF per year. This suggests that an increase in pumping of more than 35,000 AF per year, could occur without causing an overdraft condition.

Recent studies have confirmed that groundwater in the City's vicinity is not overdrafted.[7] In 2002, in preparing the UWMP, the City undertook a study of the groundwater in the Patterson vicinity.[8] That study revealed a total quantity of at least 80,000 acre-feet[9] (AF) of water in the aquifer beneath the City, 30,000 to 50,000 AF of which were estimated to be of adequate water quality for municipal and industrial uses served by the City. The 2002 study estimated a total of 9,300 AF of annual recharge to both aquifers, not including seepage from irrigation and Salado and Del Puerto Creeks. However, the additional groundwater studies conducted in 2006 found

[5] City of Patterson, *Final Environmental Impact Report for West Patterson Projects*, 2003, p. III.I.11.
[6] H2O Group WSA, July 2006, p. 9.
[7] These studies are discussed in Appendix D to the *2000 Urban Water Management Plan*.
[8] City of Patterson, *2000 Urban Water Management Plan*, 2002, p. 14.
[9] One acre-foot is equal to 325,851 gallons.

that the recharge is substantially higher, approximately 11,500 AF per year, 8,000 AF to the confined aquifer[10] and 3,500 AF to the shallow aquifer.[11]

Surface Water

No surface water sources are used for drinking water in Patterson. The primary natural surface water source near the City of Patterson is the San Joaquin River (the River), which runs roughly south to north approximately four miles east of the City. The River is fed principally by snowmelt from the Sierra Nevada and return flows from users along its course, and empties into the Sacramento-San Joaquin Delta (Delta).

Salado Creek flows south to north across the City and empties into the River to the northeast of the City. Salado Creek is an intermittent stream, flowing for short periods during and after rainfall events, and drains a watershed of approximately 25 square miles. Between approximately State Route 33 and the River, and across the Villages of Patterson project site, Salado Creek runs underground through 96-inch and 36-inch pipelines. Although seepage from the unlined portions of the creek enters the groundwater regime, the infrequency of its flows makes the creek a minor contributor to local water supply. Del Puerto Creek drains a watershed of approximately 73 square miles and traverses from west to east just north of the City. Like Salado Creek, Del Puerto Creek contributes to the area's water supply through an unquantified volume of seepage entering the groundwater regime.

To the west of the Villages of Patterson project area, adjacent to I-5 and running roughly parallel and from north to south, are the Delta Mendota Canal (DMC) and the California Aqueduct (Aqueduct). The DMC is part of the Central Valley Project (CVP) operated by the federal Bureau of Reclamation and supplies water from the Delta to contractors (primarily agricultural) between Tracy and Mendota. The Aqueduct is part of the California State Water Project (SWP) and delivers water from the Delta to municipal and agricultural contractors as far south as Riverside County. Neither of these facilities contributes substantially to groundwater in the vicinity of Patterson, although some seepage into groundwater may occur there.

Baseline Water Supply and Demand

The City of Patterson currently supplies water for municipal and industrial (M&I) uses to customers within the City's sphere of influence. The City serves residential, commercial, industrial, institutional (such as schools and government buildings), landscape, and recreational uses. The City does not supply water for agricultural use.

[10] Kenneth Schmidt and Associates, *Groundwater Hydrology Test Report*, prepared for The H20 Group, April 4, 2006, Appendix C to the *City of Patterson Water Supply Planning Study*, Final Draft, April 2006.
[11] City of Patterson, *2000 Urban Water Management Plan*, Appendix D, pp. 8 and 11.

Baseline Water Supply

The City of Patterson currently relies, and historically has relied, solely on groundwater to serve its water demand. The City currently operates six groundwater wells, with nominal capacities ranging from 600 gallons per minute (gpm) in Well 6 to 1,600 gpm in Well 5 and aggregate nominal capacity of 6,700 gpm.[12] The approximate locations of those wells are shown in **Figure III.J-2: Well Locations**. Water is delivered to customers directly from the City's wells, with disinfection treatment. The City maintains 4.5 million gallons of storage.

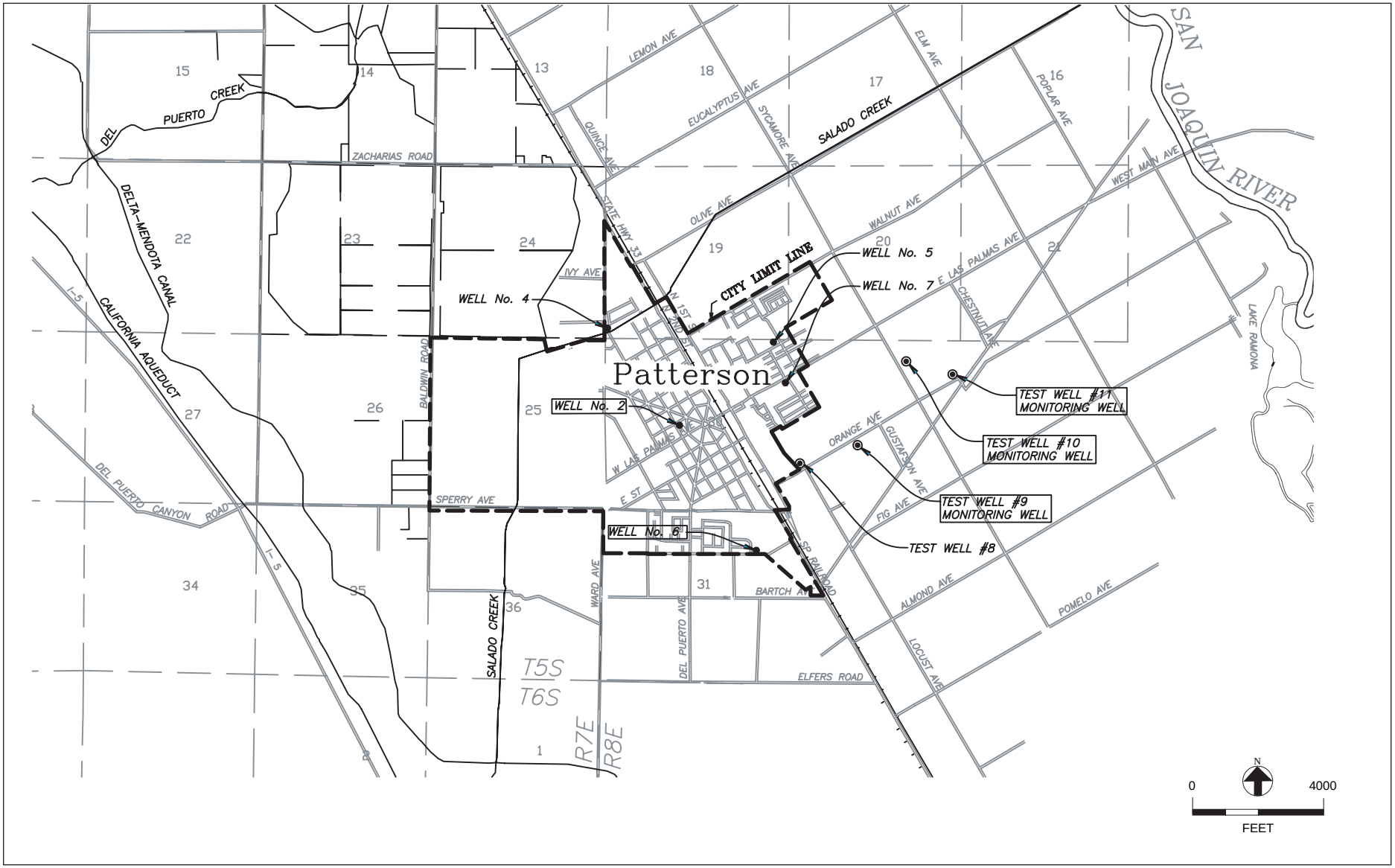
In order to better understand the sustainability of groundwater for future planning, a 6-day aquifer test was conducted in February 2006.[13] The test showed that total sustainable production from the lower aquifer alone is approximately 8,000 AF per year. The upper and lower aquifers combined have a total sustainable yield of about 11,500 AF per year, not including surface percolation. The test also showed that:

- No significant downward leakage occurs between the upper and lower aquifers.
- Groundwater flow is in a northwesterly direction, as opposed to a northeasterly direction as previously suspected.

This updated information since the City of Patterson *2000 Urban Water Management Plan* was adopted in 2002 is important because it indicates that there is more sustainable groundwater in the lower aquifer than shown in previous studies, and that recharge is from the southeast, which could be more beneficial for recharge and water quality. In addition, minimal leakage between the upper and lower aquifers allows the City to pump more water without impacting private, shallow wells and water in the lower aquifer is less susceptible to surface contaminants.

Water levels and well capacity do not appear to have changed in the area, according to City records. Groundwater production has increased as the City's population has grown. Although the City continues to add wells for additional supply, the local groundwater table appears to remain stable.[14] The City has not seen measurable changes in the groundwater table or yield due to periods of low rainfall. Studies of the local groundwater supply have not indicated that low rainfall will have an adverse impact on groundwater levels, yields, or quality.[15] Nevertheless, the City, like other jurisdictions, has adopted a Drought Contingency Plan in the event that an

[12] H20 Group, WSA, July 2006, p. 13.
[13] H20 Group, WSA, July 2006, p. 11.
[14] H2O Group, WSA, July 2006, p. 11.
[15] H2O Group, WSA, July 2006, p. 5, citing studies by Kenneth Schmidt & Associates in 2002 and 2006.



SOURCE: Stoddard & Associates

FIGURE III.J-2: WELL LOCATIONS

extended drought impacts the local groundwater supply. The contingency plan would be implemented by the City Council in three stages: Stage 1, with voluntary rationing; Stage 2, with mandatory rationing intended to reduce water use by 20 percent; and Stage 3, with mandatory rationing and limited water allocations to some users.[16]

The City has a reliable supply of water and is not vulnerable to reductions in deliveries in dry years. **Table III.J-1: City of Patterson Projected Water Supply in Dry Years** shows the projected water supply in single and multiple dry years.

Table III.J-1: City of Patterson Projected Water Supply in Dry Years (acre-feet per year)

Normal Year	Single Dry Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
11,500	11,500	11,500	11,500	11,500	11,500

Source: H2O Group, WSA, June, 2006.

The City's six water supply wells meet all mandatory primary drinking water standards,[17] though all of the wells occasionally exceed one or more recommended secondary standards for identified inorganic chemicals.[18] The principal water quality concern with the City's groundwater is its high level of salinity, measured by its concentration of total dissolved solids (TDS) and electroconductivity. Although nitrate levels meet primary drinking water standards, levels are relatively high in some wells, at up to approximately 8 milligrams per liter (mg/L) compared to a state standard of 10 mg/L. Sulfates also exceed the recommended secondary standards. These water quality concerns may force the City to provide treatment at some time in the future, although the timing of this need has not been established. Earlier studies suggested treatment may be needed by 2009-2012. Groundwater quality changes from year to year, and from season to season. Therefore, it is not uncommon to see changes over time, depending on local pumping activities. This makes it difficult to determine when treatment may be necessary, and recent studies prepared for the City in 2006 suggest that the earlier conclusions regarding when treatment may be needed are conservative.[19] Regular reports on water quality are prepared by the City's Department of Public Works; the water quality report for 2005 is available on the City's web site and shows that water meets all primary and secondary drinking water standards.[20]

[16] H2O Group, WSA, July 2006, p. 22.
[17] Primary drinking water standards are maximum contaminant levels (MCLs) established by the California Department of Public Health for nitrates, arsenic, and chromium.
[18] Maximum suggested contaminant levels for a list of compounds such as sulfates, chlorides and iron.
[19] H2O Group, WSA, July 2006, p. 11.
[20] City of Patterson website, Documents and Forms Library, Public Works Reports, CCR Report 2005, at www.ci.patterson.ca.us/, accessed May 5, 2006.

The City has authorized development of a Water Supply Planning Study (WPS) to evaluate water demand, supplies, and possible alternatives to treat the supply when/if necessary. The draft WPS analyzes various sources of water that could be available to the City, and several treatment options for those sources.[21] The WPS is expected to be completed later in 2006; information from a draft of the WPS has been used in this section of the EIR.

Baseline Water Demand

Table III.J-2: City of Patterson Historic Water Use presents historic groundwater withdrawals and deliveries to customers. Water use in the State of California varies depending on the location. Household water use is greater in areas where the climate is warmer and that have less rainfall, than in colder, wetter locations. The local climate is hotter and drier than coastal regions of the state. Because of its climate, the City's water use increases by approximately 2.5 times from winter to summer, due primarily to landscape irrigation. Pumping records indicate that the City's household use is lower than the statewide average of 244 gallons per person per day, averaging closer to 180 gallons per person per day, including accounting for commercial, industrial, landscaping and public uses. For water demand projections, an average rate of 200 gallons per person per day was used, and then multiplied by a "safety factor" of 1.15. This rate is conservative, as City pumping records shown that the average daily use is substantially below 200 gallons per person per day in most years.[22]

Table III.J-2: City of Patterson Historic Water Use (acre-feet per year)

Year	1980	1985	1990	1995	2000	2005
Water Production	873	899	1,660	1,973	2,357	3,250

Notes: Estimated from metered data.

S*ource:* City of Patterson, *2000 Urban Water Management Plan,* 2002; City of Patterson Public Works Department Annual pumping records in WSA Table 3, 13.

Most of the Villages of Patterson project area is currently in agricultural use, principally in irrigated orchards and row crops. Agricultural irrigation generally uses surface supplies from the San Joaquin River and the west-side aqueducts. Agricultural users in the project area also pump groundwater for use on-site, although this is likely to be a small quantity.[23] Domestic uses on agricultural properties are similarly supplied from private wells.

[21] H2O Group, City of Patterson Water Supply Planning Study, Final Draft, April 2006. (Hereinafter cited as "H2O Group, Water Supply Planning Study.")
[22] H2O Group, WSA, July 2006, Figure 2, p. 17.
[23] Data on withdrawals from privately-owned wells is not available.

The 2002 Urban Water Management Plan provided a 20-year water demand projection. Water demand for the most recent year, 2005, was projected to be approximately 3,400 AF per year for a population of about 15,600.[24] Current data show that water demand in 2005 was approximately 3,250 AF per year and the population is estimated to be about 16,150 residents.[25] Thus, Patterson continues to use water conservatively.

REGULATORY FRAMEWORK

The following state and local laws, programs, and policies affect the supply and use of water in the Patterson area.

Urban Water Management Plan

On August 6, 2002, the City Council adopted an Urban Water Management Plan (UWMP) pursuant to the Urban Water Management Planning Act.[26] The UWMP evaluated past, present, and projected water demand and supply in five-year increments through 2020; the costs and reliability of the supply; and the City's conservation efforts, water shortage responses, and use of recycled water. Based on an evaluation of the City's groundwater resources, the UWMP concluded that the City's groundwater was sufficient to serve projected demand through 2020 associated with the land uses identified in the City's 1992 General Plan. The population growth assumed in the UWMP encompassed the anticipated population of the Villages of Patterson project. The 2002 UWMP was subsequently found to be incomplete by the state Department of Water Resources (DWR).[27] A new UWMP is being prepared but will not be reviewed and acted on by the City Council or DWR until later in 2006.

Water Supply Assessment

If an Urban Water Management Plan has not been prepared, or if the existing UWMP does not account for development in a proposed new development project, then, pursuant to Sections 10910 to 10915 of the California Water Code, often referred to as SB 610,[28] a Water Supply Assessment (WSA) is required for projects with more than 500 residential units or commercial/industrial space that could have more than 1,000 employees. Although the 2000

[24] City of Patterson *2000 Urban Water Management Plan*, 2002.
[25] H2O Group, WSA, July 2006, p. 19.
[26] California Water Code sections 10610-10657, as amended by 2001 Cal. Stat. 320 (SB 672), 2001 Cal. Stat. 643 (SB 610), and 2001 Cal. Stat. 644 (AB 901).
[27] State of California Department of Water Resources, letter from David Todd, Chief, Technical Assistance and Outreach Branch to Robert Stoddard, City of Patterson, March 17, 2003.
[28] Water Code Sections 10910 – 10915 were adopted in SB 910; the sections were amended significantly in late 2001 by 2001 Cal. Stat. 643 (SB 610).

UWMP does account for population growth expected in the Villages of Patterson project, because the status of an UWMP that has been found incomplete by DWR is uncertain, a WSA has been prepared for the Villages of Patterson project that does not rely on the 2000 UWMP in order to take the most conservative approach to documenting water issues. As required by Water Code section 10911(b), the Draft WSA is included in the Draft EIR in Appendix E.

Water Supply Verification

California Government Code Section 66473.7 requires that a condition be included in any tentative subdivision map (or development agreement) for a residential subdivision of 500 or more units mandating that a "sufficient water supply" be available to serve the subdivision in addition to existing and planned future water uses.[29] The appropriate public water system must submit to the city or county a water supply verification (Verification) evaluating whether such a sufficient water supply exists, based on substantial evidence. Absent demonstration in the Verification that a sufficient water supply exists, a final subdivision map cannot be issued for the subdivision, and the subdivision cannot be built. If the Villages of Patterson project were approved, the City would prepare a Verification, as required by Government Code Section 66473.7, prior to issuance of a final subdivision map for the Villages of Patterson.

California Water Law

California's constitution, statutes, and common law erect a complex scheme of rights in surface waters and groundwater. Rights in surface waters are governed by a hybrid system of riparian and appropriative rights, some of which are administered by the State Water Resources Control Board. Groundwater rights are not administered by any state agency, but rather are adjudicated by courts on a case-by-case basis. Groundwater rights are divided into overlying rights, appropriative rights, and prescriptive rights. Any use of groundwater away from the property from which it was pumped is an appropriative use, while "on-tract" uses are typically overlying. Where the aquifer is overdrafted, a court can allocate water among competing overlying users on a correlative basis and to overlying users before appropriative users. Water would be allocated among appropriative users based on seniority. In other words, appropriative users may take any surplus water left over after satisfaction of overlying uses, and absent such surplus (i.e., where the aquifer is overdrafted) appropriations may be enjoined in reverse order of seniority to accommodate overlying and more senior appropriative uses. Where an appropriative user has been withdrawing non-surplus water for more than five years, the appropriative right may ripen into a prescriptive right, which is effectively treated as an overlying right for purposes of groundwater allocation. Groundwater rights are subject to a state constitutional requirement that

[29] Added to the California Water Code in SB 220, 2001.

the use to which the water is put be reasonable and beneficial. The Delta-Mendota Subbasin of the San Joaquin River Hydrologic Region has not been adjudicated.

State Drinking Water Quality Regulations

The State Department of Health Services (DHS) establishes "primary" and "secondary" Domestic Water Quality Standards for drinking water supplied by public water systems such as the City. The standards are required by state law to meet or exceed standards adopted by the U.S. Environmental Protection Agency. The concentrations of specified constituents are limited to maximum contaminant levels (MCLs) and are established on a constituent basis for bacteriological contaminants (such as total coliform), organic chemicals (such as benzene), inorganic chemicals (such as total dissolved solids), and radioactivity (such as gross alpha particle activity). Primary standards are set at levels necessary to protect public health and may not be exceeded. Secondary standards are based on aesthetic criteria such as taste and odor and are composed of (1) recommended limits that may be exceeded but are not recommended to be exceeded; (2) upper limits that may be exceeded for a limited duration with prior DHS approval; and (3) short term limits that may not be exceeded. Public water systems also must obtain a domestic water supply permit from DHS. The City has obtained such a permit.

City of Patterson General Plan

The City of Patterson General Plan includes several policies relevant to water supply, quoted below:

IV.A.1 The City shall continue to use groundwater as a source of domestic water for the city. The City shall also pursue, as expeditiously as possible, acquisition of surface water rights to supplement its water supply in order to accommodate projected water demand and provide for water security.

IV.A.3 The City shall not approve any new development without the demonstrated assurance of an adequate water supply to support such development.

IV.A.5 To minimize the need for the development of new water sources and facilities and to minimize sewer treatment needs, the City shall promote water conservation both in City operations and in private development.

IV.A.8 The City shall, through a combination of water development fees and other funding mechanisms, ensure that new development pays its share of the costs of water system improvements.

City of Patterson Ordinances

The City has adopted several ordinances relevant to water supply, summarized here (references are to the City of Patterson Administrative Code):

Chapter 15.48	Prescribes planting and irrigation system design standards for new development. Requires preparation of landscape and irrigation plans. Specifies that 90 percent of plants must be drought tolerant and requires underground irrigation to reduce water waste.
Section 13.24.380	Prohibits residential outdoor water use between 10:00 AM and 7:00 PM. Requires quick acting shutoff hose nozzles for car washing. Establishes limitations on water use for newly planted lawns. Prescribes penalties for violation.

IMPACTS AND MITIGATION

This section quantifies future demand and identifies the City's proposal for supplying water for the Villages of Patterson project and other uses planned through 2030, identifies and analyzes the environmental impacts of the proposed water supply, and identifies potential mitigation measures for those impacts.

FUTURE WATER DEMAND AND PROPOSED SUPPLY

This section discusses the water demand projected to be associated with the Villages of Patterson project, in combination with other water demand anticipated through 2030, based on the Water Supply Assessment for the Villages of Patterson project. It also discusses the water supply proposed by the City to serve those demands – untreated groundwater. Use of surface water as a source of water supply is not discussed below, as the City has not acquired surface water entitlements nor approved a water program that includes surface water. The city is carrying out detailed water supply planning in the Water Supply Planning Study, initiated in late 2005. That study is investigating programs that would use various combinations of groundwater and surface water to supply water demand in the future; one of the alternatives uses only groundwater to supply the entire demand for the City through 2030. Until a new water supply alternative is adopted by the City, groundwater is assumed to remain the sole source of water for the City and its anticipated growth.

Future Water Demand

Estimated Demand for the Villages of Patterson Project

At full buildout, the Villages of Patterson projects would account for an annual water demand of approximately 1,830 AF per year, assuming an average of 2.6 persons per dwelling unit and an overall demand of 200 gallons per capita per day.[30] At buildout, estimated demand for the Villages of Patterson project plus existing demand would be 5,080 AF per year.

Estimated Cumulative Demand

Over the next three years, the City expects an average growth rate of three percent, resulting in the addition of approximately 165 connections per year. For the WSA, a more conservative number of 250 connections per year was used. This growth would increase total system demand from 3,250 AF per year to 3,800 AF per year in 2009.[31] Using a factor of 1.15 to ensure a conservatively high demand figure (see p. III.J.7), in 2010 demand was estimated to be about 4,700 AF per year.[32]

Water demand for the Villages of Patterson project and other buildout anticipated in the City General Plan would total approximately 8,200 AF per year in 2030.[33] **Table III.J-3: City of Patterson Water Demand Projections** shows the estimated pace of population growth and the accompanying increase in water demand to 2030. The population is currently estimated at 16,200 persons. At full buildout of land uses designated in the General Plan, the population is projected to be approximately 35,000. This buildout population is expected to be reached sometime between 2025 and 2035. This population estimate exceeds the maximum population of 30,000 identified in the updated General Plan, and is based on a review of undeveloped and underdeveloped land within the City limits and an analysis of likely development using the Land Use designations and densities in the General Plan.

[30] H2O Group, WSA, July 2006, Table 12, p. 25. The calculation takes into account demand from non-residential uses and landscaping, because the average water use is established based on the total amount of water pumped divided by the total population.
[31] H2O Group, WSA, July 2006, p. 5.
[32] H2O Group, WSA, July 2006, p. 19.
[33] H2O Group, WSA, July 2006, Table 55, p. 26.

Table III.J-3: City of Patterson Water Demand Projections (acre-feet per year)

Year	Population	Water Demand
2005	16,150	3,250
2010	21,000	4,704
2015	25,500	5,712
2020	30,000	6,720
2025	34,000	7,616
2030	35,600	8,176

Source: The H20 Group, *Water Supply Assessment for the Villages of Patterson,* July 2006, Table 5, p. 19.

The Villages of Patterson project, along with the City's existing demand, would be served from untreated groundwater pumped from the City's existing wells and new wells planned as demand increases.

Assuming the Villages of Patterson project was not approved and no further growth were approved within the City's present sphere of influence, the City would be expected to deplete the available supply of groundwater meeting Domestic Water Quality Standards at some point in the future. Approval of the Villages of Patterson project, in combination with other planned development in the City's sphere of influence, would accelerate the depletion of good quality groundwater. Although the City would need to look beyond untreated groundwater to meet its projected water demand even without the Villages of Patterson project in the future, the project could cause the need to arise earlier.

To serve cumulative demand, the City would continue to rely on its untreated groundwater until nitrates and/or total dissolved solids in the water increase such that the supply meeting state drinking water standards could not be met. At that time, the City would either transition to treatment of its groundwater sources or find an alternative water source. Existing wells would be maintained and new wells could be installed to tap the deep, confined aquifer. Wells would be located to optimize the quality of groundwater pumped and to minimize potential adverse effects of pumping, as discussed below. While the City is also exploring surface water sources that could be used to blend with groundwater to reduce concentrations of salts and nitrates,[34] groundwater supplies would continue to be sufficient with treatment. Therefore, the City is exploring treatment options for groundwater. Since no surface water is currently available to the City, only groundwater is considered in this EIR.

[34] The H2O Group, Water Supply Planning Study.

Groundwater Treatment

The City is considering several treatment methods to remove dissolved solids. Not all of the groundwater would require treatment. The water supplied to City users in the future would likely consist of some blend of treated and untreated groundwater. The actual proportions would depend on final water goals determined by the City; for example, a total dissolved solids (TDS) goal of 300 mg/L vs 500 mg/L, changes in groundwater quality, and the introduction of future surface water supplies, would each affect the proportion of groundwater to be treated to achieve drinking water standards in the water supply. However, it is expected that approximately 50 percent of the groundwater would receive treatment.

The treatment methods under consideration are summarized in Appendix A to the Water Supply Assessment, based on information in the draft Water Supply Planning Study. The treatment methods considered included reverse osmosis (RO) membrane treatment, ion-exchange, electrodialysis/electrodialysis reversal (ED/EDR), and distillation. The WPS concludes that based on the size of the treatment facility the City would need, ED/EDR and distillation would not be cost effective and these methods were not analyzed further. The draft WPS recommends use of membrane treatment (RO) over other feasible options.

Brine produced by water treatment to remove dissolved salts would need to be processed. The WPS identifies options for brine handling and disposal. These include: 1) a secondary process consisting of nanofiltration (NF) to reduce the volume of concentrate, 2) solar evaporation ponds, 3) creating salt marsh wildlife habitat, and 4) blending with existing wastewater. Additional analysis will be conducted by the City to determine the best option of brine disposal.

Reliability

The basin from which the City pumps groundwater has not been adjudicated, and therefore no decree is available to quantify and document the City's groundwater rights. Based on the type of use made by the City, the results of the City's groundwater investigation shows sufficient surplus water in the confined aquifer to support the City's proposed appropriative use to serve the Villages of Patterson project in addition to existing water users, and expected growth. Groundwater is accordingly determined to be a reliable source of supply according to the WSA.

The City's rights to water pumped to serve the Villages of Patterson project would be appropriative rather than overlying, because although the City literally overlies the aquifer, it delivers water for use off of the tract from which it is pumped. An appropriative user may legally put to beneficial use any available surplus groundwater. In other words, such a user may appropriate water if doing so would not cause the aquifer to become overdrafted. If overdraft

were to occur, overlying users and senior appropriative users may seek a judicial decree ordering more junior appropriators to curtail or cease withdrawals.

Overdraft is unlikely in Patterson. In the past, the City's groundwater supply has proved reliable even in severe drought years when surface-water users turn to groundwater to supplement declining surface-water deliveries. Previous studies of groundwater in the area, described in the City's 2000 UWMP, have indicated that increased withdrawals from the aquifer can increase the aquifer's sustainable yield by reducing the volume of subsurface outflow.[35] The City's 2006 groundwater investigation indicated that the pumping required to serve the Villages of Patterson project in addition to existing and planned uses would not cause the aquifer to become overdrafted. There is an estimated sustainable yield from the deep and shallow aquifers of approximately 11,500 AF annually, not including deep percolation of water and seepage from unlined canals and Salado and Del Puerto Creeks.[36] The City's projected maximum annual withdrawals of 8,200 acre-feet annually[37] are within that annual recharge increment. Because overdraft is unlikely, groundwater is considered to be a reliable source of supply according to the WSA.

APPROACH

Methodology and Assumptions

For purposes of assessing water supply needs, the WSA assumes that the pace of residential and industrial development within the City, including buildout of the Villages of Patterson, will mirror the rate of the City's growth in population, and that water demand will continue to be directly related to population. The EIR analysis follows the WSA's approach.

The principal impact of the Villages of Patterson project when considered alone is that the City would need to begin treating its groundwater sooner than if the projects did not go forward. At some point, the City will need to begin treating its groundwater (or switch to a new source altogether, though this is not addressed in this EIR since groundwater is the sole current water supply for the City) whether or not the Villages of Patterson project is approved. Accordingly, many of the impacts discussed below could occur even if the Villages of Patterson project were not approved, albeit later.

[35] City of Patterson, *2000 Urban Water Management Plan*, 2002, p. 18.
[36] Kenneth D. Schmidt & Associates, *Groundwater Supply Evaluation for City of Patterson*, April 11, 2002, pp. 20-21; and H2O Group, WSA, July 2006, p. 11.
[37] H2O Group, WSA, July 2006, pp. 19 and 26.

This EIR evaluates the environmental impacts of the City' proposed future water supply at a programmatic level. Further project-level review for groundwater treatment would be conducted, as required by CEQA, when a groundwater treatment project is proposed.

SIGNIFICANCE CRITERIA

Supplying the Villages of Patterson project with groundwater, both untreated and treated, would have a significant environmental impact if:

- Supplying water would require disposal of significant amounts of waste as a byproduct of treating water to attain water quality standards.
- Supplying water would use more energy than could be supplied by electric utilities serving the project area.
- Pumping groundwater would cause the local groundwater to become generally overdrafted or cause the water table to drop in the area of the City's pumping (creating a "cone of depression") so as to (1) interfere with other established or planned groundwater uses by reducing groundwater quality or causing wells to dry up; or (2) cause substantial subsidence of overlying land and thereby cause damage to public or private property.
- Supplying water would require extension of water supply conveyance infrastructure into previously unserved areas, require the construction of new treatment infrastructure, or require significant alterations to existing infrastructure, which would result in potentially significant environmental impacts.
- Installing new wells or pumping groundwater would introduce new contaminants into the aquifer.

PROJECT IMPACTS AND MITIGATION

This section identifies and evaluates the potential significance of all foreseeable environmental impacts associated with supplying the Villages of Patterson project and other growth in Patterson with groundwater, both treated and untreated.

Impact J.1. Treatment of groundwater and disposal of concentrated brine created as a byproduct of groundwater treatment could result in construction of new physical facilities on agricultural land, resulting in loss of agricultural land and temporary construction impacts, and in production of a waste product that may require special disposal methods. (Significant and Unavoidable)

Treatment of groundwater would require construction of a centralized water treatment facility providing desalination of the water by RO membrane treatment, ion-exchange, or lime softening. Water to be treated would need to be piped from wellheads to this facility. Any of the treatment systems would produce concentrated brine, estimated at approximately 600 AF per year of brine given projected demand of about 8,200 AF per year in 2030. This amount assumes that

approximately one-half of the groundwater would be treated and blended with untreated groundwater to reach an acceptable level of TDS. It also assumes buildout of the City of Patterson through the year 2030 and thus provides an analysis of cumulative impacts. The Villages of Patterson development would contribute about 22 percent to the total water demand. A location for a water treatment facility is not being researched at this time. Therefore, impacts of that facility cannot be identified. Any discussion would be speculative.

The brine produced by groundwater treatment would require disposal. The City is considering four disposal methods: conveyance to the City's wastewater treatment plant as part of the City's normal wastewater stream, solar evaporation in lined ponds, construction and maintenance of a salt-water marsh, or nanofiltration to reduce the volume of concentrated brine.

Disposal via the wastewater treatment plant would be feasible if salts in wastewater from household water softeners were substantially reduced in the future. If water softeners continued in use, adding the brine to the wastewater stream could increase salts in the treatment plant effluent and impact shallow groundwater quality. It is assumed that disposal to the wastewater plant would not be selected unless use of individual water softeners was restricted. Disposal to a saltwater marsh would require creation of such a habitat within reasonable distance of the water treatment facility, potentially resulting in loss of an unknown amount of agricultural land. Considerable additional study is necessary before the City could consider selection of this disposal option, to establish an appropriate location, the type of habitat to be created, and necessary management techniques.

Evaporation would require the City to purchase new property and construct evaporation ponds with impervious linings to prevent percolation of the brine into the shallow aquifer. After evaporation, salts would need to be collected and transported to an appropriate solid-waste-disposal facility. If evaporated, the 600 AF annually of brine would produce approximately 10 to 12 tons of salts per year that would require proper disposal. Evaporation would require conversion of about 200 acres for evaporation ponds and likely would require disposal of the dried salt at a solid waste landfill.[38] Nanofiltration of the brine before evaporation would substantially reduce the volume of brine, requiring less than 100 acres of lined evaporation ponds and disposal of the dried solids in a landfill. The acreage for these evaporation ponds would also likely be located on agricultural land.

Such a disposal plan would generate approximately one to three truck trips per year and would not result in significant environmental impacts. There are two possible disposal sites: the Fink

[38] Recycling of evaporated salt for use for culinary purposes is not feasible, given that the brine produced by the treatment systems would include a variety of salts in addition to sodium chloride. Recycling evaporated salt for industrial applications may be feasible but requires further study.

Road Landfill and the Kettleman Hills landfill. The Fink Road Landfill would be used if disposal of this type of waste would be accepted there. If the waste salts were considered hazardous and could not be disposed of at the Fink Road Landfill, they would need to be trucked to Kettleman City, the location of the nearest landfill that accepts hazardous waste. Thus, disposal of the dried salts would not be a significant impact. While the additional vehicle miles traveled (approximately 260 miles per trip) would incrementally increase air emissions in the San Joaquin Air Pollution Control District, the increase would be marginal and would not substantially change the already-significant traffic impacts caused by the Villages of Patterson project.

Under any of the disposal methods, the brine would need to be piped from the treatment facility to the disposal site. Laying of that pipeline and the pipeline from wellheads to the treatment facility would entail physical impacts that would be evaluated in project-specific environmental review after the treatment disposal systems have been designed, though it is anticipated that the pipelines would be installed in existing rights-of-way and impacts would be similar to other pipeline construction, including temporary noise increases and air quality emissions. These impacts would be short term and would not be significant with implementation of standard control measures.

Construction of a centralized treatment facility, and solar evaporation and nanofiltration with evaporation ponds would result in secondary significant impact from loss of agricultural land.

Mitigation Measure J.1

If the City sites the treatment facility or evaporation ponds for salts on agricultural land, the City shall require new development to pay its pro-rata share of the cost of an agricultural conservation easement, in the manner discussed in Mitigation Measure C.1, for the acreage converted for use as evaporation ponds.

This impact is considered to be significant and unavoidable after mitigation

Impact J.2. Groundwater treatment would consume substantial energy. (Less than Significant)

The City is located in the Westside Zone that the Turlock Irrigation District (TID) purchased from Pacific Gas & Electric Company in 2003. TID has estimated that current annual electricity usage in the Westside Zone is 136,710 megawatts and has projected load growth of approximately 3 percent per year for the area.[39]

[39] Tony Walker, Public Information Officer, Turlock Irrigation District, pers. com. July 11, 2006. See also City of Patterson, *West Patterson Projects Final EIR*, 2003, p. III.I.27.

Reverse osmosis is energy intensive because it requires pumping water against osmotic pressure through a semi-permeable membrane. Membrane technology continues to progress, including approaches that reduce energy consumption. Although energy use would depend on the specific treatment technology used, the treatment process is projected to use approximately 0.4 megawatt-hours per acre-foot of water treated, for a total of less than 1,640 megawatt-hours annually to treat 50 percent of the total water demand in 2025 to 2030.[40] Compared to present annual usage, this represents less than one-half of the 3 percent annual load growth projected for the area. Power consumption would increase gradually over time as the Villages of Patterson project and other vacant or undeveloped sites build out, and by the time 1,640 megawatt-hour load from the water treatment facility was added, total usage in the area can be expected to be considerably greater given the expected 3 percent annual growth in the interim. Accordingly, the energy demand associated with treating groundwater is not anticipated to interfere with or exceed the capacity of local power generation and transmission facilities.

This impact is considered to be less than significant.

Mitigation Measure. No mitigation necessary.

Impact J.3. Pumping groundwater to serve the Villages of Patterson project and other existing and planned demand could create one or more "cones of depression" beneath the City's wells. (Less than Significant with Mitigation)

When wells draw water from an aquifer, it results in a decline in the local water table surrounding the well. The pattern or shape of declining water resembles a cone, thus is often referred to as a "cone of depression." The shape of the cone is a function of aquifer characteristics, like transmissivity, homogeneity and depth. This drawdown effect is normal, and an expected result of pumping. The cone will also grow in depth and radius with time as the well pump continues to draw water from the well. In a confined aquifer, the degree of drawdown declines rapidly with increasing distance from the well. When wells are constructed in the same vicinity, there is potential that the cone developed by each well can overlap, causing a condition known as "mutual interference." When mutual interference occurs, the efficiency of each well is diminished, and will typically reduce total well production of both wells. Adding additional wells can exacerbate this condition. Thus it is important that the construction and spacing of multiple wells be carefully analyzed to ensure the most efficient system and long-term operating cost.

A severe cone of depression could cause land subsidence on the surface above the cone. As groundwater is drawn down, the clays in the soil matrix can become compacted, causing the land surface above to subside. The City's groundwater study noted that subsidence in the area of the

[40] Passinisi, J.Q.M., Todd K. Reynolds, and Janet Persechino, "*EDR, NF and RO at a Brackish Water Reclamation Facility,*" Iconics Technical Paper, 2000.

City's wells is possible.[41] Maximum subsidence in the well field is estimated to be between one-half foot and one foot and less than one-half foot beyond one-half mile from the well.

Most obviously, subsidence, if sufficiently severe, could cause property damage to structures and rigid surfaces on the overlying land. Because most of the wells are located on agricultural land, however, the risk of damage to structures is relatively low. Subsidence could also damage the wells themselves, by causing well casings to collapse.

If groundwater pumping is not properly managed, there is a greater risk that these impacts could manifest and the greater their potential severity. If groundwater pumping to support buildout of the Villages of Patterson project were to create a severe cone of depression, this would be a significant impact.

Use of the upper aquifer could interfere with the existing wells used by individual groundwater users in areas near the City. The likelihood of interfering with other groundwater uses is reduced substantially by several factors. Although public records of privately-owned well locations and water uses are unavailable, informal research has revealed few, if any, surrounding groundwater users near the City's well field who are drawing water from the deep, confined aquifer used by the City. Rather, local agricultural and domestic groundwater users rely on the shallow, unconfined aquifer, which reduces their well installation and operation costs. The City of Patterson prohibits the use of private wells for domestic or irrigation use. Thus, privately owned well locations are outside of the City limits. When sites are annexed into the City, they are required to connect to the City water system, and the private wells must be abandoned. Therefore, if the City uses water from the upper aquifer, it is not anticipated to have a measurable impact on private use of that aquifer.[42] It is not known, however, that no existing wells would be affected by a new City well pumping from the confined (lower) aquifer. Because this is unknown it could be considered significant and a mitigation measure is identified.

[41] City of Patterson, *2000 Urban Water Management Plan*, Appendix D, p. 16.
[42] H2O Group, WSA, July 2006, p. 14.

Mitigation Measure J.3.a.

The City shall sample groundwater quality semiannually to assess water quality and shall conduct additional studies to better understand the direction and rate of groundwater flow in the confined aquifer. These investigations will allow the City to optimize the arrangement of new water supply wells to maximize water quality and minimize the severity of the resulting cone of depression and associated impacts. To the extent feasible, new wells shall be located at greater spacings to reduce the cone of depression and maximize their distance from nearby users. This would reduce the risk and/or severity of the potential impacts from subsidence discussed above.

Mitigation Measure J.3.b.

The City shall implement a subsidence monitoring program. Subsidence shall be monitored annually at each well and new wells shall be designed to prevent damage to the wells from subsidence as described in the groundwater study.

Mitigation Measure J.3.c.

If, in the unlikely event that an existing user of the confined aquifer finds its well affected by the City's pumping, the City shall compensate that user for the cost of deepening the pump setting and the increased cost of operating the well to draw water from greater depths. New development in the City's sphere of influence shall be required to pay its fair share of such costs.

Impact J.4. Supplying water to the Villages of Patterson project would require extension of water supply conveyance infrastructure into previously unserved areas. (Less than Significant)

The City does not currently supply water to the project area; land in the project area is currently in agricultural use and is supplied with water by the Patterson Irrigation District or from on-site groundwater wells. The City would supply the Villages of Patterson project with groundwater pumped from City wells.

The primary impacts associated with the extension of water supply infrastructure to the project area would be the physical impacts of laying pipeline. Water supply pipelines would be laid in existing rights of way or areas that would be disturbed for construction of other aspects of the Villages of Patterson project. The potential environmental effects related to construction are addressed in other applicable sections of this EIR (e.g., Section III.E, Air Quality; III.F, Noise; and III.H, Biological Resources). It is anticipated that the incremental physical impacts – those impacts above and beyond the impacts of the other earth-disturbing activities in the area – associated with the laying of pipeline would be less than significant.

The distribution facilities that would be constructed would be consistent with the City's existing water distribution infrastructure. Accordingly, implementation of the additional distribution system would complement, rather than adversely impact, the City's existing water supply system.

The extension of water supply distribution systems would have a less-than-significant impact.

Mitigation Measure. No mitigation necessary.

K. HISTORICAL RESOURCES

The assessment of project impacts on "historical resources" as defined by CEQA (*CEQA Guidelines*, Section 15064.5) as a two-step analysis: first, an analysis of whether the project site contains a "historical resource(s)" as defined under CEQA; and second, if the site is found to contain historical resources, an analysis of whether the project would cause a substantial adverse change to the resource.

Both archaeological resources and historic architectural resources are among the resources that may be considered historical resources for the purposes of CEQA. Historic architectural resources were considered in the Notice of Preparation/Initial Study for the proposed project (Appendix A to this EIR). The Notice of Preparation/Initial Study concluded that existing buildings within the Villages of Patterson Plan Area did not possess the requisite association with significant persons or events, or sufficient architectural distinction and integrity to be considered historical resources under CEQA, either individually or collectively as contributors to a historic district.[1] Therefore, demolition of existing buildings on the project site would not result in a significant impact to historic architectural resources under CEQA.

This section focuses on archaeological resources and has two components. The Setting discussion examines the potential for the presence of archaeological resources on the project site through a review of the historic background of the greater Patterson area, an examination of the available archival record conducted at the Central California Information Center, and a systematic visual reconnaissance of the Plan Area. The Impacts discussion evaluates the potential impacts of the Villages of Patterson project on any historical resources present on the site.

[1] City of Patterson, Villages of Patterson Development Plan Notice of Preparation/Initial Study, March 2006, p. 27.

SETTING

HISTORIC BACKGROUND[2]

Native American

At Spanish contact, the Native Americans occupying the San Joaquin Valley were known as the "Yokuts," a linguistic term meaning "person, persons or relative" in the regional dialect. These people were also referred to as "Tularenos," derived from the Spanish as "people of the cane brakes," a term describing groups speaking related languages who held territory from the Kern River Valley to the south to the mouth of the San Joaquin River to the north. The Yokuts language family is moderately cohesive, comprised of only two separate dialects and a variety of subdialects, spoken by groups covering a substantial region of the Southern Central Valley of California. Ancestors of the Yokuts language group reportedly entered the Northern San Joaquin Valley around A.D. 1400. Ethnographically the Yokuts were divided into three distinct cultural groups; the "southern Valley Yokuts," the "Foothill Yokuts," and the Northern Valley Yokuts, the former inhabitants of the greater Patterson area.

Subsistence for the Northern Valley Yokuts was largely dependent on riparian resources from the San Joaquin River and its many tributaries; two foodstuffs in particular, salmon and acorns, were essential to their survival. Fish like salmon, steelhead, and sturgeon were caught using bone harpoons and fish nets; waterfowl like geese, duck, cormorant and other birds were hunted with nets, sinkers, and bolos. Elk, deer, and pronghorn antelope were used for meat and hides, and their bone was used for tools. Tule reeds and native grasses were used for making nets, baskets, rafts, and houses.

The basic unit of the Northern Valley Yokuts was the tribelet, a small independent kinship group occupying a defined territory and speaking the same language or dialect. Group size fluctuated and people frequently moved the locations of their villages to exploit different food sources on a seasonal basis. Tribelets were comprised of two to five villages, probably constituted along kinship lines. Tribelet territory also contains special resource collection camps to exploit specific food resources. Populations within the San Joaquin Valley occupied the riverine/riparian villages

[2] The review of the historic background of the greater Patterson area is based on two studies by Holman and Associates, Consulting Archaeologists. One was prepared for the Villages of Patterson project, and an earlier study was prepared in 2003 for development projects in West Patterson: *Results of a Cultural Resources Study of the Villages of Patterson Development, Patterson, Stanislaus County, California*, April 2006 (hereafter referred to as "Holman 2006"); and *Report of Historic Archival Research and a Field Inspection of the West Patterson Master Development Plan and Patterson Gardens Projects, Patterson, Stanislaus County, California*, June 2002. These reports are available for public review as part of the project file, by appointment, at the City of Patterson Community Development Department offices.

in the fall, winter and spring, with a move to the east (the Sierra foothills) in the summer to follow migrating game and to escape the summer valley heat.

Initial European contact appears to have been made as early as 1800, when the Spanish began to explore the interior valleys. Removal of the Yokuts to the missions and exposure to European diseases aided in the demise of the Yokuts. It is estimated that there were about 18,000 Yokuts in 1770. This number was reduced to about 600 by the 1910 census.

Spanish and Mexican Period (1769-1848)

Nearly 50 years before Patterson was established in California's Central Valley, the area was an old Spanish Land Grant known as Rancho Del Puerto. On January 30, 1844, the Mexican California Governor, Manuel Micheltoreno, made the rancho land grant in the names of Mariano and Pedro Hernandez. The Hernandez Land Grant extended from present-day Highway 33 to the San Joaquin River (west to east) and between Del Puerto Creek and Marshall Road (north to south).

American Period (1848-Present)

After California became part of the United States, Samuel Reed and Ruben Wade claimed the Rancho Del Puerto land on January 7, 1855. President Abraham Lincoln issued a patent to the land on August 15, 1864, giving Reed and Wade 13,340 acres. That land patent is on display at the Patterson Historical Society Museum. On June 18, 1866, Reed and Wade sold their grant to J. O. Eldredge for $5,000. Eldredge kept the land for two months before selling it to John D. Patterson for $5,400. Patterson had come to California in 1854 by sailing around Cape Horn. He brought Spanish Merino sheep, longhorn cattle, and racing horses to the Central Valley. He was one of the first men to serve on the Stanislaus County Election Board.

After John D. Patterson's death on March 7, 1902, ownership transferred to his brothers, Thomas and William Patterson. Thomas Patterson had moved to California from New York in 1888. He had been a Fresno banker prior to inheriting John D. Patterson's estate. Thomas and William sold their inheritance to the Ranch Company on May 16, 1908, for $540,000 in gold coin. There is no mention of what happened to William Patterson. Thomas began the development of the Patterson Colony.

Patterson Colony was officially recorded with the *Stanislaus County Recorder* on December 13, 1909. It sprang to life as a tent city in early 1910, when the first settlers arrived from Sweden. The town was plotted by subdividing the land into ranches. Thomas wanted to make the town different from all other western towns. He decided to pattern the Colony after Washington, D. C.

and Paris. This unique approach used a series of circles with streets radiating outward. The major streets were lined with palm, eucalyptus, and sycamore trees. Only the palm trees survive.

Patterson conceived of the idea of building a series of pump stations and pools to get water from the San Joaquin River uphill into a main canal which supplied lateral canals located along the contour.[3] Patterson risked over half a million dollars on the system. Water first flowed through the system in 1910. The system is the first successful lift irrigation system in the world. The system is still in use today, operated by the Patterson Irrigation District serving an approximately 13,000-acre area east of the City of Patterson to the San Joaquin River. Laterals 3 North and 4 North running through the project site are part of this original system.[4]

In 1914, Thomas Patterson died. Thomas's uncle, another John D. Patterson, moved to the area from Toronto, Canada. He became the Colony's manager, continuing Thomas's vision. Thomas's son, John D. "Jack" Patterson, still owned much of the land in 1980.

ARCHAEOLOGICAL LITERATURE REVIEW

An archaeological literature review was conducted at the Central California Information Center (CCIC) in December of 2005 (file no. 6033N).[5] On their search of maps of the Patterson area, the CCIC reported a review of the National Register of Historic Resources, the California Register of Historic Resources, the *California Inventory of Historic Resources (1976)*, the *California Historical Landmarks (1990)*, and the California Points of Historical Interest listing (May 1992 and updates), the Directory of Properties in the Historic Property Data File (Office of Historic Preservation current computer list dated 08-08-2005), the CALTRANS State and Local Bridge Survey (1989 and updates), the *Survey of Surveys (1989)* GLO Plats, and other pertinent historic data available at the CCIC.

The CCIC records review uncovered no historic and/or prehistoric archaeological sites recorded inside the project borders, although there are both historic and prehistoric archaeological sites recorded in the general vicinity of Patterson.

A review of GLO Plats for T5S R7E (dated 1855-1870) and R8E (dated 1853-1869) revealed that the area had already been subdivided into parcels of varying sizes; there are no references to structures inside the VOP at that time. The 1953 version of the four U.S.G.S maps of the area

[3] City of Patterson, *City of Patterson General Plan Background Report*, 1992, p. VII-5.
[4] John Sweigard, General Manager, Patterson Irrigation District, personal communication, April 13. 2006.
[5] Central California Information Center, California Historical Resources Information System, Records search for Villages of Patterson project, Patterson, Stanislaus County, California. CCIC file# 6033N, December 2005.

(Brush Lake, Crows Landing, Patterson and Westley 7.5 minute maps) revealed numerous structures inside the study area.[6]

FIELD INSPECTION

A visual inspection of the project area was conducted by Holman & Associates between March 21st and 27th of 2006.[7] The full extent of the project area was surveyed in 20- to 30-meter transects depending on surface conditions, and each parcel was surveyed individually. In areas where the ground visibility was fair to excellent (11-100 percent of the surface area visible), 20-meter transects were used. In areas where visibility was poor (0-10 percent of surface area visible) 30-meter transects were used and soil was sampled approximately every 40 paces. Standard pedestrian survey techniques were used, including examination of all visible ground surfaces such as roads, canals, ditches, rodent holes, etc. Visibility in most of the project area was poor due to a thick layer of plants ranging from a mixture of weeds, mustard, and wild flowers to cultivated alfalfa and oat grass. Visibility was best in recently plowed fields and orchards.

Modern trash and irrigation equipment was noted throughout the project area but was not recorded. Several modern burn areas were noted at intervals along both Laterals 3 North and 4 North, and throughout the well-established orchards, but were also not recorded.

No surface evidence of prehistoric cultural resources was discovered anywhere inside the project borders; in particular along the former banks of Salado Creek, now enclosed in drainage pipe. Archaeological site indicators would have included darker-than-surrounding soils of a friable nature, evidence of fire (ash, charcoal, fire-altered rock or earth), concentrations of stone, bone, and fresh water shellfish, and artifacts of these materials. There is a large amount of fresh water clam shell in areas bordering the irrigation ditches, but none of this appears to be of prehistoric origin. Rather, the shell is the result of mucking out the ditches – live specimens of shellfish can still be observed within the laterals.

Potentially Significant Features Identified During Field Inspection

Potentially significant historic materials were found within the project site (location withheld). Fragments of historic pottery, glass, and metal were scattered in a debris field approximately 30 by 60 meters. A marker, placed by a private party, identified the area as the former site of the Robles Ranch, destroyed by fire in 1996. The debris included melted glass, aqua and amethyst bottle glass fragments, ceramic fragments (including blue transfer ware, porcelain, and improved

[6] Holman, 2006, pp. 3-4.
[7] Holman 2006, pp. 4-7.

white ware with monochromatic glaze in several colors, marble from household fixtures and fragments of farm machinery). It appears that this material has been spread around by historic plowing from a central area; no evidence of a building foundation was found. Other historic glass and pottery fragments in lesser quantities were found in two other locations (location withheld) along with aqua glass and crackle glazed white ware fragments.[8]

The field inspection also identified Patterson Irrigation District Laterals 3 North and 4 North as potentially significant features on the project site.[9]

HISTORIC SIGNIFICANCE OF RESOURCES UNDER CEQA

CEQA Guidelines Section 15064.5(a) define a "historical resource" as

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.

(2) A resource included in a local register of historical resources or identified as significant in an historical resource survey.

(3) Any ... building, structure, ... site ... which a lead agency determines to be historically significant or significant in the ... annals of California ... provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources.

Under Public Resources Code Section 5024.1 an historic resource is eligible for listing in the California Register of Historical Resources if it:

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

(B) Is associated with the lives of persons important in our past;

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

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA Guidelines require consideration of unique archeological resources as historical resources (Section 15064.5). A unique archeological resource is defined the Public Resources Code (Section 21083.2) as,

[8] Holman 2006, p. 5.
[9] Holman 2006, p. 5.

an archeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets the following criteria:

(1) Contains information needed to answer important research questions and that is a demonstrable public interest in that information;

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type;

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Evaluation of Potentially Significant Features

Early Twentieth Century Refuse Deposits

As discussed above, three refuse deposit sites were identified during field inspection of the site. The earliest deposition of materials would be associated with the early years after the founding of the Patterson Colony in 1909. Study of these refuse sites may yield information about the patterns of consumption of the early inhabitants of the Patterson Colony in the early Twentieth Century. However, such study is not likely to contribute to the understanding of important research questions of demonstrable public interest in local, state, or national history. Properties of the Plan Area were developed and occupied by individual buyers of land (and their successors) in the Patterson Colony and therefore such sites lack a direct association with Patterson's founder, Thomas Patterson. Substantial evidence, therefore, does not support a lead agency determination that the early-Twentieth-Century refuse deposits identified during field inspection of the project site, or that may be encountered during construction on the project site, would qualify as historical resources for the purposes of CEQA.

Patterson Irrigation District Laterals 3 North and 4 North

As discussed above, Laterals 3 North and 4 North are part of an innovative irrigation system conceived and constructed by the City's founder, Thomas Patterson, around 1910. Although this system is not listed or identified on any local, state, or federal register of historic resources, it appears that substantial evidence would support a determination that this irrigation system meets the criteria inclusion on the California Register and may therefore be considered "an historical resource" for the purposes of CEQA.

IMPACTS AND MITIGATION

SIGNIFICANCE CRITERIA

The CEQA Guidelines (Section 15064.5(b)) establish the criteria for assessing a significant environmental impact on historical resources. They state, "[a] project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." The CEQA Guidelines define "substantial adverse change" as a "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." The significance of an historic architectural resource is considered to be "materially impaired" when a project demolishes or materially alters the physical characteristics that justify the inclusion of the resource in the California Register, or that justify the inclusion of the resource in a local register, or that justify its eligibility for inclusion in the California Register as determined by the lead agency.

PROJECT IMPACTS AND MITIGATION

Impact K.1. Development of the proposed Villages of Patterson project may disturb or eliminate subsurface archeological resources from the prehistoric and historic eras. (Less than Significant)

A review of the archival record and a systematic surface reconnaissance and survey of the project area and percolation pond sites have uncovered no evidence of the presence of archeological resources from the prehistoric era in the project area. Three Twentieth Century refuse sites were observed during site reconnaissance. However, as discussed above, these features, and other such features that may be encountered during project construction, would not be considered historical resources for the purposes of CEQA. Therefore, the disturbance or elimination of such features would not result in a significant impact on historical resources under CEQA.

Although no evidence of archaeological resources was uncovered through a records search by the Central California Information Center or was observed through site reconnaissance, the presence of unique archeological resources on the project site cannot be conclusively ruled out without excavation or test borings. A tribe may be the only source of information about a Native American cultural place. Senate Bill 18, effective as of January 1, 2005, requires that a local government notify and consult with the appropriate California Native American tribes (identified on a list maintained by the Native American Heritage Commission) before adopting or amending a general plan or specific plan. As a condition of its approval of building permits, the City of Patterson requires compliance with the procedures set forth in CEQA Guidelines, Sections 15064.5(e) and (f), which provides procedures to be followed upon the accidental discovery of human remains or archeological resources during the course of construction. The procedures call

for ceasing excavation in the area of the find, contacting the County coroner in the event that human remains are uncovered, consulting with the Native American Heritage Commission if human remains are determined to be Native American, and having the find evaluated by a qualified archaeologist. Compliance with the requirements of SB 18 and the City's requirements for accidental discovery during construction would ensure that the potential impacts from the Villages of Patterson projects on archeological resources are less than significant.

Mitigation Measure. No mitigation necessary.

Impact K.2. Development of the proposed Villages of Patterson project would require that segments of irrigation Laterals 3 North and 4 North be piped underground through the project site, altering Patterson's historic irrigation system. (Less than Significant)

As discussed above, the irrigation system constructed by Thomas Patterson, and still in use today, could be considered an historical resource for the purposes of CEQA. Under the proposed Villages of Patterson project, irrigation Laterals 3 North and 4 North running through the project site would be piped underground along Fishman Avenue and Haynes Way irrigation easements. The laterals would resurface north of the project site and continue to serve water customers in lands to the north of the project site.

The Patterson irrigation system is an extensive feature comprised of pump stations at the San Joaquin River, pools, a main canal along Access Road, and 13 lateral canals running along the contour. The size of the district is about 13,225 irrigated acres, approximately 49 miles of open laterals and about 84 miles of pipeline sub laterals.[10] As linear features, the irrigation laterals are inherently repetitive in character.

Piping the segments that run through the project site (less than 2 miles total) would constitute a relatively minor alteration to an extensive and repetitive linear feature and would not constitute a material impairment of the features of the resource that justify the eligibility of the Patterson irrigation system for inclusion in the California Register of Historical Resources. As such, the proposed project would not have a significant impact on an historical resource under CEQA.

Mitigation Measure. No mitigation necessary.

[10] Stuart Stiles, et al. *Case Study: Modernization of the Patterson Irrigation District*, 1999, pp. 1-2.

L. COMMUNITY SERVICES

This Community Services section discusses existing school district and health care district services and the changes under the proposed project that would affect these services. The Initial Study found that project impacts related to community services would be less than significant under CEQA, and therefore no discussion was required in an EIR. However, schools and health care district services are discussed here for informational purposes. This Community Services section is based on available site information, the *City of Patterson General Plan,* the Patterson Joint Unified School District's current *School Facilities Needs Analysis,* dated May 8, 2006, and other information provided by the school district, and information obtained from reports prepared for the Del Puerto Health Care District.

SCHOOLS

SETTING

The project site lies within the Patterson Joint Unified School District (PJUSD or School District). The School District is bounded by the San Joaquin County border to the north, the San Joaquin River to the east, Marshall Road to the south, and Santa Clara and Alameda Counties to the west. The PJUSD currently has a loading policy of 20 students per K-3 classrooms, 25 students per 4-6 classrooms, and 30 students per 7-12 classrooms. To accommodate enrollment increases, the School District has added portable classrooms at most of its school sites. Three of the School District's five elementary schools (Northmead School, Las Palmas School, and Apricot Valley School), the middle school (Creekside Middle School), and two high schools (Patterson High School and Del Puerto High School) are located in the City of Patterson. The School District owns a 12-acre site along Ward Avenue in the Patterson Gardens project area that it plans to use for an elementary school. The School District owns a 56-acre site located on the corner of Baldwin Road and Zacharias Road that it plans to use for a high school. In addition, the School District recently purchased a 24.3-acre site on the corner of Walnut Avenue and Hartley Street within the Villages of Patterson project area to construct a new school to be used initially for a K-8 school and later for a middle school for students in grades 6-8. According to the School District, the new elementary school on Ward Avenue is expected to open in August 2011, the high school in August 2013, and the K-8 school on Walnut Avenue in August 2008.

The Yosemite Community College District (District) serves the Patterson area. The nearest community college is Modesto Junior College in Modesto, which has two campuses. The main campus is located on College Avenue, and Modesto Junior College West is located on Blue Gum Avenue. The colleges in the District offer a full program of courses suitable for transfer to a four-year college or university, and offer an Associate of Arts degree. The District is seeking to locate

a westside educational facility in or around Patterson that would be financed by the bond proceeds approved by District voters in 2004.

California State University, Stanislaus (CSUS), is located in Turlock, approximately 18 miles east of Patterson. CSUS offers a variety of four-year Bachelor of Arts and Science degrees, and a limited number of Master of Arts degrees. Chapman College in Modesto, a private college, offers Bachelor's and Master's degrees. A number of business and vocational schools are located in Modesto. The John F. Kennedy Special Education Center in Modesto provides a complete range of classes for the mentally handicapped, developmentally handicapped, and multi-handicapped students, from birth to 22 years of age. The center also provides vocational training and parent counseling.

REGULATORY FRAMEWORK

State of California

Leroy F. Greene School Facilities Act of 1998 (SB 50)

In 1998, major amendments were enacted to the 1986 statutory scheme for the financing of new or expanded K-12 school facilities created by new residential growth with the adoption of the Leroy F. Greene School Facilities Act of 1998 (SB 50). SB 50 allows qualifying school districts to directly charge additional developer fees on new residential development so that they can construct school facilities to serve these new developments. Prior to SB 50, a state-created maximum fee could be directly charged to developers by qualifying school districts[1] but after a series of court cases, school districts were sometimes able to obtain additional monies from developers either through additional fees as part of the lead agency's legislative land use approvals (such as general plan or zoning ordinances) or through mitigation imposed in the CEQA process. SB 50 changed the law to allow qualifying school districts to directly charge additional fees on new residential construction, but prohibited cities, counties and other local agencies from seeking additional mitigation. The School District's current School Facilities Needs Analysis ("SFNA") gives some of the background of this state-mandated provision for school facilities:

> In August 1998, the Governor signed into legislation Chapter 407 of the 1998 legislative session ("SB-50") which includes, in part, the Leroy F. Greene School Facilities Act of 1998 ("SFP"). This bill made major changes in the State school building program as well as the level of permissible school fees for districts in California. Education Code 17620 was amended to include the revised provisions of Sections 65995, 65995.5, 65995.6 and 65995.7.

[1] This fee still exists and is commonly known as a Level I Fee. See Jack Schreder & Associates, School Facility Needs Analysis for Patterson Joint Unified School District, April 5, 2006 p. 3.

> Prior to the passage of SB-50, school districts had been able to rely on a series of appellate court decisions known as "Mira-Hart-Murrieta." These court decisions had allowed or in some instances required municipalities, when making a legislative decision (such as general plan amendments, development agreements, zoning changes, etc.) concerning land use, to consider the impacts of that decision on school facilities and condition their approval on mitigation measures. These cases allow cities and counties to assist school districts by using their legislative power to fully mitigate the impacts of land development on school facilities. These measures could be in the form of mitigation payments higher than a Level I Fee, land dedication or other measures which the land use agencies agreed would mitigate the impacts of the proposed development. In addition, the California Environmental Quality Act ("CEQA") was interpreted by the "Mira" decisions to include mitigation for the environmental impact of a development, providing the school districts with a concurrent means to procure mitigation agreements to fund school facilities to meet the need resulting from additional development.
>
> SB-50 imposes limitations on the power of cities and counties in regard to requiring mitigation of school facilities impacts of new development. This law amends Section 65995(a) to provide that only those fees authorized by Education Code Section 17620 or 65970 may be imposed in connection with or made conditions of any legislative or adjudicative act by a local agency involving planning, use, or development of real property.[2]

After SB 50 became effective, school districts broadly were empowered to directly impose additional school facilities fees on new development, but cities and counties were prohibited from seeking additional mitigation. Under current law, the State sets a maximum default amount of allowable developer fees per square foot for residential, commercial, and industrial construction. These default amounts are commonly referred to as Level I Fees and are subject to adjustment for inflation.[3] The latest adjustment for inflation to Level I Fees occurred in January 2006 in which the State Allocation Board authorized the current base of Level I Fees in a maximum amount of $2.63 per square foot for residential construction and $0.42 per square foot for commercial and industrial construction. A school district may levy these fees so long as it conducts a developer fee justification study which demonstrates and supports the need to levy Level I fees pursuant to AB 1600, the statute governing imposition of developer fees in California. These current Level I Fees are the maximum school facilities fees permitted to be charged by a school district absent a district's findings of a need for alternative school facilities fees pursuant to Sections 65995.5 and 65995.7 of the Government Code. SB 50 sets forth the specific requirements that must be met in order for a school district to be eligible to directly adopt and impose alternate fees for new residential construction higher than the Level I Fee. The alternate fees imposed under Government Code Section 65995.5 are commonly referred to as Level II Fees and the alternate fees imposed under Government Code Section 65995.7 are commonly referred to as Level III

[2] Ibid., p. 3-4.
[3] Government Code § 65995(b). While often characterized as "default" amounts, Level I fees are subject to the justification study discussed below.

Fees. A school district meeting the eligibility requirements can charge Level II Fees during the time the State Allocation Board is appropriating funds to school districts for new construction as is currently the case. School districts that are eligible to charge Level II Fees may charge Level III Fees when notice is provided that such State bond funds are no longer available for disbursement.[4] In general, Level III fees are twice as much as Level II fees. Level II and Level III fees can only be levied for one year from the date of adoption and than a new SFNA must be prepared.

Most importantly for the purposes of the EIR, the provisions of SB 50 are deemed to provide full and complete school facilities mitigation and a local agency may not deny or refuse land use entitlements on the basis that school facilities are inadequate, notwithstanding the provisions of CEQA. The provisions of SB 50 are the exclusive means of both "considering" and "mitigating" school facilities impacts of projects.[5] According to Government Code Section 65996(b),

> The provisions of this chapter are hereby deemed to provide full and complete school facilities mitigation and, notwithstanding Section 65858, or Division 13 (commencing with Section 21000) of the Public Resources Code, or any other provision of state or local law, a state or local agency may not deny or refuse to approve a legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property or any change in governmental organization or reorganization, as defined in Section 56021 or 56073, on the basis that school facilities are inadequate.

Thus, with the Level II statutory fee in place, any impacts of the project on school facilities are mitigated because under SB 50, the statutory fees constitute full and complete mitigation by operation of law.[6]

City of Patterson

General Plan Goals and Policies

The *City of Patterson General Plan* Public Facilities and Services Element offers goals related to providing adequate school facilities to Patterson residents. Policies furthering these goals that are relevant to the Villages of Patterson project include:

- *Policy IV.G.1*: The City shall assist the Patterson Unified School District and others in locating and reserving appropriate sites of new schools.
- *Policy IV.G.2*: Standards established by the Patterson Unified School District shall be considered in determining the number and location of new school sites. These standards are based on the assumed average number of students per household for each grade level (which varies for different types of housing) and the average size of an elementary school, junior high school, or high school.

[4] Government Code § 65995.7(a)(1).
[5] Ibid., App. A at p. 12.
[6] Government Code § 65996(b).

- *Policy IV.G.3*: New elementary schools should, to the extent practicable, be located on collector streets within residential areas. Elementary schools should be sited to avoid bafflers such as railroad tracks and arterial streets that would separate them from the surrounding residential areas.
- *Policy IV.G.5*: The City shall support enactment of state legislation to finance the construction of new schools.
- *Policy IV.G.6*: The City shall approve only those development proposals that have recognized and mitigated their full impact on school facilities, as determined by the City Council. The City shall work with the Patterson Unified School District to identify, establish, and implement additional measures that may be necessary to adequately finance school facilities in the City.
- *Policy IV.G.7*: The City shall require, to the extent possible, that new school facilities are constructed concurrently with new residential development.

Policies IV.G.6 and IV.G.7 predated the passage of SB 50 and are interpreted in light of the restrictive language mandated to cities by that legislation.

Patterson Unified School District

School Facilities Needs Analysis

The School District adopted its most recent School Facilities Needs Analysis on May 8, 2006. The School District utilized this SFNA to establish Level II Fees of $4.93 per square foot and a Level III Fee of $9.86 per square foot.[7] Level II Fees are charged during the time the State Allocation Board is appropriating funds to school districts for new construction as is currently the case. Level III Fees may be triggered when notice is provided that such appropriations are no longer being made.[8] With the Level II statutory fee in place, any impacts of the project on school facilities are mitigated because under SB 50, the statutory fees constitute full and complete mitigation by operation of law.[9]

IMPACTS AND MITIGATION

Significance Criteria

Development within the project site would have a significant impact on school facilities if:

- It required new or physically altered facilities, the construction and/or operation of which could cause significant environmental impacts.

[7] Ibid., p. 2, 22, 23, 26.
[8] Ibid., p. 23, App. A – p. 11.
[9] Ibid., App. A at p. 13; Government Code § 65996(b).

Project Impacts and Mitigation

Impact L.1. The project would generate additional school-aged children which would increase the demand for school facilities. (Less than Significant)

The residential component of the Villages of Patterson Development Plan would generate additional school-aged children and increase the demand for school facilities, which would potentially have a physical impact on Patterson Unified School District school facilities. The School District has indicated that the project would generate an estimated 1,133 Grade K-5, 562 Grade 6-8, and 534 Grade 9-12 students. The School District estimates construction costs for facilities to house these students to be $92,844,388.[10] The School District does not indicate how much of this cost would be paid for by state funding as is anticipated by SB 50.

According to SB 50, the impact of the Villages of Patterson project on school facilities would be fully and completely mitigated by the project sponsor's payment of the school impact fee imposed by the School District. SB 50 preempts a City's or School District's ability to levy or impose fees in connection with, or made a condition of, any land use approval and the mitigation of the impacts of land use approvals on the need for new school facilities.[11] In addition, a local agency may not deny or refuse land use entitlements on the basis that school facilities are inadequate, notwithstanding other provisions of law, including CEQA. The provisions of SB 50 are the exclusive means of both "considering" and "mitigating" a project's school facility impact.[12]

As to the effects of the construction of school facilities themselves, these effects have been analyzed as part of the proposed Villages of Patterson project. The project is in the boundaries of the Patterson Joint Unified School District and the project would create the need for additional school facilities and such additional facilities could have an effect on the environment. The project anticipates that three schools would be located in the project area. One of the sites has already been acquired by the School District for a school that initially would be for students in grades K-8 but that ultimately would be used as a middle school for students in grades 6-8. The School District adopted a Negative Declaration in conformity with CEQA environmental review requirements for this school and construction is anticipated to begin in the fall of 2006. Thus, construction and operation of this school was determined by the School District to result in no significant environmental effects.

[10] Letter from School District counsel to Rod Simpson, Community Development Director, dated April 10, 2006.
[11] Government Code § 65995(e).
[12] See Jack Schreder & Associates, School Facility Needs Analysis for Patterson Joint Unified School District, April 5, 2006, App. A at p. 12.

The project Development Plan anticipates two further school sites within the boundaries of the project area based upon the student projections provided by the District to the City and the project sponsor. Both of these sites are anticipated to be used for elementary schools and would house students in grades K-5. The construction of these facilities has been included as part of the project for the Plan Area.

If the PJUSD determines that all or some of the school sites are not necessary facilities or elects not to build on those sites, the sites could be redesignated for residential uses. No additional substantial adverse physical impacts associated with the redesignation of these sites are anticipated that would differ from those being studied for the project as a whole.

Mitigation Measure No mitigation necessary.

Impact L.2. The expansion of employment opportunities in Patterson may attract households with school-aged children, resulting in a secondary impact on area schools. (Less than Significant)

Development of the job-creating components of the project would not directly generate additional school-aged children. However, it is possible that jobs generated by these industrial uses could induce workers to relocate to Patterson, thereby resulting in secondary impacts to schools because of an influx of new residents. State law mandates the maximum charge for school facilities that can be charged to development of commercial and industrial uses. PJUSD charges these maximums. The Villages of Patterson project would pay the requisite development impact fees imposed on commercial and residential development. In addition, new residential construction in the School District which houses these employees would also pay the maximum mitigation allowed by SB 50. Therefore, under SB 50 this impact would be considered fully mitigated by the payment of the statutory commercial and residential fees.

Mitigation Measure. No mitigation necessary.

HEALTH CARE DISTRICT

SETTING

The project site lies within the Del Puerto Health Care District (DPHCD or District). The DPHCD boundaries cover both the City of Patterson and unincorporated portions of western Stanislaus County, west of the San Joaquin River. Another health care district, the West Side Community Health Care District (WCHCD), covers the City of Newman, its environs and the portions of western Stanislaus County not in the DPHCD. Currently DPHCD provides ambulance services and a primary care and urgent care clinic on Ward Avenue at State Highway 33.

As a California health care district, the District is allowed to operate a variety of health-care-related services and facilities. The District operated the 40-bed Del Puerto Hospital since 1950. The hospital was closed in 1998. Its closure is part of a larger statewide trend in hospital closures and consolidation in the last ten years.[13] The reasons for hospital closures in this period include a reduction in the reimbursement rate for services provided to Medicare and MediCal patients; higher operating costs; costs of mandated seismic retrofitting of hospital buildings; and the declining demand for hospital beds resulting from more restrictive managed care policies and advances in medical technology.

The private, non-profit Golden Valley Health Center at State Highway 33 and "C" Street serves underserved communities and is currently expanding its hours and services with a grant from the state's Healthy Families Program.

The nearest acute care and emergency care medical facilities are regional facilities located in Turlock (about 16 miles), Modesto (about 18 miles), and Tracy (about 29 miles).

REGULATORY FRAMEWORK

City of Patterson

General Plan Goals and Policies

The *City of Patterson General Plan* Public Facilities and Services Element offers goals for providing health care to Patterson residents. Policies furthering these goals that are relevant to the Villages of Patterson project include:

- *Policy IV.H.1*: The City shall support the development and maintenance of adequate hospital and acute health care facilities in Patterson.
- *Policy IV.H.2*: The City shall encourage the development of convalescent facilities in the City.
- *Policy IV.H.3*: The City shall cooperate with the Patterson Health Care District in identifying and evaluating the impacts of demographic changes which may affect the need for new medical facilities.
- *Policy IV.H.4*: The City shall assist and cooperate with the Patterson Health Care District in levying and collecting fees to aid in the financing of necessary capital improvements to the health care facilities of the district.

[13] Nicholas C. Petris Center on Health Care Markets and Consumer Welfare, University of California School of Public Health, *California's Closed Hospitals*, 1995-2000, April 2001.

Del Puerto Health Care District

DPHCD is a California health care district organized and providing services under The Local Health Care District Law (Cal. Health & Safety Code Sections 32000 et seq.).

IMPACTS AND MITIGATION

Significance Criteria

Development within the project site would have a significant impact on health care facilities if:

- It required new or physically altered facilities, the construction and/or operation of which would cause significant environmental impacts.

Project Impacts and Mitigation

Impact L.3. The project would generate additional people and employment opportunities which would increase the demand for health care facilities. (Less than Significant)

The residential and the job-creating components of the Villages of Patterson Development Plan would generate additional residents and employees, contributing to increased demand for health care services and facilities.

A March 31, 2006 report from the District's consultants calculates impact fees and lists a number of possible new facilities including a hospital, medical office building, ambulatory surgery center, assisted living facility, skilled nursing facility, and new ambulances. The report accounts for existing and approved developments and also includes the proposed Villages of Patterson project. The report indicates that the Del Puerto Health Care District cannot generate the need for its facilities from the in-district population and adds the nearby communities of Newman and Gustine (located in the Westside Community Health Care District [WCHCD] to the DPHCD) service area.

The determination of need for new or expanded medical facilities in the greater Patterson area and nearby communities is a financial and policy issue, to be determined by the City of Patterson, the Del Puerto Health Care District, the communities of Newman and Gustine, the Westside Community Health Care District and the counties of Stanislaus and Merced. Evaluating the environmental impacts of such facilities would, therefore, be too speculative for analysis in this EIR.

The City may collect a development fee to aid in financing of necessary capital improvements to District facilities. Ongoing discussions between the City, the District, and the project sponsor will determine the project's "fair share" of impact fees. Contribution of a development fee to the District under General Plan Policy IV.H.4 would reduce potential impacts of the Villages of Patterson project related to health care facilities to a less-than-significant level.

Mitigation Measure. No mitigation necessary.

IV. OTHER CEQA CONSIDERATIONS

A. GROWTH INDUCEMENT

Growth inducement under the California Environmental Quality Act (CEQA) considers the ways in which the proposed project could encourage and facilitate population and economic growth, either directly or indirectly, in the surrounding environment. Direct increases in population and employment, such as those of the proposed project, may induce indirect economic and population growth and result in the demand for a range of goods and services to meet the production and consumption needs of the additional economic and residential activity. This section summarizes the project's direct growth in population and employment and describes the likelihood of associated induced growth and its potential impact.

The Villages of Patterson Development Plan proposes a large-scale, mixed-use development with varying residential densities. Development of the mixed-use project would include approximately 3,100 dwelling units (d.u.), 723,800 square feet (s.f.) of commercial/office/light industrial uses, and 267,900 s.f. of Public/Quasi-Public uses. Implementation of the proposed project would directly result in an increase in employment opportunities within the City of Patterson and an increase in the number of persons working and residing in the City of Patterson.

Population

Development of the 3,100-unit Villages of Patterson project to its contemplated capacity would contribute approximately 8,016 additional persons (based on General Plan household occupancy assumptions).[1] The approved Creekside and Patterson Gardens developments on the west side of town would contribute about 5,555 additional persons to the Department of Finance's 2005 population estimate for Patterson (approximately 16,200 persons) totaling about 21,755 persons for existing and approved residential development. The proposed project would increase the City's estimated population of 21,755 persons (including existing and approved residential development in Patterson) to 29,771 persons. With implementation of the Villages of Patterson Development Plan, the City would exceed the 29,000 population threshold set out in the General Plan (as revised in 2004) that should be reached before considering an expansion of the area

[1] See General Plan EIR, p. II-6. These occupancy rates are applied to the proposed Villages of Patterson Project as follows: 531 Low Density Residential units at 3 persons per unit equal 1,593 persons; 2,457 Medium Density Residential units at 2.5 persons per unit equal 6,143 persons; and 112 Village Circle Residential units at 2.5 persons per unit equal 280 persons. 1,593 + 6,143 + 280 = 8,016 persons.

designated for residential development by the General Plan.[2]

Employment

According to the California Employment Development Department, Patterson currently has an unemployment rate of about 12 percent, which is higher than the current unemployment rate (about 9 percent) for Stanislaus County as a whole.[3] According to the 2000 Census, 56.5 percent of the labor force that lived within the City actually worked there as well. Approximately 34.3 percent of all employed persons worked outside Patterson but within the County.[4] Employment opportunities attributable to the development of the commercial/office/light industrial and the public/quasi-public components of the proposed project are expected to be filled largely by residents of the region, including the residents of Patterson and residents of the Villages of Patterson. Since the proposed project does not have unusual labor requirements, construction labor requirements would be expected to be filled by the local and regional labor market available for construction projects without attracting construction labor from areas beyond the region's borders.

The *General Plan* estimates total employment for Patterson at full buildout at 14,000. In conjunction with the approved projects in West Patterson, the total number of jobs potentially available within the City of Patterson is likely to exceed *General Plan* projections. Given current unemployment rates and the jobs-to-housing imbalance in the City, this exceedance of the City's employment growth would not be significant. The increase in employment opportunities attributable to the proposed project's job-generating components would not contribute substantially to direct population growth. It is possible that new jobs generated by the proposed project could induce workers to relocate to Patterson, thereby resulting in secondary impacts on City facilities and services because of an influx of new residents. However, residential development in Patterson has historically outpaced the expansion of employment opportunities. Thus, in the future, the number of new jobs is not expected to exceed the planned housing supply.

Infrastructure

Supplying water to serve the Villages of Patterson project could induce growth if the volume of water made available were to substantially exceed planned demand leaving excess capacity for additional development. The proposed groundwater supply system would not have growth-

[2] City of Patterson, *General Plan Policy Document*, Policy I.A.2, as revised September 2004.
[3] California Employment Development Department, Labor Market Information Division, Labor Force Data for Sub-County Areas, February 2006. Accessed online at www.calmis.ca.gov/file/lfmonth/stanisub.xls.
[4] City of Patterson, Housing Element 2003-2008 of the General Plan, p. 21, 2004.

inducing effects as it is planned to accommodate only existing and projected demand generated by the project.

Likewise, the proposed Villages of Patterson wastewater collection system is designed to serve only the projected capacity generated by the proposed Villages of Patterson project. The wastewater collection system would not induce growth by making excess wastewater collection capacity available to additional development to the north and east of the project site, outside of the City's General Plan Area. A new sewer trunk is not proposed as part of the Development Plan. The proposed project does not include any expansion of the City's wastewater treatment plant.

The roadway improvements included in the Villages of Patterson Development Plan would not open new areas to development other than those of the project site. Surrounding areas are already accessible by existing roadways.

Although new infrastructure, service improvements, and amenities offered by the proposed Villages of Patterson project could make residential development northeast of the City more attractive and economical, demand for such development would have to be absorbed within the Villages of Patterson Plan Area, itself. The growth management policies of the City's General Plan would prevent additional development outside of the City's General Plan Area. Additional housing demand, beyond that generated by the project, would then be directed to other underdeveloped areas of the City's planning area that are already designated for residential development, northwest and southeast of the City. Based on the above discussion, the new infrastructure improvements analyzed in the EIR for the Villages of Patterson Development Plan would not cause growth-inducing impacts, either alone or in combination.

B. CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines requires that an EIR contain a discussion of cumulative impacts. In this EIR, cumulative impacts are discussed in applicable sections of Chapter III.

C. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with CEQA and the State CEQA Guidelines, the purpose of this section is to identify significant impacts that could not be eliminated or reduced to less-than-significant levels by implementing mitigation measures included in the proposed project or identified in the EIR.

The project, with mitigation, would have the following unavoidable significant impacts:

- Implementation of the proposed project would directly result in the permanent loss of Prime Farmland.
- Implementation of the Villages of Patterson Development Plan would contribute to the cumulative loss of Prime Farmland in the General Plan Area.
- Emissions of criteria pollutants during project operation would contribute to existing violations of the ambient air quality standards in the region.
- The Villages of Patterson project would contribute considerably to future cumulative significant impacts at study intersections.
- The project would cause a cumulatively considerable net increase of pollutants for which the San Joaquin Valley is designated as nonattainment.
- Treatment of groundwater and disposal of concentrated brine created as a byproduct of groundwater treatment could result in construction of new physical facilities on agricultural land, resulting in loss of agricultural land and temporary construction impacts, and in production of a waste product that may require special disposal methods.

D. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE CAUSED BY THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

Significant irreversible environmental changes would occur with development of the proposed Villages of Patterson project. The loss of agricultural resources on any parcel in the Plan Area would not be expected to be reversed once any of the project parcels develop, and would commit future generations to the residential, commercial, and light industrial uses proposed. Development would involve irreversible use of resources to construct buildings and infrastructure, including lumber, concrete, sand, gravel, masonry, metals, and water. However, development would not be expected to involve an unusual commitment of these resources, nor would it be expected to consume any of these resources in a wasteful manner.

Development of buildings and infrastructure, and occupancy of these buildings would use energy resources in the form of fossil fuels, including fuel oil, natural gas, and gasoline or diesel fuel for construction equipment and automobiles and trucks that would use the project site. Because individual buildings would be required to comply with California Code of Regulations Title 24 energy regulations, energy would not be used in a wasteful, inefficient or unnecessary manner. Energy consumption for treatment of groundwater in the future would increase demand for power generation in the region by 2020, but not in excess of expected future capacity.

V. ALTERNATIVES

This chapter identifies alternatives to the proposed Villages of Patterson Development Plan project and discusses the environmental effects associated with them. The California Environmental Quality Act (CEQA) Guidelines require that an EIR describe a reasonable range of alternatives to the proposed project that could feasibly attain most of the basic project objectives. The alternatives considered should focus on elimination or reduction of significant adverse impacts caused by the proposed project. The CEQA Guidelines further state that an EIR need not consider every conceivable alternative to the project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible.

The analysis of alternatives is of benefit to decision-makers because it provides more complete information about the impacts of land use decisions, and consequently a better understanding of the inter-relationships among all of the environmental topics under evaluation. The City of Patterson must consider approval of an alternative if that alternative would substantially lessen or avoid significant environmental impacts identified for the proposed projects and that alternative is determined to be feasible. The determination of feasibility will be made by the City of Patterson decision-makers.

The following alternatives are discussed and evaluated in this chapter: A. No Project/No Action Alternative; B. Existing General Plan Alternative; C. Decreased Project Site Alternative; and D. Off-Site Alternative.

A. NO PROJECT / NO ACTION ALTERNATIVE

CEQA requires an EIR to evaluate a No Project alternative. The purpose of the No Project alternative is to allow decision-makers to compare the effects of the proposed project with the effects of taking no action.

DESCRIPTION

Under the No Project / No Action Alternative, there would be no development of the Villages of Patterson Plan Area. The Plan Area would continue in its current agricultural uses with heavy industrial use adjacent to the California Northern Railroad right-of-way. The City's sphere of influence would not be expanded to include the portion of the Plan Area north of Olive Avenue. The Plan Area would not be annexed by the City of Patterson and would retain its current "General Agriculture" and "Urban Transition" County land use designations.

ENVIRONMENTAL ANALYSIS

This alternative reflects existing physical conditions in the Villages of Patterson Plan Area. If existing physical conditions in the project area were to continue for the foreseeable future, conditions described in detail in the Environmental Setting for each environmental topic in Chapter III would remain. Impacts identified for the Villages of Patterson would not occur under the No Project / No Action Alternative.

B. EXISTING GENERAL PLAN ALTERNATIVE

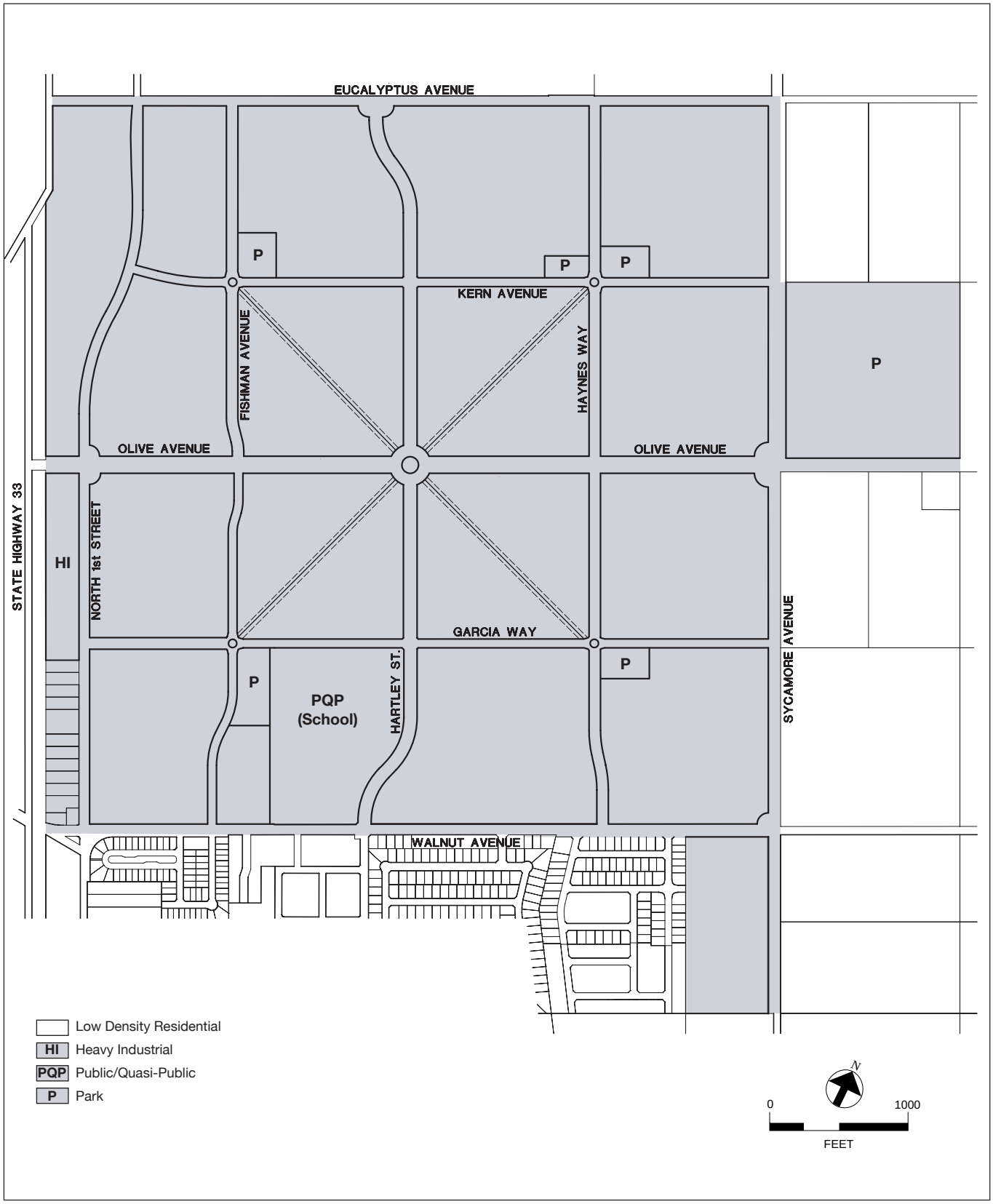
The Existing General Plan Alternative allows decision-makers to compare the proposed project with development that would be reasonably likely to occur under existing General Plan land use designations.

DESCRIPTION

This alternative assumes development in the Villages of Patterson Plan Area in accordance with the existing land use designations for the project site established by the City of Patterson General Plan (see **Figure V-1: Existing General Plan Alternative**). The existing 692-acre project site would remain the same as that of the proposed project. The circulation plan would be largely the same as that of the proposed project except that Sherman Circle would be eliminated, since there would be no mixed-use Village Circle core.

Table V-1: Existing Patterson General Plan Alternative Compared to the Proposed Project summarizes the land use program under this alternative and compares it to that of the proposed project. Under this alternative, about 595 acres would be developed with Low Density Residential (LR) use comprised of 2,500 single-family dwelling units.[1] A 155,000-sq.-ft. heavy industrial complex would be developed on the 8.9-acre site designated Heavy Industrial (HI).[2] The 27.3-acre area designated Public/Quasi-public (PQP) along Walnut Avenue would be developed as a school, as with the proposed project. The 40-acre portion of the Plan Area east of Sycamore Avenue would be developed into a dual use park and stormwater detention basin facility, as with the proposed project. A total of 21.1 acres of neighborhood parks would be developed at the center of each quadrant.

[1] The Low Density Residential designation allows for a wide range of densities (1.1 to 5 dwelling units per acre). For purposes of comparison, this alternative scenario assumes a density ratio for Low Density Residential comparable to that of the proposed project (about 4.2 dwelling units per acre).
[2] The Heavy Industrial designation allows for a Floor Area Ration (FAR) of 0.4 square feet of development for each square foot of the lot.



SOURCE: William Hezmalhalch Architects, Inc.
and Trunstone Consulting

FIGURE V-1: EXISTING GENERAL PLAN ALTERNATIVE

Table V-1: Existing Patterson General Plan Alternative Compared to the Proposed Project

LAND USE DESIGNATION	Existing General Plan Alternative	Proposed Project	Difference
Low Density Residential			
Acreage (ac)	594.7 ac	125.2 ac	469.5 ac
Residential Capacity (du)	2,500 du	531 du	1.969 du
Non-Res. Capacity (gsf)	NA	NA	NA
Medium Density Residential			
Acreage (ac)	0.0 ac	371.8 ac	(371.8) ac
Residential Capacity (du)	0 du	2,457 du	(2,457) du
Non-Res. Capacity (gsf)	NA	NA	NA
Village Circle			
Acreage (ac)	0.0 ac	25.9 ac	(25.9) ac
Residential Capacity (du)	0 du	112 du	(112) du
Non-Res. Capacity (gsf)	0 gsf	100,000 gsf	(100,000) gsf
Light Industrial			
Acreage (ac)	0.0 ac	35.9 ac	(35.9) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	0 gsf	623,800 gsf	(623,800) gsf
Heavy Industrial			
Acreage (ac)	8.9 ac	0.0 ac	8.9 ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	155,000 gsf	0 gsf	155,000 gsf
Public/Quasi-Public			
Acreage (ac)	0.0 ac	12.3 ac	(12.3) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	0 gsf	267,900 gsf	(267, 900) gsf
School			
Acreage (ac)	27.3 ac	56.1 ac	(28.8) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	NA	NA	NA
Parks			
Acreage (ac)	61.1 ac	65.6 ac	(4.5) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	NA	NA	NA
TOTAL			
Acreage (ac)	**692 ac**	**692 ac**	**0**
Residential Capacity (du)	**2,500 du**	**3,100 du**	**(600) du**
Non-Res. Capacity (gsf)	**155,000 gsf**	**991,700 gsf**	**(836,700) gsf**

Notes: Values in parenthesis (#) denote a negative value.

Source: The Villages of Patterson Development Plan and the City of Patterson.

ENVIRONMENTAL ANALYSIS

Land Use

The potential for land use compatibility conflicts arising from the placement of residential uses adjacent to ongoing agricultural operations would be similar in character to that described for the proposed project in EIR Section III.A, Land Use, although somewhat reduced in magnitude with this alternative because it would introduce fewer residences at a lower density. Note, however, that the relatively high densities and compact development patterns proposed under the Villages of Patterson project are intended to meet housing demand on less acreage. The lower density development under the Existing General Plan Alternative may require that demand for new housing be met on undeveloped land elsewhere on the outskirts of Patterson. As such, the potential for land use compatibility conflicts would be increased under the Existing General Plan Alternative, if development of additional agricultural acreage in proximity to ongoing agricultural operations is required. The potential for land use compatibility conflicts arising from the placement of residences next to non-residential uses would be greater under this alternative since it would place heavy industrial uses next to residences. Like that of the proposed project, the potential for land use compatibility conflicts resulting from this alternative would be considered less than significant under CEQA.

Visual Resources

The impact on visual resources under this alternative would be substantially the same in character and magnitude as that described for the proposed project in EIR Section III.B, Visual Resources. As with the proposed project, the existing open agricultural visual character of the Plan Area would be transformed into that of developed urban land. Note, however, that the relatively high densities and compact development patterns proposed under the Villages of Patterson project are intended to meet housing demand on less acreage. The lower density development under the Existing General Plan Alternative may require that demand for new housing be met on undeveloped land elsewhere on the outskirts of Patterson. As such, the indirect impacts on visual resources could be increased under the Existing General Plan Alternative. Like that of the proposed project, the impact on visual resources resulting from this alternative would be considered less than significant under CEQA.

Agricultural Resources

The impact on agricultural resources under this alternative would be the same in character and magnitude as that described for the proposed project in EIR Section III.C, Agricultural Resources. As with the proposed project, this alternative would require the conversion of about 683 acres of Prime Farmland. The relatively high densities and compact development patterns proposed under

the Villages of Patterson project are intended to meet housing demand on less acreage. The lower density development under the Existing General Plan Alternative may require that demand for new housing be met on Prime Farmland elsewhere on the outskirts of Patterson, resulting in the loss of additional Prime Farmland. Therefore, this alternative could result in additional indirect impacts to agricultural resources. Like that of the proposed project, the impact on agricultural resources resulting from this alternative would be considered significant under CEQA.

Transportation and Circulation

It is projected that there would be fewer trips generated under this alternative than from the proposed project. Approximately 1,501 trips would be generated during the a.m. peak hour and approximately 2,061 trips during the p.m. peak hour, representing about 57 percent and 61 percent of the a.m. and p.m. trips for the proposed Villages of Patterson project, respectively. It is therefore anticipated that impacts of this alternative on the surrounding street system would be reduced commensurately.

This alternative does not include the mixed-use Village Circle core, with its opportunities for multi-family residential, office, retail, civic uses and home-based businesses. Therefore, the decrease in trip generation under this alternative would be offset somewhat by an increased number of trips outside of the project area, to services and places of work that would otherwise be offered within the Village Circle under the proposed project.

It is likely that at intersections where the Villages of Patterson Development Plan would contribute less than 15 percent of total traffic, such as those along Sperry Avenue, the Existing General Plan Alternative would not result in significant traffic impacts. Mitigation measures identified for significant traffic impacts of the proposed project at the seven intersections along Sperry Avenue would not likely be necessary. The intersections along Highway 33, West Main Avenue, and Las Palmas would be expected to continue to operate at unacceptable LOS with this alternative and mitigation would be necessary. Recommendations to improve at-grade rail crossings on Olive Avenue and M Street, identified for the proposed project in this EIR, would still be applicable to this alternative.

Air Quality

This alternative would cause impacts similar in character to those described in EIR Section III.E, Air Quality, although reduced in magnitude commensurate with the reduced development capacity under this alternative. With approximately 20 percent fewer vehicle trips, traffic-generated air emissions would be substantially reduced. However, as with the proposed project, even with implementation of mitigation measures for Impact E.2, this alternative would not

reduce impacts to regional ozone and particulate matter concentrations to a less-than-significant level. This impact would remain significant and unavoidable.

Noise

Traffic-related noise impacts under this alternative would be largely similar in character to that described for the proposed project in EIR Section F, Noise (see Impact F.2) although reduced in magnitude. The difference in the average daily traffic volume with this alternative would be approximately 20 percent less overall than that of the proposed project. The decrease in traffic under this alternative would correspond to a decrease in the contribution to the cumulative traffic noise L_{dn} of about 1 dB from that of the proposed project. Like the proposed project, cumulative noise levels would not exceed the 60 dB standard for acceptable noise exposure for residences established in the General Plan, and would therefore be considered less than significant.

The potential for noise impacts resulting from the placement of residences in close proximity to non-residential uses would be similar to those described in Impact F.4 for the proposed project, although intensified under this alternative since heavy industrial uses generally create more environmental noise than the commercial/light industrial uses called for under the proposed project. Mitigation Measure F.4 would apply to this impact. It is assumed that these would mitigate potential noise impacts of heavy industrial uses on nearby residences to a less-than-significant level. The potential noise impacts resulting from placement of residences in proximity to the California Northern Railroad would be increased under this alternative. Unlike the proposed project, new residences on the project site would not be buffered by intervening light industrial land and buildings. Noise impacts associated with public/quasi-public, educational, and park land uses are expected to be the same as with the proposed Villages of Patterson project and are expected to be less than significant.

Water Supply

Impacts under this alternative related to water supply would be substantially the same in character as those described for the proposed project in EIR Section III.J, Water Supply, but water demand would be proportionally reduced commensurate with the smaller anticipated population under this alternative.

Community Services

Impacts under this alternative related to community services would be substantially the same in character as those described for the proposed project in EIR Section III.L, Community Services, but demand for community services would be proportionally reduced in commensurate with the smaller anticipated population under this alternative.

Other Topics

This alternative would convert and develop the same properties as those of the proposed project with urban uses. Although the types of uses and their location and densities are modified, impacts under this alternative related to hazardous materials, biological resources, hydrology and water quality and historical resources would be the substantially the same as those described in Chapter III of this EIR for the proposed project.

C. DECREASED PROJECT SITE ALTERNATIVE

The Decreased Project Site Alternative allows decision-makers to compare the proposed project to an alternative with a similar mix of uses and densities as under the proposed project, but within a smaller project area, with less development capacity. This alternative would not require an expansion of the City's Sphere of Influence.

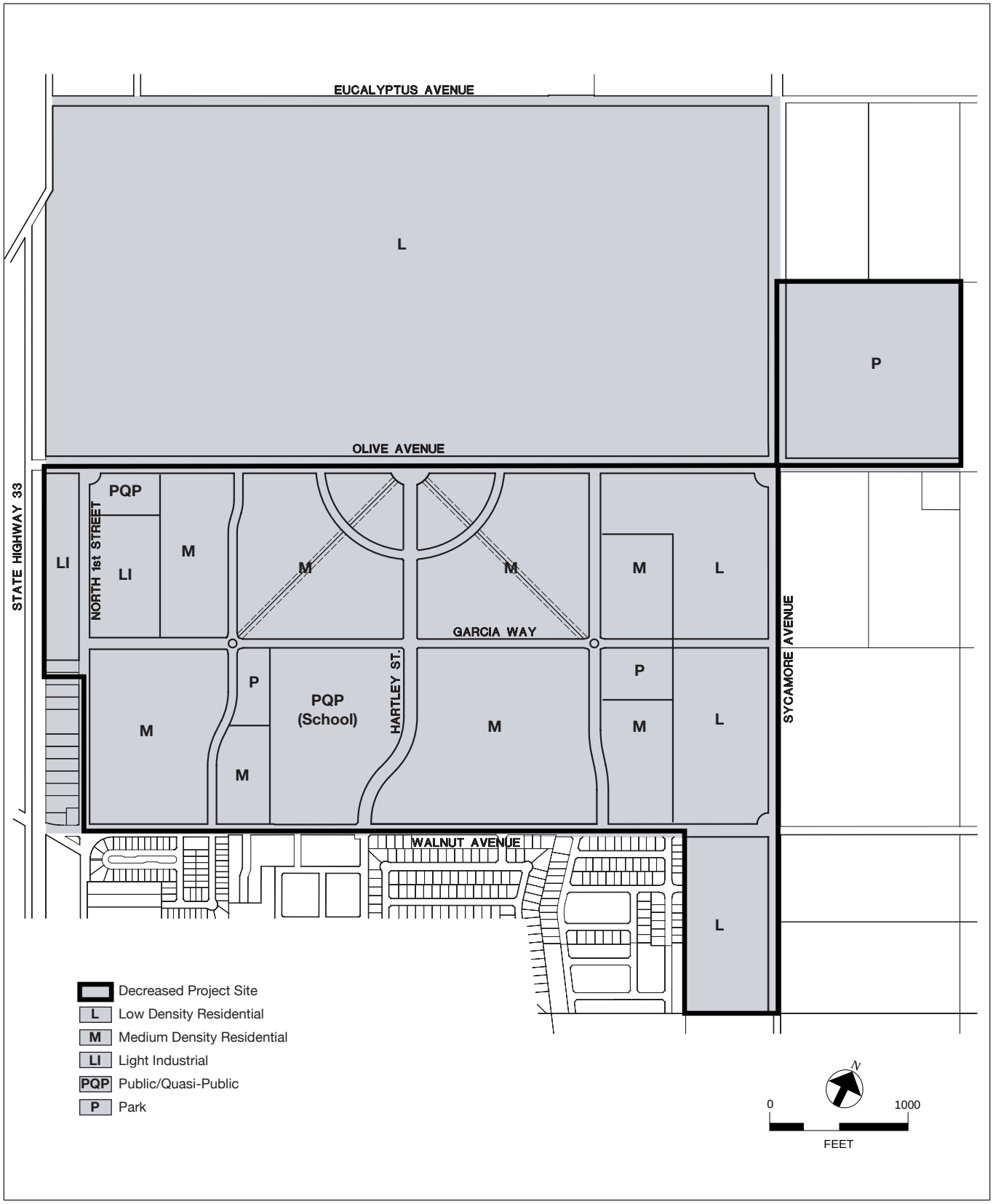
DESCRIPTION

This alternative confines development to the 332-acre southern portion of the Plan Area. Like the proposed project and the Existing General Plan Alternative, this alternative also includes the 40-acre area east of Sycamore Avenue for use as a dual purpose park and for stormwater detention (see **Figure V-2: Decreased Project Site Alternative**). The character and location of uses, and the circulation plan would be generally comparable to that of the proposed project south of Olive Avenue. Development capacity would be roughly one-half that of the proposed project.

Table V-2: Decreased Project Site Alternative Compared to Proposed Project summarizes the land use program under this alternative and compares it to that of the proposed project. Under this alternative, 70.8 acres would be developed with Low Density Residential (LR) use comprised of 300 single-family dwelling units, [3] and 182.6 acres would be developed with Medium Density Residential (MR) comprised of 1,207 single-family and attached townhouse dwelling units.[4] Along the south side of Olive Avenue an 11.1-acre area would be developed with 50,000 gsf of Village Circle commercial use and 48 dwelling units. Along the south side of Olive Avenue would be a total of 6.2 acres of Public/Quasi-Public use along both sides of N. 1st

[3] The Low Density Residential designation allows for a wide range of densities (1.1 to 5 dwelling units per acre). For purposes of comparison, this alternative scenario assumes a density ratio for Low Density Residential comparable to that of the proposed project (about 4.2 dwelling units per acre).

[4] The Medium Density Residential designation allows for a wide range of densities (5.1 to 12 dwelling units per acre). For purposes of comparison, this alternative scenario assumes a density ratio for Medium Density Residential comparable to that of the proposed project (about 6.6 dwelling units per acre).



SOURCE: William Hezmalhalch Architects, Inc.
and Trunstone Consulting

FIGURE V-2: DECREASED PROJECT SITE ALTERNATIVE

Table V-2: Decreased Project Site Alternative Compared to Proposed Project

LAND USE DESIGNATION	Decreased Project Site Alternative	Proposed Project	Difference
Low Density Residential			
Acreage (ac)	70.8 ac	125.2 ac	(54.4) ac
Residential Capacity (du)	300 du	531 du	(231) du
Non-Res. Capacity (gsf)	NA	NA	NA
Medium Density Residential			
Acreage (ac)	182.6 ac	371.8 ac	(189.2) ac
Residential Capacity (du)	1,207 du	2,457 du	(1,250) du
Non-Res. Capacity (gsf)	NA	NA	NA
Village Circle			
Acreage (ac)	11.1 ac	25.9 ac	(14.8) ac
Residential Capacity (du)	48 du	112 du	(64) du
Non-Res. Capacity (gsf)	50,000 gsf	100,000 gsf	(50,000) gsf
Light Industrial			
Acreage (ac)	18.5 ac	35.9 ac	(17.4) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	311,900 gsf	623,800 gsf	(311,900) gsf
Public/Quasi-Public			
Acreage (ac)	6.2 ac	12.3 ac	(6.1) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	133,950 gsf	267,900 gsf	(133,950) gsf
School			
Acreage (ac)	27.3 ac	56.1 ac	(28.8) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	NA	NA	NA
Parks			
Acreage (ac)	53.1 ac	65.6 ac	(12.5) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	NA	NA	NA
TOTAL			
Acreage (ac)	**370 ac**	**692 ac**	**(322)**
Residential Capacity (du)	**1,555 du**	**3,100 du**	**(1,545) du**
Non-Res. Capacity (gsf)	**495,850 gsf**	**991,700 gsf**	**(495,850) gsf**

Notes: Values in parenthesis (#) denote a negative value.

Source: The Villages of Patterson Development Plan and the City of Patterson.

Street. A 311,900-sq.-ft. Light Industrial (LI) complex would be constructed on a total of 18.5 acres along both sides of N. 1st Street, north of Garcia Way. The 27.3 acre-area designated Pubic/Quasi-Public (PQP) along Walnut Avenue would be developed with a school, as with the proposed project and the Existing General Plan Alternative. The 40-acre portion of the Plan Area east of Sycamore Avenue would be developed into a dual use park and stormwater detention basin facility, as with the proposed project and the existing General Plan Alternative. A total of 13.1 acres of neighborhood parks would be developed at the center of the eastern and western portions of the decreased project site.

ENVIRONMENTAL ANALYSIS

Land Use

The potential for land use compatibility conflicts arising from the placement of residential uses adjacent to ongoing agricultural operations would be similar in character to that described for the proposed project in EIR Section III.A, Land Use, although somewhat reduced in magnitude with this alternative because it would introduce fewer residences. Note, however, that the decreased number of residential units produced under this alternative may require that demand for new housing be met on undeveloped land elsewhere on the outskirts of Patterson including the northern portion of the project site, or other areas designated Low Density Residential. As such, the potential for land use compatibility conflicts might not be reduced under this alternative. The potential for land use compatibility conflicts arising from the placement of residences next to light industrial uses would be similar in character as that described for the proposed project. Like that of the proposed project, the potential for land use compatibility conflicts resulting from this alternative would be considered less than significant under CEQA.

Visual Resources

The impact on visual resources under this alternative would be similar in character to that described for the proposed project in EIR Section III.B, Visual Resources, although substantially reduced in magnitude. As with the proposed project, the existing open agricultural visual character of the Plan Area would be transformed into that of developed urban land, although substantially less agricultural acreage would be developed. Open vistas to the Diablo Range across agricultural land in the northern portion of the project site would remain. The decreased number of residential units produced under this alternative may require that demand for new housing be met on undeveloped land elsewhere on the outskirts of Patterson including the northern portion of the project site, or other areas designated Low Density Residential. As such, the impact on visual resources might not be reduced under this alternative over the long term. Like that of the proposed project, the impact on visual resources resulting from this alternative would be considered less than significant under CEQA.

Agricultural Resources

Impacts on agricultural resources under this alternative would be the similar in character to those described for the proposed project in EIR Section III.C, Agricultural Resources, although substantially reduced in magnitude. This alternative would require the conversion of about 360 acres of Prime Farmland. The decreased number of residential units produced under this alternative may require that demand for new housing be met on Prime Farmland elsewhere on the outskirts of Patterson including the northern portion of the project site, or other areas designated Low Density Residential. As such, the impact on agricultural resources would not be reduced under this alternative. Like that of the proposed project, the impact on agricultural resources resulting from this alternative would be considered significant under CEQA.

Transportation and Circulation

Because development under this alternative would be similar in character and density to the proposed project, but roughly one half of the capacity of the proposed project, it is estimated that the trip generations would be commensurately reduced by one-half, to 1,325 trips during the a.m. peak hour and 1,670 trips during p.m. peak hour. This alternative would not contribute to unacceptable LOS E and F at the Sperry Avenue / I-5 on- and off-ramps in 2030, unlike the proposed project. The proposed project would contribute over 40 percent of the traffic at the two significantly impacted intersections of Highway 33 / Eucalyptus Avenue, and Highway 33 / Olive Avenue; the Decreased Project Site Alternative would contribute fewer vehicles to these intersections but would still be expected to result in unacceptable LOS at these two locations. Other intersections that would operate at unacceptable LOS E or F in 2030 would do so with or without traffic generated by the proposed project or this alternative.

Air Quality

This alternative would cause impacts similar in character to those described in EIR Section III.E, Air Quality, although reduced in magnitude commensurate with the reduced development capacity under this alternative. With approximately 50 percent fewer vehicle trips, traffic-generated air emissions would be substantially reduced. However, as with the proposed project, even with implementation of mitigation measures for Impact E.2, this alternative would not reduce impacts to regional ozone and particulate matter concentrations to a less-than-significant level. This impact would remain significant and unavoidable.

Noise

Traffic-related noise impacts under this alternative would be largely similar in character to that described for the proposed project in EIR Section F, Noise (see Impact F.2), although reduced in magnitude. Olive Avenue would replace Eucalyptus Avenue as the northern perimeter of the

alternative site. Traffic-related noise impacts described for existing residences on the north side of Eucalyptus Avenue under the proposed project would therefore shift to existing residences on the north side of Olive Avenue. The difference in the average daily traffic volume with this alternative would be approximately 50 percent less overall than that of the proposed project. The decrease in traffic under this alternative would correspond to a decrease in the contribution to the cumulative traffic noise L_{dn} of about 3 dB from that of the proposed project. Like the proposed project, cumulative noise levels would not exceed the 60 dB standard for acceptable noise exposure for residences established in the General Plan, and would therefore be considered less than significant.

Because this alternative would include a similar mix of land uses, the potential for noise impacts and mitigation measures related to placement of sensitive receptors in close proximity to other uses would be largely the same as those described in Impact F.4 for the proposed project, and are expected to be less than significant.

Hazards

Impacts under this alternative related to potential exposure to hazardous materials would be the same as those described for the proposed project in EIR Section III.G, Hazards, with respect to potential hazards identified on the southern portion of the project site.

Biological Resources

Impacts under this alternative related to biological resources would be the same as those described for the proposed project in EIR Section III.H, Biological Resources, with respect to potential biological resources identified on the southern portion of the project site. Habitat for Swainson's Hawk and Loggerhead Shrike and other bird-foraging areas would be reduced under this alternative, but by less than with the proposed project. Mitigation measures identified for the proposed project would remain the same under this alternative.

Hydrology and Water Quality

Impacts under this alternative related to hydrology and water quality would be the same as those described for the proposed project in EIR Section III.I, Hydrology and Water Quality, with respect to conditions identified on the southern portion of the project site. Mitigation measures identified for the proposed project would be decreased because the area subject to potential flooding impacts would be smaller.

Water Supply

Impacts under this alternative related to water supply would be substantially the same in character as those described for the proposed project in EIR Section III.J, Water Supply, but water demand would be proportionally reduced commensurate with the smaller anticipated population under this alternative.

Historical Resources

Impacts under this alternative related to historical resources would be the same as those described for the proposed project in EIR Section III.K, Historical Resources, with respect to potential historical resources identified on the southern portion of the project site.

Community Services

Impacts under this alternative related to community services would be substantially the same in character as those described for the proposed project in EIR Section III.L, Community Services, but demand for community services would be proportionally reduced under this alternative commensurate with a smaller anticipated population under this alternative.

D. OFF-SITE ALTERNATIVE

The Off-Site Alternative allows decision-makers to compare the proposed project with a hypothetical new development of similar character and roughly comparable size in a different location within the City's General Plan area.

DESCRIPTION

This alternative assumes development of the 522-acre area to the east and southeast of the City, outside of the incorporated boundaries of the City but within the City's General Plan Area (south of Walnut Avenue, North of the Main Canal and east of State Highway 33). See Figure II-2, p. II.4. This 522-acre area is designated Low Density Residential (280 acres); Light Industrial (151 acres); and Heavy Industrial (91 acres).

The alternative site would be developed with the same types and density of uses as those of the proposed project. **Table V-3: Off-Site Alternative Compared to the Proposed Project** summarizes the land use program under this alternative and compares it to that of the proposed project. Across all use categories uniformly, this alternative would amount to an approximately 25 percent reduction in acreage, dwelling units, and non-residential development capacity.

Table V-3: Off-Site Alternative Compared to the Proposed Project

LAND USE DESIGNATION	Off-Site Alternative	Proposed Project	Difference (about 25% Less)
Low Density Residential			
Acreage (ac)	94.4 ac	125.2 ac	(30.8) ac
Residential Capacity (du)	400 du	531 du	(131) du
Non-Res. Capacity (gsf)	NA	NA	NA
Medium Density Residential			
Acreage (ac)	280.0 ac	371.8 ac	(91.8) ac
Residential Capacity (du)	1,853 du	2,457 du	(604) du
Non-Res. Capacity (gsf)	NA	NA	NA
Village Circle			
Acreage (ac)	19.5 ac	25.9 ac	(6.4) ac
Residential Capacity (du)	85 du	112 du	(27) du
Non-Res. Capacity (gsf)	75,430 gsf	100,000 gsf	(24,570) gsf
Light Industrial			
Acreage (ac)	27.1 ac	35.9 ac	(8.8) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	470,532 gsf	623,800 gsf	(153,268) gsf
Heavy Industrial			
Acreage (ac)	0.0 ac	0.0 ac	0.0 ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	0 gsf	0 gsf	0 gsf
Public/Quasi-Public			
Acreage (ac)	9.3 ac	12.3 ac	(3.0) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	202,077 gsf	267,900 gsf	(65,823) gsf
School			
Acreage (ac)	42.3 ac	56.1 ac	(13.8) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	NA	NA	NA
Parks			
Acreage (ac)	49.5 ac	65.6 ac	(16.1) ac
Residential Capacity (du)	NA	NA	NA
Non-Res. Capacity (gsf)	NA	NA	NA
TOTAL			
Acreage (ac)	**522 ac**	**692 ac**	**(170)**
Residential Capacity (du)	**2,338 du**	**3,100 du**	**(762) du**
Non-Res. Capacity (gsf)	**748,039 gsf**	**991,700 gsf**	**(243,661) gsf**

Notes: Values in parenthesis (#) denote a negative value.

Source: The Villages of Patterson Development Plan and the City of Patterson

Under this alternative, 94.4 acres would be developed with Low Density Residential (LR) use comprised of 400 single-family dwelling units,[5] and 280 acres would be developed with Medium Density Residential (MR) comprised of 1,853 single-family and attached townhouse dwelling units.[6] Along both sides of Orange Avenue, midway between Locust Avenue and Sycamore Avenue, would be developed with a mixed use Village Circle, including 75,430 gsf of Village Commercial use and 85 dwelling units. The east side Highway 33 within the alternative site would be developed with a 27.1-acre, 470,532 gsf Light Industrial complex. A 9.3-acre area at the northwest corner of Locust Avenue and Orange Ave would be designated Public/Quasi-Public. A total of 42.3 acres would be dedicated to schools and 49.5 acres would be dedicated to parks (including a dual use park/detention basin facility).

ENVIRONMENTAL ANALYSIS

Land Use

Like the project site, the alternative site is agricultural land located immediately outside of the developed town. The potential for land use compatibility conflicts arising from the placement of residential uses adjacent to ongoing agricultural operations would be similar in character to that described for the proposed project in EIR Section III.A, Land Use. The potential for land use compatibility conflicts arising from the placement of residences next to non-residential uses would be somewhat greater under this alternative since it would place new residential uses in close proximity with ongoing and planned-for heavy industrial activity in the southeast of Patterson. Like that of the proposed project, the potential for land use compatibility conflicts resulting from this alternative would be considered less than significant under CEQA.

Visual Resources

The alternative site has a similar visual character as the project site described in EIR Section III.B, Visual Resources. The impact on visual resources under this alternative would be similar in character to that described for the proposed project in that section. As with the proposed project, the existing open agricultural visual character of the alternative site would be transformed into that of developed urban land. Eastward views from Sycamore Avenue across open agricultural land to the Diablo Range would be interrupted. Like that of the proposed project, the impact on visual resources resulting from this alternative would be considered less than significant under CEQA.

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[5] The Low Density Residential designation allows for a wide range of densities (1.1 to 5 dwelling units per acre). For purposes of comparison, this alternative scenario assumes a density ratio for Low Density Residential comparable to that of the proposed project (about 4.2 dwelling units per acre).

[6] The Medium Density Residential designation allows for a wide range of densities (5.1 to 12 dwelling units per acre). For purposes of comparison, this alternative scenario assumes a density ratio for Medium Density Residential comparable to that of the proposed project (about 6.6 dwelling units per acre).

Agricultural Resources

Impacts on agricultural resources under this alternative would be similar in character to those described for the proposed project in EIR Section III.C, Agricultural Resources, although reduced in magnitude. This alternative would require the conversion of about 522 acres of Prime Farmland, rather than 692 acres under the proposed project. Like that of the proposed project, the impact on agricultural resources resulting from this alternative would be considered significant under CEQA.

Transportation and Circulation

It is projected that there would be approximately 25 percent fewer trips generated under this alternative than from the proposed project. Approximately 1989 trips would be generated during the a.m. peak hour and approximately 2503 trips during the p.m. peak hour. It is therefore anticipated that impacts of this alternative on the surrounding street system would be less than that of the proposed project. Trip distribution could be somewhat different for this alternative, with, for example, potentially more traffic using Sperry Avenue to travel to places of employment in the West Patterson Business Park area rather than Zachary Road. It is not likely that this change in distribution would substantially improve LOS along Zachary Road or SR 33 sufficiently to reduce the need for mitigation measures, although the mitigation measures could be slightly different from those identified for the proposed project in Section III.D, Transportation and Circulation

Air Quality

This alternative would cause impacts similar in character to those described in EIR Section III.E, Air Quality although reduced in magnitude commensurate with the reduced development capacity under this alternative. Localized construction air quality impacts would be similar to those described for the proposed project in EIR Section III.E, Air Quality, but would affect residences and businesses south in the vicinity of the alternative location rather than in the Villages of Patterson project vicinity. With approximately 25 percent fewer vehicle trips, traffic-generated air emissions would be substantially reduced. However, as with the proposed project, even with implementation of mitigation measures for Impact E.2, this alternative would not reduce impacts to regional ozone and particulate matter concentrations to a less than significant level. This impact would remain significant and unavoidable.

Noise

Traffic-related noise impacts under this alternative would be generally similar in character to that described for the proposed project in EIR Section F, Noise (see Impact F.2) although reduced in magnitude commensurate with an approximately 25 percent decrease in residential units and non-

residential development capacity. The decrease in traffic under this alternative would correspond to a decrease in the contribution to the cumulative traffic noise L_{dn} of about 1-2 dB from that of the proposed project. Like the proposed project, cumulative noise levels would not exceed the 60 dB standard for acceptable noise exposure for residences established in the General Plan, and would therefore be considered less than significant.

Hazards

EIR Section III.G, Hazardous Materials, identifies the presence of hazardous materials on the project site that are typical of agricultural production in the area historically (e.g., pesticides application, petroleum staining and storage tanks, lead and asbestos in existing buildings). Like the proposed project site, the alternative site has been used for similar types and scale of agricultural production since the early 20th century. No study of potential hazardous materials on the alternative site has been undertaken as part of this EIR. However, it may be assumed that the alternative site would have a similar potential for the presence of hazardous materials as that of the proposed project, identified in EIR Section III.G, Hazardous Materials. Like the proposed project, the impacts related to hazardous materials would be less than significant with implementation of the mitigation measures identified in that section.

Biological Resources

EIR Section III.H, Biological Resources, describes the biotic habitats on the proposed project site (e.g., irrigated row crops, orchards, fallow fields, ruderal habitat, and aquatic habitat). Like the proposed project site, the alternative site is located on the outskirts of the east side of town and has been used for irrigated agricultural production since the early 20th Century. The alternative site is characterized by similar biologic habitats as those described in the EIR. No study of potential biological resources on the alternative site is undertaken as part of this EIR. However, given its similar characteristics and close proximity to the project site, it is expected that the alternative site would have a similar potential for the presence of biological resources as that of the proposed project site. Similar impacts and mitigation measures as those identified for the proposed project site would likely apply to the alternative site.

Hydrology and Water Quality

Unlike the proposed project site, the alternative site is not located within the FEMA flood hazard zone (see **Figure III.I-2**). Impact I.1, identified in EIR Section III.1, Hydrology and Water Quality, would therefore not apply to the alternative site. This potential impact and associated mitigation measures would be avoided under the Off-Site Alternative. Other impacts of developing the alternative site would be substantially similar in character as those described in that section (e.g, impacts related to increased runoff from new impervious surfaces, groundwater

recharge, construction, and regional impacts on groundwater quality) and similar mitigation measures would be called for in the alternative location. As with the proposed project, impacts of the Off-Site Alternative related to hydrology and water quality would be mitigable to a less-than-significant level.

Water Supply

Impacts under this alternative related to water supply would be substantially the same in character as those described for the proposed project in EIR Section III.J, Water Supply, but water demand would be proportionally reduced commensurate with a smaller anticipated population under this alternative.

Historical Resources

Unlike the proposed project site, the alternative site includes a designated historical resource, Las Palmas Avenue, which runs through the alternative site. Las Palmas Avenue is identified in Patterson's General Plan as a historical resource. This three-mile parkway is lined with palms that survive from founder Thomas Patterson's original plantings. It is assumed that any development of the alternative site would retain, restore and maintain the palms and incorporate them into the new development. As such, development of the alternative site would not result in a significant impact on this identified historical resource.

Like the proposed project site, the alternative site is located on outskirts of the west side of town, and has been in irrigated agricultural production since the founding of the Patterson Colony in 1909. Also like the proposed project site, Laterals 3 and 4 run through the alternative site. The background historic setting discussion in EIR Section K, Historical Resources, and in the Initial Study (Appendix A to this EIR) are equally applicable to the alternative site.

No study of potential historical resources on the alternative site is undertaken as part of this EIR. However, given its proximity to the project site on the western outskirts of town, similar historic agricultural use, and similar development patterns, it is assumed that impacts on potential historic resources would be similar to those described for the project site in the NOP/Initial Study (for historic architectural resources) and in this EIR Section K, Historical Resources (for archaeological resources).

Community Services

Impacts under this alternative related to community services would be substantially the same in character as those described for the proposed project in EIR Section III.L, Community Services, but demand for community services would be proportionally reduced commensurate with a smaller anticipated population under this alternative.

E. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project / No Action Alternative is considered the environmentally superior alternative because potential impacts associated with development of the site would be completely avoided. In cases like this where the No Project / No Action Alternative is the environmentally superior alternative, CEQA requires that the secondmost environmentally superior alternative be identified.

Comparison of the environmental impacts associated with each alternative, as described above, indicates that Alternative C, the Decreased Project Site Alternative, is the environmentally superior alternative after the No Project / No Action Alternative. This alternative would generally result in decreased impacts from those found to be significant and unavoidable under the proposed project: agricultural resources, and transportation and circulation. This alternative would also result in decreased impacts from those found to be less than significant, or mitigable to a less-than-significant level, under the proposed project in this EIR: land use, visual resources, hazards, biological resources, hydrology and water quality, and historical resources.

On balance, Alternative B: the Existing General Plan Alternative, would be considered the least sound option from an environmental standpoint. It would provide 600 fewer housing units than the proposed project, while consuming the same amount of undeveloped agricultural land, and would require a largely similar investment in infrastructure to serve the area. Unmet demand for housing units in the Patterson area left by this alternative could result in conversion and development of additional agricultural acreage elsewhere on the outskirts of the City.

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