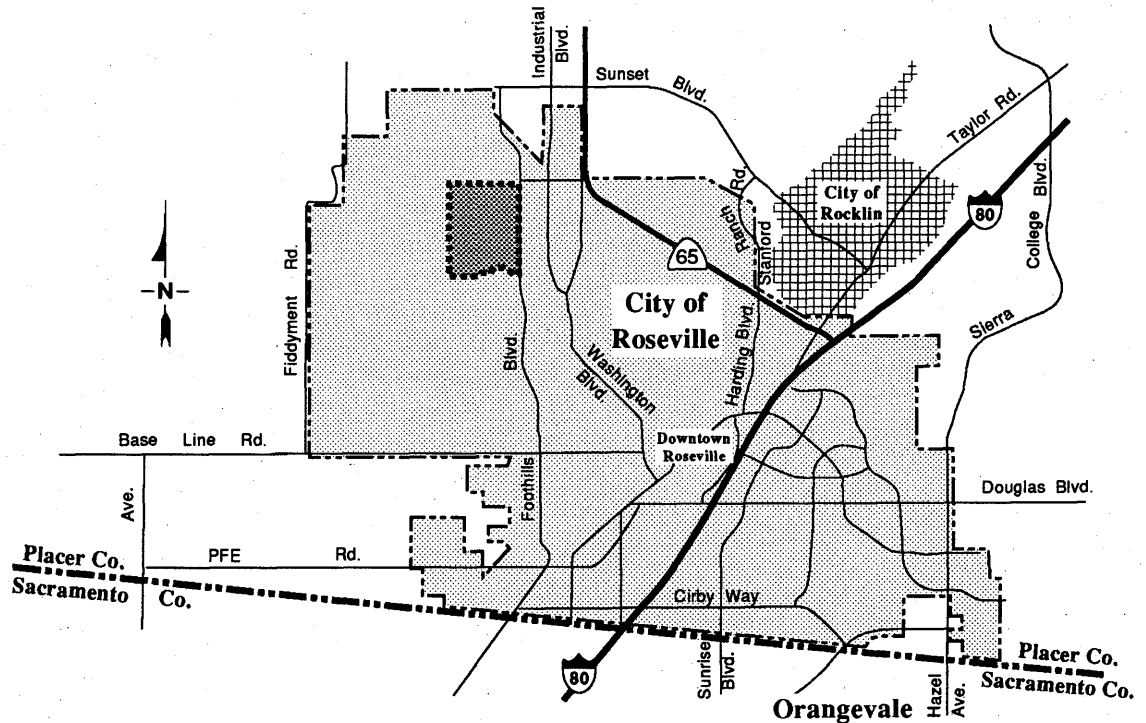


Hewlett-Packard Master Plan

Draft Environmental Impact Report



PREPARED FOR THE

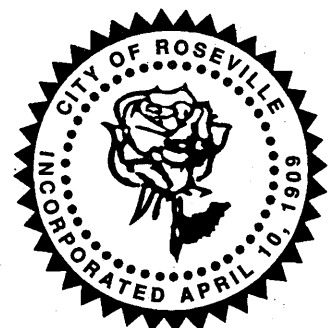
**City of Roseville
Planning Department**

PREPARED BY

EIP Associates



February 1996



NOTICE OF COMPLETION

February 28, 1996

DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

HEWLETT PACKARD MASTER PLAN

SCH# 95112022

The Roseville Planning Department has released a Draft Environmental Impact Report (DEIR) for the following project:

Project Name: Hewlett Packard Master Plan

Name of Proponent: Hewlett Packard Co.
8000 Foothills Boulevard
Roseville, CA 95747-5608

Project Location: 8000 Foothills Boulevard
Roseville, Placer County, CA
Assessor's Parcel Number: 017-230-025.

**Summary Description
of Project:**

Hewlett Packard Co. proposes a master plan for the comprehensive planning of the remainder of Hewlett Packard's existing site in Roseville. Hewlett Packard's existing facilities occupy approximately 200 acres of the 500 acre site. The applicant is requesting approval of a master plan that will provide an increase in current entitlements for building square footage and employees. Approval of the request would allow the ultimate development of 4.25 million square feet of buildings and employ approximately 13, 800 people. Buildout of the proposed project is expected to occur incrementally over a 25+ year timeframe.

- Lead Agency:** City of Roseville
Contact: Chris Burrows, Senior Planner or Dan
Dameron, Principal Planner
316 Vernon St., #104
Roseville, CA 95678
- Document Availability:** Copies of the Draft EIR are available for review at the Roseville Planning Department, at the above address. In addition, copies of the Draft EIR may be reviewed at the Roseville City Library (225 Taylor Street, Roseville, CA) and Maidu Branch Library (1530 Maidu Drive, Roseville, CA).
- Public Review Period:** The Draft EIR will be available for public comment for forty five (45) days, beginning February 28, 1996 and ending April 12, 1996. In addition, the Planning Commission will hold a public hearing on the Draft EIR on April 11, 1996 at 7:00 p.m. in the City Council Chambers, 311 Vernon Street, Roseville, CA. All written comments and oral testimony received during the review period will be addressed in the Final EIR. **All comments must be submitted in writing to the Roseville Planning Department no later than 5:00 p.m. April 12, 1996.**

For further information regarding the Draft EIR, please contact the Roseville Planning Department at (916) 774-5276.

HEWLETT-PACKARD MASTER PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT

Prepared for the:

City of Roseville
Planning Department
Roseville, California

Prepared by:

EIP Associates
Sacramento, California

February 1996

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1. INTRODUCTION

1.0 INTRODUCTION

1.1 PURPOSE OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

Pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended), this Draft Environmental Impact Report (DEIR) has been produced for the City of Roseville, which is acting as lead agency for the preparation of environmental documentation for the Hewlett-Packard Master Plan. The Proposed Project is a master plan for the comprehensive planning and development of the remainder of Hewlett-Packard's existing site in Roseville. Necessary approvals for implementation of the Proposed Project include the following:

1. A General Plan Amendment to change land use from Light Industrial to General Commercial on 28.5 acres and Open Space on 45.9 acres,
2. A General Plan Amendment to change the City's existing level of service (LOS) policy,
3. Rezone of 74.4 acres from Light Industrial to General Commercial (28.5 acres) and Open Space (45.9 acres),
4. Master Plan adoption,
5. Development Agreement, and
6. United States Army Corps of Engineers Section 404 permit, California Regional Water Quality Control Board Certification, Department of Fish and Game Streambed Alteration Agreements, and State Water Resources Control Board Stormwater Discharge Permit.

The Hewlett-Packard Master Plan will herein be referred to as the Proposed Project. In addition, geographic boundaries of the Proposed Project area will be referred to as the project area or project site throughout this document, except as otherwise noted. A brief description of the Proposed Project as it relates to the scope of the DEIR is presented below. A more detailed project description is provided in Chapter 3.

1.2 SCOPE OF THE EIR

The project area is located in the North Roseville Industrial area adjacent to Foothills Boulevard and the future extension of Blue Oaks Boulevard to the north. It consists of approximately 500.2 acres of land west of Foothills Boulevard. All of the land in the project area is within the

incorporated limits of the City of Roseville in Placer County. Existing Hewlett-Packard facilities occupy approximately the southeastern 200 acres of the project area. The remaining 300 acres are undeveloped annual grasslands used primarily for seasonal grazing activities.

The Hewlett-Packard Master Plan proposes to provide comprehensive planning and orderly development of the project area, particularly the 300 acres that are undeveloped at present. The Proposed Project would include light industrial, general commercial, and open space uses. The Plan proposes designating 28.5 acres for general commercial uses and 45.9 acres for open space. The dominant land use would remain light industrial.

The master plan concept developed for the Proposed Project served as the basis for the environmental analysis presented in the DEIR.

This DEIR evaluates the existing environmental resources within the project area, analyzes potential impacts on those resources due to the Proposed Project, and identifies mitigation measures to reduce significant impacts. These effects concern several subject areas, including land use; population, employment and housing; soils, geology and seismicity; hydrology and water quality; biological resources; cultural resources; aesthetics and visual resources; hazardous materials; transportation and circulation; air quality; noise; and public services and utilities. The evaluation of these effects is presented on a resource-by-resource basis in Sections 4.1 through 4.12. Each chapter is divided into four sections: Environmental Setting, Regulatory Setting, Impacts, and Mitigation Measures. In addition to these discussions in each Section, those impacts that cannot be mitigated to a level that is less than significant (and are therefore considered significant unavoidable adverse impacts) are discussed separately in Chapter 6.4.

Actions that are related to the Proposed Project but are not part of development of the project area itself are discussed in Chapter 5, Other Project-Related Components. This includes the extension of Woodcreek Oaks Boulevard from south of the South Branch of Pleasant Grove Creek to Blue Oaks Boulevard. In addition, the Proposed Project includes an amendment to the General Plan traffic level of service (LOS) "C" policy. The City's current General Plan policies focus on maintaining level of service (LOS) C at all intersections. Provisions are included to permit the City Council, on a case-by-case basis and in accordance with defined criteria, to allow individual intersections within the infill area to go to LOS D. The proposed General Plan Amendment would modify this policy to apply Citywide including the specific plan areas.

Other CEQA-related issues, such as cumulative and growth-inducing impacts, resulting from implementation of the Proposed Project are analyzed in Chapter 6. Four alternatives, including a No Project alternative, are analyzed in this DEIR. These alternatives, and others considered and eliminated before detailed analysis, are discussed in Chapter 7.0.

The Master Plan also provides for administrative, but still discretionary review and approval of specific projects developed within the Light Industrial-Special Area (M1-SA) Zone on the project site. If a project is proposed for the project site, and it is consistent with the land use designation, zoning, and Master Plan, the project could be approved administratively and not

require environmental analysis beyond that contained in this EIR. All projects will be subject to applicable permits, such as those listed under Section 3.5 of the Project Description and will be required to implement applicable mitigation measures contained in this EIR.

1.3 CEQA PROCESS

As provided in the CEQA Guidelines, public agencies are charged with the duty to avoid or minimize environmental damage where feasible. In discharging this duty, the public agency has an obligation to balance a variety of public objectives, including economic, environmental and social issues. The EIR is basically an informational document that informs public agency decision makers and the general public of the significant environmental effects of a proposed project. An EIR must identify possible means to minimize the significant effects and describe reasonable alternatives to the project. The lead agency, in this case the City of Roseville, is required to consider the information in the EIR along with any other available information in making its decision. The basic informational requirements for an EIR include discussions of the environmental setting, environmental impact, mitigation measures, alternatives, significant irreversible changes, growth-inducing impacts and cumulative impacts.

A Notice of Preparation (NOP) for this DEIR was issued on November 7, 1995. Copies of the NOP and comment letters received are included in Appendix A. This DEIR is available for public review at the City of Roseville Planning Department, 316 Vernon Street #104; at the Roseville City Clerk's office, 311 Vernon Street; at the City of Roseville Main Library, 225 Taylor Street; and at the Maidu Branch Library, 1530 Maidu Drive, all in Roseville. The distribution list for this DEIR is contained in Appendix B.

A public hearing regarding the information contained in this DEIR will be held during the 45-day public comment period. This DEIR was publicly circulated on February 28, 1996 for a 45-day period of public review and comments. This period ends April 12, 1996.

Comments received during the comment period and at the public hearing will be addressed in the Final Environmental Impact Report (FEIR). The FEIR will be reviewed by the Roseville City Council for certification in accordance with CEQA and City Guidelines. Written findings for significant effects, and if applicable, a Statement of Overriding Considerations, will subsequently be prepared as part of the project approval process.

1.4 LEVELS OF SIGNIFICANCE

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance" (CEQA Guidelines, 1992). Definitions of significance vary

with the physical conditions affected, and the setting in which the change occurs. The CEQA Guidelines set forth physical impacts that trigger the requirement to make "mandatory findings of significance" (CEQA Guidelines, 1992).

For all environmental issues, specific standards of significance are identified. Where explicit quantification of significance is identified, such as a violation of an ambient air quality standard, this quantity is used to assess the level of significance of a particular impact in this DEIR. Where the "substantial" effect of an impact is not identified in the CEQA Guidelines, criteria for evaluating the significance of potential impacts were identified and transmitted to the City of Roseville for review. Where reasonable, quantification of levels of significance was identified. For instance, increases in the rate of discharge from the site resulting in an increase in water surface elevation downstream of the site would be considered a significant impact.

For less easily quantifiable impacts, events or occurrences that would be regarded as significant or potentially significant were identified. For example, growth-inducing impacts would be identified as significant if the project results in a level, rate, or character of growth that (among other criteria) exceeds capacity of existing infrastructure and services to adequately support it. A criterion for determining the level of significance of the loss of a particular habitat would be that habitat's importance to rare or endangered species and/or whether the habitat itself has become depleted within the region.

This assessment of levels of significance promotes consistent evaluation of impacts for all alternatives considered.

1.5 HOW TO USE THIS REPORT

This report includes seven principal parts, Summary, Project Description, Environmental Analysis (Setting, Impacts, and Mitigation Measures), Other Project-Related Components, Other CEQA Considerations, Project Alternatives, and Appendices.

The **Summary** presents an overview of the results and conclusions of the environmental evaluation. This section identifies project impacts and available mitigation measures for use by the City in reviewing the Proposed Project and establishing conditions under which the Proposed Project may be developed.

The **Project Description** includes a discussion of the location of the project area and proposed plans for development of the project area.

The **Environmental Analysis** includes a topic-by-topic analysis of impacts that would or could result from implementation of the Proposed Project. The results of field visits, data collection and review and agency contacts are presented in the text.

Other Project-Related Components includes a discussion of project-related actions that would not be part of development in the project area, but are related to the Proposed Project.

Other CEQA Considerations includes a discussion of issues required by CEQA: unavoidable adverse impacts, irreversible environmental changes, growth inducement, and cumulative impacts.

The **Project Alternatives** section includes an assessment of alternative methods for accomplishing the basic objectives of the Proposed Project. This assessment, required under CEQA, must provide adequate information for decision makers to make a reasonable choice between alternatives based on the environmental aspects of the Proposed Project and other alternatives.

The **Appendices** contain a number of reference items providing support and documentation of the analysis performed for this report.

2. SUMMARY OF ENVIRONMENTAL EFFECTS

2.0 SUMMARY OF ENVIRONMENTAL EFFECTS

2.1 OVERVIEW OF THE PROPOSED PROJECT

This EIR evaluates the environmental impacts of the proposed Hewlett-Packard Master Plan in the City of Roseville. The project includes 425.8 acres of light industrial uses, 28.5 acres of general commercial uses, and 45.9 acres of open space. A detailed description is contained in Chapter 3.

The Proposed Project also includes an amendment to the General Plan regarding the City's level of service (LOS) "C" traffic standard. The City's current General Plan policies focus on maintaining LOS "C" at all intersections. Provisions are included to permit the City Council, on a case-by-case basis and in accordance with defined criteria, to allow individual intersections within the infill area to go to LOS "D". The Proposed General Plan Amendment would expand this policy to apply citywide, including the specific plan areas. The effects of this policy change are discussed in Chapter 5, Other Project-Related Components.

The Master Plan provides for administrative review and approval of specific projects developed within the Light Industrial-Special Area (M1-SA) Zone on the project site. If a project is proposed for the project site, and it is consistent with the land use designation, zoning, and Master Plan, the project may be reviewed and approved administratively with no additional environmental analysis beyond that contained in this EIR. All projects will be subject to applicable permits, such as those listed under Section 3.5 of the Project Description, and will be required to implement applicable mitigation measures contained in this EIR.

This summary provides an overview of the analysis contained in Chapter 4, Environmental Setting, Impacts and Mitigation Measures. This summary also includes discussions of: (a) effects found to be less than significant; (b) potential areas of controversy; (c) significant impacts; (d) mitigation measures to avoid or reduce identified significant impacts; (e) unavoidable significant impacts; and (f) alternatives to the project.

2.2 EFFECTS FOUND TO BE NOT SIGNIFICANT

The City of Roseville prepared an Initial Study of Environmental Impacts for the Proposed Project on November 7, 1995. A full copy of the Initial Study and NOP can be found in Appendix A.

As shown in Table 2-1, a number of project impacts were found to be less than significant, requiring no mitigation. These include conversion of existing land uses and agricultural land, conflicts with other uses, increased employment and demand for housing, changes in the jobs/housing balance, construction in an area subject to seismic activity, loss of mineral resources, topographic changes due

to grading, obstruction of flows in the 100-year floodplain, interference with groundwater recharge, decrease in water quality associated with increased urbanization, loss of grassland, visual incompatibility between light industrial uses and surrounding development, increased risk of exposure to hazardous materials, increased traffic at roadways outside the City, increased demand for transportation on related bicycle trips, exposure of residents to odor, exposure of residents to emissions from stationary sources, exposure to toxic air contaminants, increased construction, traffic and operations noise, and increased demand for public services and utilities.

In the course of drafting the EIR for this project, it was determined that numerous other identified impacts could be reduced to a less-than-significant level with implementation of the proposed mitigation measures which are described herein.

2.3 ENVIRONMENTAL IMPACTS AND MITIGATION

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

This EIR discusses mitigation measures that could be implemented by the City and/or the project applicant to reduce potential adverse impacts to a level that is considered less than significant. Such mitigation measures are noted in this report and are found in the following sections: Geology, Soils and Seismicity; Hydrology and Water Quality; Biological Resources; Cultural Resources; Visual Resources; Transportation; Air Quality; and other Project Components. The applicant has worked with the City to anticipate and mitigate potential adverse environmental effects of the Proposed Project; these are identified in the sections which discuss each resource area. If an impact is determined to be significant or potentially significant, and additional available mitigation measures are identified as appropriate. Generally, these measures include design requirements, management practices, development constraints, and specific points of coordination between the project applicant and the City. These mitigation measures are also summarized in Table 2-1. Residual significance indicates the remaining level of significance after implementation of the mitigation measures. An impact that remains significant after mitigation is considered an unavoidable adverse impact of the Proposed Project. The mitigation measures presented in the EIR will form the basis of the Mitigation Monitoring Program.

Project-specific impacts that would be significant and unavoidable occur in the following areas: Biology, Visual Resources, and Air Quality.

2.4 ALTERNATIVES TO THE PROPOSED PROJECT

The alternatives to the proposed Hewlett-Packard Master Plan analyzed in this Draft EIR are:

- **Alternative 1, No Project**, which assumes that the existing designations for the project area are developed at buildout. This is a "No-Action" alternative. A "No Development" alternative would maintain existing conditions, which are described in the sections of Chapter 4.
- **Alternative 2, Reduced Development**, which assumes that the existing light industrial designations are retained, but that only 3 million square feet, total, is developed.
- **Alternative 3, Circulation Modification**, which has the same amount of development as the Proposed Project, but assumes that Roseville Parkway is extended to Woodcreek Oaks Boulevard as a public roadway.
- **Alternative 4, Offsite Development**, which assumes that the development levels would be the same as the project, but that they would be located elsewhere in South Placer County.

2.5 POTENTIAL AREAS OF CONTROVERSY

The major areas of potential controversy identified through the environmental evaluation process stem from the following:

- The Proposed Project would increase demand on numerous City services. Implementation of the Proposed Project would be dependent upon acquisition of adequate water supply, and provision of necessary transportation and other public services infrastructure.
- The Proposed Project would result in the loss of annual grasslands and vernal pools, which provide habitat for special-status plant and animal species.
- The placement of light industrial facilities in proximity to residential uses could result in conflicts and exposure of residents to noise and hazardous materials.

SUMMARY TABLE

Table 2-1, Summary of Environmental Impacts, has been organized to correspond with environmental issues discussed in Chapter 4. The summary table is arranged in six columns:

- 1) Environmental impacts,
- 2) Applicable City policies and regulations,
- 3) Actions proposed by the Applicant,
- 4) Level of significance prior to mitigation,
- 5) Recommended additional mitigation measures, and
- 6) The level of significance after implementation of mitigation measures.

A series of mitigation measures are noted where more than one mitigation measure may be required to reduce the impact to a less-than-significant level.

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES					
Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.1 LAND USE, APPLICABLE PLANS AND POLICIES					
4.1-1: Land use conversion.	None	None	Less than significant	None required	Less than significant
4.1-2: Agricultural land conversion.	None	None	Less than significant	None required	Less than significant
4.1-3: Conflict with adjacent uses.	General Plan Policies LA-1 and LA-6	None	Less than significant	None required	Less than significant
4.1-4: Conflict between internal land uses.	General Plan Policy LA-1	None	Less than significant	None required	Less than significant
4.2 POPULATION, EMPLOYMENT, AND HOUSING					
4.2-1: Increase in employment within the City of Roseville.	None	None	Less than significant	None required	Less than significant
4.2-2: Increase in demand on the City's supply of housing	None	None	Less than Significant	None required	Less than significant
4.2-3: Changes in the jobs/housing balance.	None	None	Less than significant	None required	Less than significant
4.3 SOILS, GEOLOGY AND SEISMICITY					
4.3-1: Construction of structures in an area of potential seismic activity.	General Plan Policies SA-1 through SA-4	None	Less than significant	None required	Less than significant
4.3-2: Potential failure of structures and infrastructure facilities due to construction on soils which exhibit slow permeability, low strength and high shrink-swell potential.	General Plan Policies SA-2 and SA-3	None	Significant	Mitigation Measure 4.3-2 (Site specific geotechnical evaluations to assess development on soils characterized by slow permeability, low strength and high shrink-swell potential)	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.3-3: Loss of mineral resources.	None	None	Less than significant	None required	Less than significant
4.3-4: Topographic changes due to grading activities.	None	None	Less than significant	None required	Less than significant
4.4 HYDROLOGY AND WATER QUALITY					
4.4-1: Flood flows in the designated 100-year floodplain could be obstructed, exacerbating existing localized flooding.	General Plan Policies SB-1, SB-2, SB-4, SB-5	Area in the 100-year floodplain has been designated as open space	Less than significant	None required	Less than significant
4.4-2: Increased impervious surface area would increase the volume and rate of storm water runoff, exacerbating existing on- and off-site flooding.	General Plan Policies SB-1, SB-2, SB-5, SB-6, and SB-8	Construct detention basins within the project area	Significant	Mitigation Measure 4.4-2(a) (Identify adequate detention facility locations) Mitigation Measure 4.4-2(b) (Contribute fair share fees to regional flood control facilities)	Less than significant
4.4-3: Interference with groundwater recharge potential and emergency well could reduce available groundwater supply.	General Plan Policies OC-5, OC-6, and SB-1, SB-2, SB-4 and SB-5	None	Less than significant	None required	Less than significant
4.4-4: Decrease in water quality due to increased erosion and sedimentation associated with construction activities.	General Plan Policy OC-2	None	Significant	Mitigation Measure 4.4-4 (Implement erosion control plan)	Less than significant
4.4-5: Decrease in water quality associated with increased urbanization.	General Plan Policies OC-1 and OC-3	None	Less than significant	None required	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.5 BIOLOGICAL RESOURCES					
4.5-1: Loss of approximately 275 acres of grassland habitat.	None	None	Less than significant	None required	Less than significant
4.5-2: Loss of oak trees of greater than 6" dbh.	General Plan Policies LG-9, OB-1, Roseville Tree Preservation Ordinance	Designate oak woodland/riparian corridors to be preserved as open space	Less than significant	None required	Less than significant
4.5-3: Loss of 3.47 acres of vernal pools, seasonal wetlands and other jurisdictional wetlands.	General Plan Policies OB-7 and OB-11	Preserve and construct vernal pools	Potentially significant	None available	Potentially significant
4.5-4: Loss of special-status plant species occurring in vernal pools.	General Plan Policies OB-7 and OB-11	Comply with Section 404 permits	Significant	Mitigation Measure 4.5-4 (Vernal pool preservation, translocation, and compensation)	Less than significant
4.5-5: Disturbance to wildlife and wildlife habitat during construction.	None	Designate oak woodland/riparian corridors to be preserved as open space	Significant	Mitigation Measure 4.5-5 (Develop and implement construction protocols)	Less than significant
4.5-6: Potential loss of federal threatened vernal pool fairy shrimp.	None	None	Potentially significant	Mitigation Measure 4.5-6 (Implement Mitigation Measure 4.5-4)	Potentially significant
4.5-7 Potential loss of nesting habitat of legally-protected raptors.	None	None	Potentially significant	Mitigation Measure 4.5-7 (Conduct pre-construction survey and restrictions)	Less than significant
4.5-8 Loss of or damage to approximately 0.9 acres of Wetland Preserve and 2 or 3 oak trees due to sanitary sewer construction.	Roseville Tree Preservation Ordinance	None	Significant	Mitigation Measure 4.5-8 (Obtain and implement 404 permit and Section 1603 permit and Streambed Alteration Agreement)	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.6 CULTURAL RESOURCES					
4.6-1: Damage or destroy unidentified cultural resources.	General Plan Policies OD-1, OD-2, OD-3	None	Significant	Mitigation Measure 4.6-1 (Cease work and consult a qualified archaeologist)	Less than significant
4.6-2: Damage or destroy previously identified prehistoric sites.	General Plan Policies OD-1, OD-3	None	Significant	Mitigation Measure 4.6-2(a) (Determine if cultural deposit exists) Mitigation Measure 4.6-2(b) (Preserve or record sites, if found, consistent with CEQA Guidelines)	Less than significant
4.6-3: Damage or destroy known historic resources	General Plan Policies OD-1, OD-3	None	Significant	Mitigation Measure 4.6-3 (Determine historical value, then mitigate as appropriate)	Less than significant
4.7 AESTHETICS AND VISUAL RESOURCES					
4.7-1: Conversion of undeveloped landscape character to developed character.	None	Designate 45.9 acres of open space	Significant	None available	Significant
4.7-2: Visual incompatibility between light industrial uses and surrounding development.	North Roseville Area Design Guidelines, General Plan Policies LG-1, LG-7	None	Less than significant	None required	Less than significant
4.7-3: Introduction of artificial light and glare into an undisturbed area.	North Roseville Area Design Guidelines	None	Significant	Mitigation Measure 4.7-3 (Use building orientation and materials that minimize glare)	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.8 HAZARDOUS MATERIALS AND PUBLIC SAFETY					
4.8-1: Increased potential for accidental release or spill from new commercial and industrial uses.	General Plan Policies AA-11, SE-1, and SE-5	None	Less than significant	None required	Less than significant
4.8-2: Increased risk of accidental releases or spills associated with increased transport of hazardous materials from the project area.	General Plan Policies SE-3 and SE-4	None	Less than significant	None required	Less than significant
4.8-3: Increased use of hazardous materials within the project area could require additional emergency response capabilities.	General Plan Policies AA-11, SA-4, SD-1 through SD-9 and SE-1 through SE-5	None	Less than significant	None required	Less than significant
4.8-4: Existing or unknown hazards related to past uses within or adjacent to the project area.	None	None	Less than significant	None required	Less than significant
4.8-5: Potential effects of electromagnetic fields (EMFs).	General Plan Policies SG-1 and SG-2	None	Less than significant	None required	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES					
Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.9 TRANSPORTATION AND CIRCULATION					
4.9-1: Level of Service "D" at the intersection of Blue Oaks Boulevard and Washington Boulevard.	General Plan Policies CB-1, CB-2, and CD-1	None	Significant	Mitigation Measure 4.9-1 (Add a second eastbound through lane on Blue Oaks Boulevard).	Less than significant
4.9-2: Need for additional lanes on Foothills Boulevard.	General Plan Policies CB-1, CB-2 and CD-1	None	Significant	Mitigation Measure 4.9-2 (Construct additional lanes on Foothills Boulevard)	Less than significant
4.9-3: Need for additional lanes on Blue Oaks Boulevard.	General Plan Policies CB-1, CB-2 and CD-1	None	Significant	Mitigation Measure 4.9-3 (Construct additional lanes on Blue Oaks Boulevard)	Less than significant
4.9-4: Level of Service "D" at the intersection of Foothills Boulevard and Pleasant Grove Boulevard.	General Plan Policies CB-1, CB-2 and CD-1	None	Significant	Mitigation Measure 4.9-4(a) (Grade separation) or 4.9-4(b) (Amend Level of Service Policy)	Less than significant
4.9-5: Level of Service "D" at the intersection of Roseville Parkway and Taylor Road.	General Plan Policies CB-1, CB-2 and CD-1	None	Less than significant	None required	Less than significant
4.9-6: Increased traffic on roadways outside of the City of Roseville.	None	None	Less than significant	None required	Less than significant
4.9-7: Increased demand for transit service (both bus and light rail).	General Plan Policies CC-1 through CC-5	None	Significant	Mitigation Measure 4.9-7 (Update Long-Range Transit Master Plan)	Less than significant
4.9-8 Increased demand for transportation-related bicycle trips.	General Plan Policies CE-1 through CE-3	None	Less than significant	None required	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES						
Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance	
4.10 AIR QUALITY						
4.10-1: Short-term emissions of PM ₁₀ .	None	None	Short-term significant	Implement Mitigation Measure 4.10-1 (Provide dust controls)	Less than significant	
4.10-2: Short-term emissions of NO _x , ROG, SO ₂ and CO.	None	None	Short-term significant	Mitigation Measure 4.10-2(a) (Maintain construction equipment and vehicles) Mitigation Measure 4.10-2(b) (Develop and implement a Construction Employee Trip Reduction Plan)	Short-term potentially significant	
4.10-3: Increases of CO concentrations at intersections	Transportation System Management Ordinance	None	Significant	Mitigation Measure 4.10-3 (Provide regional emissions controls)	Significant	
4.10-4 Increased air pollution in both the Hewlett Packard Master Plan Area and Sacramento Valley Air Basin.	None	None	Significant	Mitigation Measure 4.10-4 (Implement Mitigation Measure 4.10-3)	Significant	
4.10-5: Exposure of existing residents to minor amounts of odors.	None	None	Less than significant	None required	Less than significant	
4.10-6: Inconsistency with the Placer County Air Quality Attainment Plan.	None	None	Significant	Mitigation Measure 4.10-6 (Implement Mitigation Measures 4.10-1, 4.10-2 and 4.10-3)	Significant	
4.10-7: Exposure of residents to criteria air pollutants generated by stationary sources.	General Plan Policy AA-8	None	Less than significant	None required	Less than significant	

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.10-8: Exposure of residential areas to toxic air contaminants generated by stationary sources.	General Plan Policy AA-8	None	Less than significant	None required	Less than significant
4.10-9: Increases in toxic air contaminants during construction.	None	None	Less than significant	None required	Less than significant
4.11 NOISE					
4.11-1: Temporary increases in noise levels due to earthmoving and general construction activities.	General Plan Noise Level Performance Standards, City Noise Ordinance	None	Less than significant	None required	Less than significant
4.11-2: Traffic noise would increase along roadways near residential areas.	General Plan Noise Level Performance Standards	None	Less than significant	None required	Less than significant
4.11-3: Noise generated by non-transportation sources.	Noise Element Policy 7 and General Plan Noise Level Performance Standards	None	Less than significant	None required	Less than significant
4.11-4: Train could be heard within the project area.	None	None	Less than significant	None required	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES					
Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.12 PUBLIC SERVICES AND UTILITIES					
4.12-1: Increased demand for domestic water.	General Plan Policies FF-1, FF-2, and FF-8	None	Less than significant	None required	Less than significant
4.12-2: Decreased water supply during drought periods.	General Plan Policies FF-1, FF-2, FF-8, FI-1, FI-3, FI-6, FI-5, FI-7 and FI-6	None	Less than significant	None required	Less than significant
4.12-3: Increased demand for domestic water treatment.	General Plan Policies FF-2, FF-3	None	Less than significant	None required	Less than significant
4.12-4: Increased demand on water distribution system.	None	None	Less than significant	None required	Less than significant
4.12-5: Increased demand on wastewater collection system.	General Plan Policies FG-1, FG-6, and FG-9	None	Less than significant	None required	Less than significant
4.12-6: Increased demand on wastewater treatment system.	General Plan Policies FG-1, FG-8, FG-9, LH-7	None	Less than significant	None required	Less than significant
4.12-7: Increased demand for police protection services.	Building Security Ordinance	None	Less than significant	None required	Less than significant
4.12-8: Potential failure to meet RFD response standards.	None	None	Less than significant	None required	Less than significant
4.12-9: Increased demand for solid waste hauling.	None	None	Less than significant	None required	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES					
Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
4.12-10: Increased demand for solid waste disposal.	None	None	Less than significant	None required	Less than significant
4.12-11: Increased demand for electrical supply.	None	None	Less than significant	None required	Less than significant
4.12-12: Increased demand for natural gas.	None	None	Less than significant	None required	Less than significant
4.12-13: Increased demand for telephone services.	None	None	Less than significant	None required	Less than significant
4.12-14: Increased demand for school services.	None	None	Less than significant	None required	Less than significant
4.12-15: Increased demand for library services.	None	None	Less than significant	None required	Less than significant
5. OTHER PROJECT-RELATED COMPONENTS					
5-1 Loss of open space	None	None	Less than significant	None required	Less than significant
5-2 Construction on unstable soils	General Plan Policies SA-1 through SA-4	None	Significant	Mitigation Measure 5-2 (Implement Mitigation Measure 4.3-2)	Less than significant
5-3 Loss of mineral resources	None	None	Less than significant	None required	Less than significant
5-4 Obstruction of flood flows	General Plan Policies SB-1, SB-2, SB-4 and SB-5	None	Less than significant	None required	Less than significant
5-5 Increased stormwater runoff/water quality degradation	General Plan Policies OC-1, OC-2 and OC-3	None	Significant	Mitigation Measure 5-6 (Implement Mitigation Measures 4.4-4(a) and (b) and 4.4-5(a) and (b))	Less than significant

TABLE 2-1 - SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Applicable City Policies and Regulations	Action Proposed by Applicant	Level of Significance	Mitigations Measures	Residual Significance
5-6 Loss of biological resources	General Plan Policies LG-9, OB-1, OB-7, OB-11, Roseville Tree Preservation Ordinance	Comply with Section 404 and Section 1603 permits	Significant	Mitigation Measure 7 (Implement Mitigation Measures 4.5-4, 4.5-5 and 4.5-7)	Potentially significant
5-7 Air quality degradation due to construction	None	None	Significant	Mitigation Measure 5-7 (Implement Mitigation Measures 4.10-1 and 4.10-2)	Short-term significant
5-8 Increased noise due to construction	General Plan Noise Level Performance Standards, City Noise Ordinance	None	Less than significant	None required	Less than significant

3. PROJECT DESCRIPTION

3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The Proposed Project is located within the North Roseville Industrial Area in the northwest portion of the City of Roseville, in Placer County, California (see Figure 3-1). The Hewlett-Packard Master Plan (project area) consists of approximately 500.2 acres located at 8000 Foothills Boulevard, at the southwest corner of Foothills Boulevard and Blue Oaks Boulevard.

The project area is generally situated six miles west of Interstate 80 (I-80). State Highway 65 (SR 65) provides access from the northwest and intersects I-80 in Roseville. The project area is approximately one mile west of the Blue Oaks Boulevard interchange on SR 65. (see Figure 3-2).

3.2 STUDY AREA CHARACTERISTICS

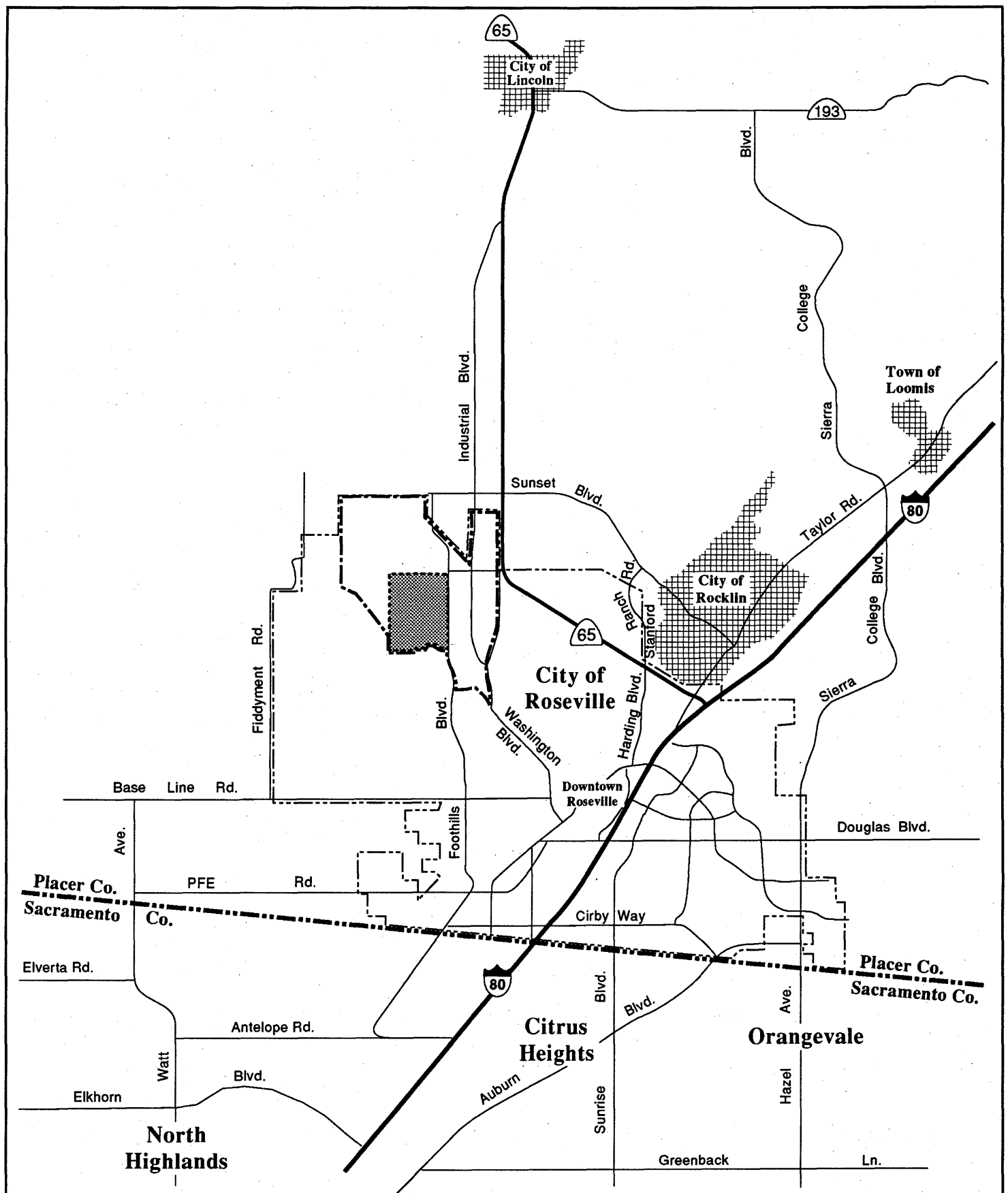
The project area lies in the northwestern portion of the City of Roseville, adjacent to the Northwest Specific Plan Area (see Figure 3-3). All of the land in the project area is currently within the incorporated limits of the City. The project area is within the North Roseville Industrial Area.

The land formation within the project area is generally composed of rolling topography with mild slopes, ranging from less than 10 percent up to 20 percent or more in the vicinity of the South Branch of Pleasant Grove Creek. The elevation of the project area is approximately 155 feet above mean sea level (msl).

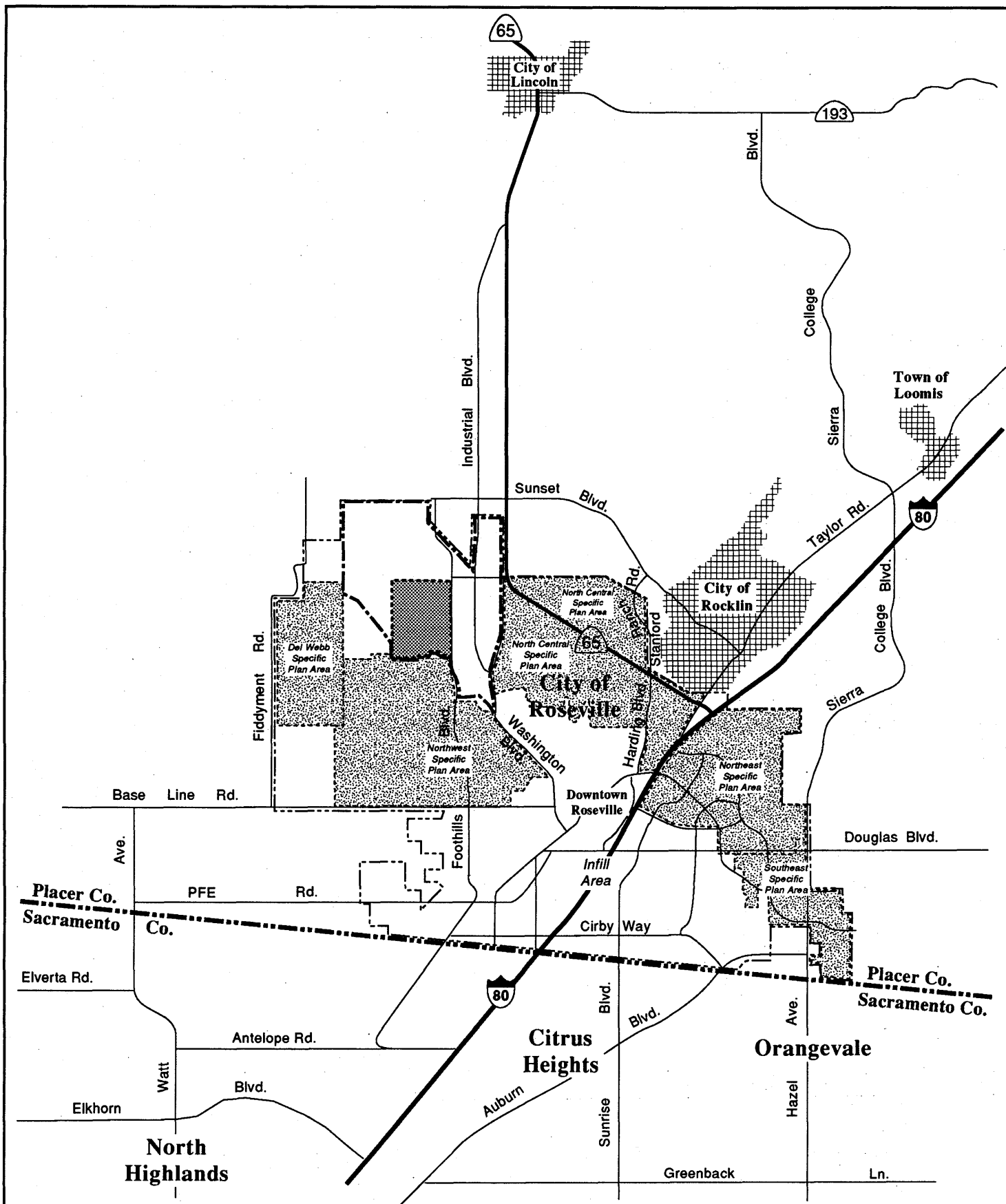
The project area land use and zoning designation is Light Industrial. Approximately 300-acres is undeveloped annual grasslands primarily used for seasonal grazing. The existing Hewlett-Packard facility occupies the remaining 200-acres. Extensive areas of oak woodlands occur along portions of the South Branch of Pleasant Grove Creek in the southwest corner of the project area.

Complete descriptions of the characteristics of the project area can be found in the Setting sections in Chapter 4 of this DEIR for the particular resource or subject area of interest.





Scale in Feet	<table border="0"> <tr> <td></td> <td>Hewlett-Packard Master Plan Area</td> <td></td> <td>Roseville City Limits</td> </tr> <tr> <td></td> <td>Existing and Approved Roads</td> <td></td> <td>North Roseville Industrial Area</td> </tr> </table> SOURCE: EIP Associates, January 1996.		Hewlett-Packard Master Plan Area		Roseville City Limits		Existing and Approved Roads		North Roseville Industrial Area	Figure 3-2 Regional Location Map 95190 Regional-Location
	Hewlett-Packard Master Plan Area		Roseville City Limits							
	Existing and Approved Roads		North Roseville Industrial Area							



0 2,000 4,000 Scale in Feet	----- Roseville City Limits — Existing and Approved Roads ----- North Roseville Industrial Area	Hewlett-Packard Master Plan Area Approved Specific Plan Areas	Figure 3-3 Surrounding Land Uses	95190 Regional Location
	SOURCE: City of Roseville, <i>City of Roseville Comprehensive Land Use Element Update EIR</i>, February 1995; EIP Associates, February 1996.			

3.3 PROJECT BACKGROUND AND HISTORY

In early 1979, Hewlett-Packard made the decision to pursue an option to purchase the 500-acre site located in Roseville to develop a computer manufacturing and distribution facility. The non-irrigated site was used for seasonal grazing prior to development. The first phase of development, approved in 1979 (UP 79-04), was contained within the 200 acres immediately adjacent to Foothills Boulevard. Phase I consisted of 1.4 million square feet in the southeast corner of the 500-acre site. Over the next seven years, eight buildings, each 172,000 square feet, two cafeterias, and two 35,000 square foot warehouses were constructed. In 1987 permits UP 87-39 and SUP 87-40 were approved adding an additional 1 million square feet of office, warehouse and cafeteria space in the northeast quadrant of the site, along with an additional 56,000 square feet of temporary office space in the southeast quadrant. From 1988 through 1994 an additional 210,000 square feet of temporary office space was approved, and by April 1995 approximately 1.3 million square feet of permanent office space was constructed on the site. A total of 2.4 million square feet were approved under UP 79-04 and UP 87-39.

Currently, the site contains 1.33 million square feet in ten manufacturing, distribution, support maintenance, and administrative office buildings on 165 acres. Approximately 4,100 full and part-time workers are currently employed at the facility.¹

3.4 PROJECT OBJECTIVES

The Proposed Project is intended to provide for the comprehensive master planning and orderly development of the remaining lands on the Hewlett-Packard site. Development of the Proposed Project would be consistent with the policies of the City.

The project applicant has indicated that the specific objectives for the Proposed Project are to:

- (1) Provide future facilities to accommodate the intended potential dynamic growth at the Roseville Hewlett-Packard campus over the next two decades;
- (2) Enable Hewlett-Packard to continue locating its buildings and operations on a single consolidated campus for the reasons of providing operational and logistical efficiency, as well as security; and
- (3) Satisfy Hewlett-Packard's need to maintain facility siting and sizing flexibility and provide Hewlett-Packard with the ability to respond quickly to changing business conditions in the dynamic markets in which it competes.

3.5 PROPOSED PROJECT

The Proposed Project is a Master Plan for the comprehensive planning of the 500-acre Hewlett-Packard site in Roseville. The proposed land use designations are summarized in Table 3-1, and graphically illustrated on Figure 3-4, Conceptual Land Use Plan. Table 3-2 summarizes square footage and acreage by anticipated use.

TABLE 3-1	
HEWLETT-PACKARD MASTER PLAN LAND USE DESIGNATIONS	
Land Use Designation	Acreage
Light Industrial	425.8
Commercial	28.5
Open Space	45.9
TOTAL	500.2
SOURCE: EIP Associates, February 1996.	

TABLE 3-2		
SUMMARY OF PROPOSED HEWLETT-PACKARD MASTER PLAN DEVELOPMENT		
Use Type	Square Feet	Acres
Existing H-P Campus	1,688,000	195.8
Light Industrial (Existing Buildings)	1,300,000	
Planned Buildings	388,000	
Light Industrial (new)	2,303,000	195.5
Commercial	248,000	22.8
Road ROW and Easements		30.9
North Detention Basin		5.7
Open Space		45.9
Non-build Area		3.6
TOTAL	4,239,000	500.2
SOURCE: Hewlett-Packard Master Plan, 1995.		

The Master Plan provides for administrative review and approval of specific projects developed within the Light Industrial-Special Area (M1-SA) Zone on the project site. If a project is proposed for the project site, and it is consistent with the land use designation, zoning, and Master Plan, the project may be reviewed and approved administratively, with no additional environmental analysis beyond that contained in this EIR. All projects will be subject to applicable permits, such as those listed under Section 3.5, below, and will be required to implement applicable mitigation measures contained in this EIR.

The proposed Master Plan is intended to address all aspects of the site by establishing master site, grading, drainage and utility plans, adopting development standards and design guidelines, and establishing an approval process that would enable the orderly development of the remainder of the site. In addition, the Master Plan is requesting approval to increase current entitlements for building square footage and total number of employees to approximately 4.25 million square feet and approximately 13,180 employees. Of this, 370,000 square feet would be new development on the existing two hundred acres, while 2,303,000 square feet would be new development on the remaining 254 acres (not including the 45.9 acres of open space). It is anticipated that 70 percent of the site would be developed by 2010. Total buildout of the Proposed Project is anticipated to occur incrementally over a 25+ year time-frame.

Hewlett-Packard would retain private control of all internal roadways within the project area. All access points to the site would continue to be security controlled. Existing and future public roadways that are located adjacent to the project area include Foothills Boulevard (existing), Blue Oaks Boulevard (future), and Woodcreek Oaks Boulevard (future). The future roads are part of the City's circulation system as outlined in the Roseville 2010 General Plan. Segments of the roadways that will be analyzed are Blue Oaks Boulevard, from Foothills Boulevard to Woodcreek Oaks Boulevard, and Woodcreek Oaks Boulevard, from its current terminus south of Pleasant Grove creek to Blue Oaks Boulevard.

The majority of the site would retain its Light Industrial land use and zoning designations. However, two portions of the site, a 22.5 parcel and a 6.0 acre parcel, are proposed to be changed to General Commercial land use and zoning, and a 45.9-acre area located in the southwest corner of the project area would be changed to Open Space land use and zoning (see Figure 3-4).

Approximately 425.8 acres of the entire 500-acre site would remain designated for Light Industrial uses. Of this, approximately 30.9 acres will be reserved for road right of way and easements, 5.7 acres within the commercial land use designation would be dedicated to a detention basin in the north portion of the site, and 3.6 acres of intermittent drainage would remain undeveloped. Actual development would occur on approximately 248 acres, approximately 30 acres (370,000 square feet) on the existing 200-acre site and approximately 218 acres (2.3 million square feet) on the undeveloped portion.

As shown in Figure 3-4, an electrical substation site would be reserved to the north of the open space area. The substation would be built only if and when needed to serve new development. A groundwater well site will also be reserved near the substation site. The well would be used only as a backup in case of emergency.

Truck Route Designation

In addition to the components described above, the proposed project includes designation of two roadways as truck routes. Blue Oaks Boulevard will be designated a "Future Truck Route from Foothills Boulevard to Fiddymont Road. Fiddymont Road will be designated a truck route from Blue Oaks to Pleasant Grove Boulevard, where it connects with a county road.

Permitted Uses

All use types identified under the Master Plan Light Industrial, General Commercial and Open Space districts are fully defined in the Roseville Zoning Ordinance.

The permitted uses within the Master Plan Light Industrial and General Commercial districts have been modified from the Zoning Ordinance general districts in accordance with the provisions of the Special Area Overlay District. This overlay district allows for modification of the underlying general district regulations (including both permitted use types and development standards) by reference to regulations adopted in the ordinance rezoning the property so classified. In this particular case, the Hewlett-Packard Master Plan contains the regulations and is incorporated into the ordinance establishing the Light Industrial and General Commercial Special Area districts.

The use types permitted within the Master Plan Light Industrial district do not include outdoor manufacturing, but may include limited outdoor storage and the emission of a limited amount of noise, vibration, odor, dust, smoke, light, or other pollutants. These uses are intended to be compatible operating in relatively close proximity to adjacent commercial and residential uses.

The Special Area Overlay District (SA) has been applied to modify uses as permitted by the Light Industrial District of the Roseville Zoning Ordinance. These modifications include changes to Conditional Use and Administrative Permit requirements, and the prohibition of some uses. In general, all permitted industrial and transportation and communication use types have been retained. Uses prohibited include some civic, all residential and several commercial use types. These changes are focused on those uses that have the potential to conflict with internal or adjacent uses, and/or are considered inconsistent with the desired campus character of the project area.

The intent of the General Commercial district is to provide convenient retail and service commercial uses, with some limited outdoor entertainment activities, in close proximity to the employees who will be working within and adjacent to the project area.

The Special Area overlay District (SA) has been applied to modify uses as permitted by the General Commercial District of the Zoning Ordinance. Modifications include prohibiting use types that are residential in nature or have a heavy commercial character, while retaining uses focused towards providing community retail-service needs and limited outdoor entertainment. The outdoor entertainment component of this district is restricted to the northwest General Commercial site in association with the northern detention basin. This basin may be designed to incorporate outdoor entertainment uses such as an amphitheater or recreation. More intensive activities permitted under the Outdoor Entertainment use type, such as large sports arenas, BMX tracks, racing facilities, drive-in theaters and zoos, are not permitted.

The General Commercial parcels would provide for the following uses: retail sales, hotels and conference facilities, restaurants, banks, and service commercial uses such as travel agencies, florists, cleaners and related uses.

The Open Space area would contain the 100-year floodplain of the South Branch of Pleasant Grove Creek, preserve the oak woodlands and other riparian habitat that exists along the creek, and provide drainage facilities.

The intent of the Open Space district is to preserve permanently the open space, existing oak woodland, the 100-year floodplain of the South Branch of Pleasant Grove Creek, other existing seasonal wetlands, valuable wildlife habitat, and scenic resources. The Open Space district will include a wetland preserve and passive recreation uses such as walking trails and benches. The Open Space area is intended to remain in private ownership with access restricted to Hewlett-Packard and related employees. The Open Space district is consistent with the Zoning Ordinance Open Space district.

A portion of the Open Space district has been designated for possible conversion to urban use in the future. The subject area is reflected on Figure 3-4. Such conversion is subject to amendment of the project area's Federal Clean Water Act permit and would require City approval of a General Plan Amendment, Development Agreement amendment, and additional environmental analysis in accordance with CEQA.

General Plan

The Proposed Project would require General Plan Amendments from the existing Light Industrial designation to Open Space (for 45.9 acres) and Commercial (for 28.5 acres). Figure 3-5 depicts the proposed land use designation for the project area.

The Proposed Project also includes an amendment to the General Plan policy regarding levels of service (LOS) on local roadways. The City's current General Plan policies focus on maintaining LOS C at all intersections. Provisions are included to permit the City Council, on a case-by-case basis and in accordance with defined criteria, to allow individual intersections within the infill area to go to LOS D. The proposed General Plan Amendment would modify this policy to apply Citywide including the specific plan areas.

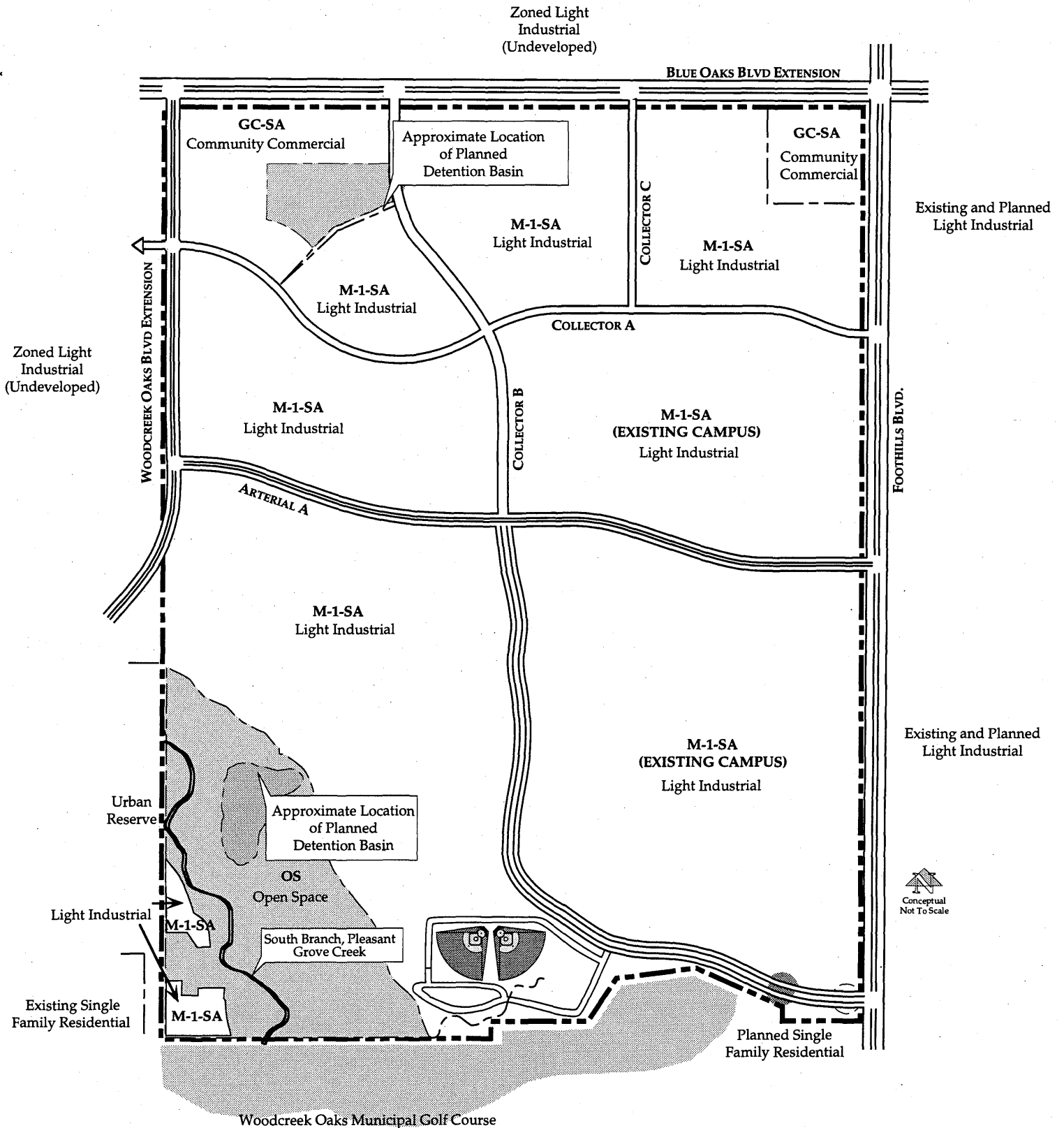
Zoning

All lands within the project area would be zoned consistent with the zoning classifications of the Roseville Zoning Ordinance. The project would entail a rezone of 28.5 acres from its current zoning designation of Light Industrial to General Commercial - Special Area (GC-SA) and 45.9 acres to Open Space (OS). Figure 3-5 depicts the proposed zoning for the project area.

FIGURE 3-5

Land Use and Zoning Exhibit

ZONING: M-1-SA, GC-SA, OS
Land Use: Light Industrial, Community Commercial, Open Space



Subsequent Entitlements

Development within the project area would be subject to approval of subsequent entitlements by the City in accordance with the Zoning Ordinance and Roseville Municipal Code.

The Master Plan includes a Development Approval Process, which specifies the process for review and approval of permitted uses in the M1-SA zone.

The decision to issue an administrative site review permit will be based on a determination of a development proposals consistency with the master plan, in accordance with procedures outlined in the Zoning Ordinance. This determination shall be made by the approving authority (Planning Director), based on project consistency with:

- Land Use and Zoning,
- Master Plan Components,
- Intensity Thresholds and Infrastructure Sequencing,
- Design Guidelines and Development Standards,
- EIR Mitigation Measures, and
- Development Agreement Provisions.

If, after reviewing the proposed project for consistency with the provisions of the Master Plan, the Planning Director determines that the proposal is inconsistent with or gives rise to issues that were not addressed by the Master Plan, the proposed project may be referred to a City commission as the appropriate approving authority.

Financing of Public Improvements

The development of the public improvements necessary to serve the Proposed Project would be funded through a variety of means. The specific method of financing would be established in an individual development agreement between the City and Hewlett-Packard.

3.5 REQUIRED PERMITS AND APPROVALS

As part of the 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. In addition to these requirements, regulatory guidance applicable to individual environmental resources is described in Chapter 4 of this DEIR.

- Section 404 Permit (U.S. Army Corps of Engineers and Environmental Protection Agency)

The U.S. Army Corps of Engineers (Corps) regulates the placement of fill or dredged materials that affect waters of the United States, which include stream courses and jurisdictional wetlands. The Corps regulates these activities under the authority of

Section 404 of the Clean Water Act, and the Environmental Protection Agency (EPA) has commenting and vetoing authority on Corps decisions. The Corps would regulate development in the project area that affects jurisdictional wetlands.

- Water Quality Certification (State Water Resources Control Board)

Construction of the Proposed Project has the potential to directly or indirectly affect "waters and wetlands of the United States." Water or wetlands disturbance could result in a discharge to the South Branch of Pleasant Grove Creek. A water quality certification would be required by the State Water Resources Control Board.

- Streambed Alteration Agreement (California Department of Fish and Game)

CDFG has jurisdiction over construction activities affecting streambeds and banks and work within the 100-year floodplain. This is an agreement reached between an applicant and CDFG regarding methods to be used to avoid or minimize aquatic or wetland habitat losses. Construction of the Proposed Project would require a Section 1603 Streambed Alteration Agreement from California Department of Fish and Game (CDFG) to evaluate the potential for impacts on aquatic habitat in stream channels.

- Storm Water Discharge Permit (State Water Resources Control Board)

Construction of the Proposed Project would involve clearing, grading, and excavation activities that would result in the disturbance of five acres or more of land. As such, the Proposed Project would require a State Water Resources Control Board (SWRCB) permit for storm water discharge. The permit process would include identification of Best Management Practices (BMP's) to control pollutants in storm water discharges both during construction and after construction is completed. BMP's for the Proposed Project would include perimeter controls, diversion channels, sedimentation collection systems, soil stabilization, storm water treatment ponds and wetlands, wet and dry detention ponds, and grassed waterways.

- Hewlett-Packard Master Plan

Approval of the Hewlett-Packard Master Plan, including Design Guidelines and the Development Approval Process, would be required.

- General Plan Amendment (City of Roseville)

The Proposed Project would require a General Plan Amendment to change 74.4 acres of Light Industrial to 28.5 acres of Commercial and 45.9 acres of Open Space. In addition, the project would require a rezone of 28.5 acres from Light Industrial to General Commercial (GC-SA) and 45.9 acres to open space (OS).

- General Plan Policy Change

The Proposed Project includes a change in the City's level of service policy to allow LOS "D" in certain circumstances.

- Tree Permit (City of Roseville)

Construction of the Proposed Project would involve removal of native oak trees which are afforded protection under the City of Roseville's Tree Preservation Ordinance. For projects involving a regulated activity within the protected zone of a protected tree, a tree permit is required.

- Site Review Permit

This permit process would be used for development of principally permitted uses within the General Commercial-Special Area districts. Evaluation and approval of the site review permit will be performed by City staff and City commissions in accordance with the procedures outlined in the Roseville Zoning Ordinance. The evaluation will be based on the proposed project's consistency and substantial compliance with the provisions of the Master Plan, the EIR, and the development agreement.

- Conditional Use Permit

This permit process would be used for conditionally permitted uses within the Light Industrial and General Commercial-Special Area districts. Evaluation and approval of the permit will be performed by City staff and City commissions in accordance with the procedures outlined in the Roseville Zoning Ordinance. The evaluation will be based on the proposed project's consistency and substantial compliance with the provisions of the master plan, the EIR, and the development agreement.

- Sign Permit

This permit is required by the Roseville Sign Ordinance for any new signs proposed on the campus. Evaluation of the permit will be performed by City staff and/or City commissions in accordance with the provisions outlined in the Sign Ordinance.

- PCAPCD Authority to Construct

This permit is described in Section 4.10, Air Quality, of the EIR and is issued and regulated by the Placer County Air Pollution Control District.

- Hazardous Materials Permits

As required by the Fire Department or other regulatory agencies.

- Development Agreement

3.6 BASELINE FOR EIR ANALYSIS

The EIR analysis for quantifiable impacts (e.g., traffic, air quality, noise, public services and utilities) is the 2010 Market/Specific Plan Buildout Scenario described in the General Plan Update EIR, updated to reflect recent development in the City of Roseville, including the Del Webb Specific Plan. The EIR also evaluates both quantifiable and non-quantifiable (e.g., soils) impacts against existing conditions.

ENDNOTES

1. Nelson, Mark, Government Affairs Manager, Hewlett-Packard, personal communication, December 11, 1995.

4. ENVIRONMENTAL ANALYSIS

4.0 INTRODUCTION TO THE ANALYSIS

4.0 INTRODUCTION TO THE ANALYSIS

TOPICS ADDRESSED

The Environmental Analysis section of this EIR discusses the environmental setting, impacts and mitigation measures for each of the following topics:

- Land Use
- Population, Employment and Housing
- Soils, Geology and Seismicity
- Hydrology and Water Quality
- Biological Resources
- Cultural Resources
- Aesthetics
- Hazardous Materials
- Transportation and Circulation
- Air Quality
- Noise
- Public Services and Utilities

SECTION FORMAT

Each section begins with a description of the project **environmental setting** and a **regulatory setting** as it pertains to a particular issue. The setting description is followed by an **impacts and mitigation** discussion. The impact and mitigation portion of each section includes impact statements, which are prefaced by a number in bold-faced type. An explanation of each impact and an analysis of its significance follows each impact statement. Mitigation measures pertinent to each individual impact appear after the impact section. The degree of relief provided by identified mitigation measures is also evaluated. An example of the format is shown below.

IMPACT 4.X-1:

Statement of impact in bold type.

Applicable City Policies
and Regulations:

Applicable City of Roseville General Plan
Policies, Ordinances and/or Regulations

Action Proposed by Applicant:

Such as dedication of an open space preserve

Significance: *Statement of significance after General Plan policies and applicant actions implemented*

Additional Mitigation: Mitigation Measure 4.X-1(a)

Residual Significance: *Less than significant or significant*

Discussion of impact in paragraph format.

4.X.5 MITIGATION MEASURES

4.X-X MITIGATION MEASURE

Mitigation Measure 4.X-1(a): Summary of mitigation measure.

Mitigation Measure 4.X-1(b): Summary of mitigation measure.

Mitigation Measure 4.X-1(c): Summary of mitigation measure.

Discussion of mitigation measure in paragraph form.

4.1 LAND USE

4.1 LAND USE

4.1.1 INTRODUCTION

This section of the EIR addresses the existing and planned land uses of the Hewlett-Packard Master Plan and adjacent areas. The proposed project is a Master Plan that would comprehensively plan the 500-acre Hewlett-Packard facility including the undeveloped 300-acre portion of the site and the 200-acre existing facility. Buildout is anticipated to occur incrementally over a 25+ year timeframe. Adoption of the Proposed Project would require an amendment to the Roseville General Plan and a rezoning of 28.5 acres within the project area from Light Industrial to General Commercial. In addition, 45.9 acres in the southwest portion of the site would be changed from Light Industrial to Open Space. The discussion includes the following:

- a description of the land use setting, including existing land uses in the project area and in adjacent areas;
- an analysis of the potential to change the existing type, intensity or pattern of land uses on and in the vicinity of the project area in relation to existing and foreseeable uses;
- a discussion of the potential for development of land uses in the project area that are incompatible with existing land uses in the project vicinity;
- a discussion of potential impairment of the productivity of adjacent or nearby prime farmland; and
- an analysis of potential conflicts with the primary goals, general directions or stated intention of applicable local plans.

4.1.2 ENVIRONMENTAL SETTING

The project area is located within the City of Roseville and encompasses 500.2 acres in the North Roseville Industrial Area in the northwest portion of the city. The site is owned by Hewlett-Packard. Current facilities occupy approximately 200 acres of the 500 acre site, although some development potential exists within the existing developed area.

To the north and west of the project area the land is undeveloped grasslands, historically used for seasonal grazing. To the south, there is the Woodcreek Golf Club and two low-density residential developments, and to the east, across Foothills Boulevard, is an industrial business park and the NEC semi-conductor manufacturing facility.

The project area falls under the jurisdiction of the City of Roseville; therefore, the land use designations and policies are set forth in its General Plan. Planning policies are implemented through infrastructure plans and programs, the zoning and subdivision ordinances, and the development review process. A list and discussion of General Plan policies that are applicable to the project area are presented in Appendix C, General Plan Consistency.

Land Uses within the Project Area

The existing Hewlett-Packard light industrial manufacturing facility occupies approximately 200 acres of the project area immediately west of Foothills Boulevard. The existing facility totals 1.3 million square feet in 10 manufacturing, distribution, support maintenance, and administrative office buildings, and employs approximately 4,100 employees. The remaining 300 acres west of the existing Hewlett-Packard facility are largely undeveloped grazing lands that consist of gently rolling annual grasslands. There are some dispersed oaks and oak woodlands. A riparian creek corridor traverses the southwestern corner of the project area. The predominant land use within this area is seasonal grazing. A high-pressure gas line bisects the project area in a north/south direction.

An historic ranch site is located on the southern bank of the South Branch of Pleasant Grove Creek in the southwestern section of the project area (see Section 4.6, Cultural Resources). This site consists of a small reservoir and corral, and a large foundation area. No other structures are found within the project area. Several dirt roads provide access within the project area.

The City of Roseville General Plan designates the land uses within the project area for Light Industrial. This land use category is applied to lands reserved for office, industrial, and research and development uses. These uses are expected to generate very limited noise, vibration, odor, dust, smoke, light, or other pollutants, and are either integrated or compatible with surrounding land uses.

Land Uses in the Project Vicinity

City of Roseville

The project area is located within the incorporated limits of the City of Roseville, in Placer County. Historically, the Roseville region has been dominated by agricultural activities, most notably ranching. Seasonal grazing activities continue to be present throughout this area.

The City of Roseville has experienced sizeable growth during the past decade. This has been reflected in all areas of the City. Within the Northwest Roseville Specific Plan (NWRSP), which abuts the southern boundary of the project area, is the Woodcreek Golf Club and two low-density residential developments. The South Branch of Pleasant Grove Creek bisects the southwest

corner of the project area. This undeveloped natural riparian creek corridor is comprised of dispersed oaks and oak woodlands. East of the project area, the land uses are designated Light Industrial and specific users include Albertson's Distribution Center, and the NEC semi-conductor manufacturing facility. In addition, the vacant Lantech Business Park is located between NEC and Albertson's. These industrial uses are a major source of employment within the City. The northern boundary of the project area is defined by the alignment of the future continuation of westbound Blue Oaks Boulevard. North and west of the project area the land is primarily undeveloped and used for seasonal grazing.

Planned Development in the Project Vicinity

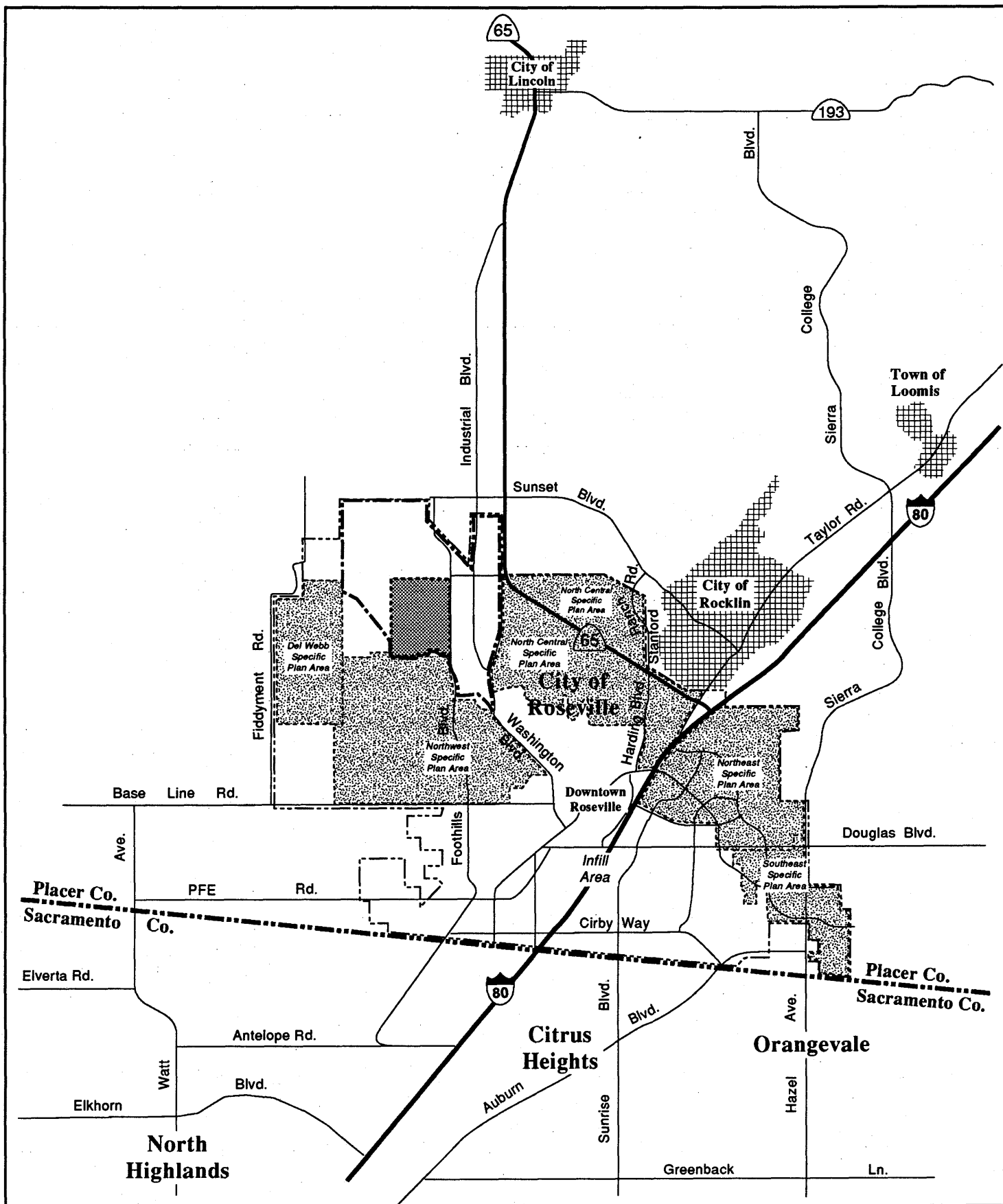
Specific plans have been developed by the City to address growth issues and the unique constraints and opportunities found within each area, as well as to provide a context within which implementation of the land use plan and associated public facilities can be successfully accomplished. The specific plan areas in the vicinity of the project are shown in Figure 4.1-1. These plans are summarized below.

The Northwest Roseville Specific Plan (NWRSP) was adopted in May 1989. This specific plan includes 2,754 gross acres located immediately south and east of the project area within the western portion of the City. Single and multifamily residences are the dominant land use, with associated commercial, office and service uses. The NWRSP also incorporates a significant amount of parkland and open space, the City's Woodcreek Golf Club and several school sites, including the Woodcreek Oaks High School. The NWRSP is partially developed and is expected to accommodate approximately 24,000 residents and provide 4,200 jobs at buildout.

The Del Webb Specific Plan and the North Central Roseville Specific Plan, although not immediately adjacent to the Hewlett-Packard Master project area, are adopted plans that encompass large areas further to the east and west of the proposed project area.

The Del Webb Specific Plan was adopted in December 1993. The specific plan encompasses 1,200 acres and is located west of the project area. The specific plan is an age-restricted "active adult" community. It will consist of primarily single family homes focused around recreational facilities and a golf course. At full buildout the development will include 3,500 dwelling units and 23 acres of commercial property.

The North Central Roseville Specific Plan (NCRSP) was adopted in July 1990. The NCRSP covers 2,514 acres east of the project area. When fully developed, the NCRSP is planned to provide a diverse mix of residential, commercial, office and light industrial uses, regional commercial sites and a wetland preservation/mitigation compensation area. Limited development has occurred in this area to date. At buildout, the NCRSP area is expected to accommodate approximately 12,000 residents and 16,000 jobs.



0 2,000 4,000 Scale in Feet	<table border="0"> <tr> <td>----- Roseville City Limits</td> <td> Hewlett-Packard Master Plan Area</td> </tr> <tr> <td>----- Existing and Approved Roads</td> <td> Approved Specific Plan Areas</td> </tr> <tr> <td>----- North Roseville Industrial Area</td> <td></td> </tr> </table> SOURCE: City of Roseville, <i>City of Roseville Comprehensive Land Use Element Update EIR</i>, February 1995; EIP Associates, February 1996.	----- Roseville City Limits	Hewlett-Packard Master Plan Area	----- Existing and Approved Roads	Approved Specific Plan Areas	----- North Roseville Industrial Area		Figure 4.1-1 Land Use Areas 95190 Regional-Location
----- Roseville City Limits	Hewlett-Packard Master Plan Area							
----- Existing and Approved Roads	Approved Specific Plan Areas							
----- North Roseville Industrial Area								

Agricultural Status

The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program has classified the project area as grazing land, suited only to the grazing of livestock. No Prime Farmland or Farmland of Local Importance exists within the project area. The CDC classifications are as follows:

■ **Prime Farmland:**

This classification is defined as land that has the best combination of physical and chemical characteristics for the production of crops. These lands generally consist of Class I and II soils. They have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed.

■ **Farmland of Local Importance:**

This classification is defined by the CDC as land that has a good combination of physical and chemical characteristics for the production of crops and has been used for the production of irrigated crops within the last three years.

■ **Grazing Land:**

This classification generally applies to the area west and north of the existing Hewlett-Packard facility. As defined by the CDC, these are lands on which existing vegetation is suited to the grazing of livestock.

Agricultural Protection Status

The California Land Conservation Act of 1965 (more commonly known as the Williamson Act) is a nonmandated State policy providing for a preferential assessment of agricultural and open space lands that meet local size and use criteria. In return for lowered property taxes, owners of farmland place landholdings under contract with participating cities and counties and are then restricted from developing the properties during the contracted timeframes. In most cases, contracts are initially signed for longer periods and are automatically renewed yearly unless one of the following actions is taken:

- Non-renewal (phase-out over remaining years),
- Cancellation,
- Eminent domain, or
- City annexation under certain circumstances.

None of the project area or adjacent areas is restricted to agricultural uses under the Williamson Act.

4.1.3 REGULATORY SETTING

City of Roseville

General Plan

The City of Roseville last completed a comprehensive update of its General Plan in 1992. This General Plan update addressed goals, policies, and implementation measures, but did not modify land uses or land use allocations. Prior to the 1992 Update, the General Plan had not been comprehensively updated since 1977. The Land Use Element had been last updated in 1984. The land use element established goals, policies, and accompanying implementation measures related to land uses and development, and designated the general distribution and intensity of residential, commercial, industrial, public and semi-public, open space, and other land uses.

The overall goal of the Land Use Element is to "promote a balanced land use pattern that supports innovative land use approaches and retains and enhances the distinct character and identity of Roseville."¹

A presentation of the City's General Plan policies and a discussion regarding the consistency of the project area with the plan, can be found in Appendix C, General Plan Consistency.

Zoning Ordinance

The zoning ordinance is a tool to implement the broad policies contained in the General Plan. Zoning focuses on the immediate uses of land rather than the longer-term, planned uses contained in the General Plan. Typically, a General Plan land use designation allows a broad use of the property and a zoning classification restricts the uses further by specifying particular uses and development intensity standards.

North Roseville Industrial Area

The North Roseville Industrial Area is recognized as a planning subarea of the City of Roseville. The Area consists of 2,443 acres devoted to existing and planned industrial uses. The Area is intended to provide a major employment/industrial center for the South Placer region. The North Roseville Industrial Area will ultimately accommodate approximately 31,346 jobs at total buildout. Presently, a majority of the area remains undeveloped.² Design guidelines were adopted in June 1992 that are intended to guide physical development in the area.

Master Plan

The Hewlett-Packard Roseville Campus Master Plan combines the elements of land use and zoning with an infrastructure plan, project approval process and design guidelines in a single document tailored to the Hewlett-Packard project area.

The Master Plan will contain the development standards for the zone districts established for the project area. It provides land use and zoning, intensity thresholds, development standards and design guidelines, and the implementation process.

4.1.4 IMPACTS

Method of Analysis

Agriculture

The California Department of Conservation has developed a Farmland Mapping and Monitoring Program that classifies the different agricultural soil types related to their ability to sustain agricultural crops and for lands on which existing vegetation is suited to the grazing of livestock.

Land Use

Existing and planned land uses in the project area have been identified based on a site visit by EIP Associates staff and information provided by the City of Roseville Community Development Department, the applicant and its consultant team. The land use evaluation is based on a qualitative comparison of existing and proposed uses on the site and their compatibility with existing and planned land uses as defined in the City's General Plan and/or relevant Specific Plans, as well as other applicable local and/or regional environmental and planning documents.

Consistency with the General Plan

Implementation of the Proposed Project would result in an amendment to the Roseville General Plan and a change in the existing zoning in portions of the project area. These changes would alter existing land use plans by changing lands currently planned for light industrial uses to general commercial and open space.

A discussion of the consistency between the project area and the goals and policies of the City of Roseville General Plan is found in Appendix C, General Plan Consistency, of this document.

The Proposed Project relies on approval of the applicant's proposed General Plan Amendment to be consistent with the General Plan. Impacts have not been identified on the basis of inconsistencies between the General Plan and the proposed Hewlett-Packard Master Plan, because a General Plan Amendment will be required prior to approval of the Master Plan.

Standards of Significance

The evaluation of land uses for the Proposed Project is based on an analysis of the types of impacts generated by the proposed land uses on the site and compatibility with existing and planned adjacent land uses. Significant impacts are identified in cases where the proposed changes in type and intensity of land uses are incompatible with uses on or adjacent to the site.

For purposes of this analysis, an impact is considered significant if the project area could:

Agriculture

- lead to the impairment of the productivity of adjacent or nearby prime farmland;

Land Use

- lead to development of land uses that are incompatible on the site or change the character of existing and/or proposed adjacent land uses; and
- result in a conflict with the primary goals, general directions or stated intention of applicable local plans.

IMPACT 4.1-1:

Land use conversion

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The City of Roseville General Plan designates the land use within the project area for Light Industrial. The Proposed Project would develop approximately 300 acres incrementally over a 20 to 25 year timeframe. The uses would include commercial, light industrial, and open space uses. The completed project would include approximately 4.24 million square feet of manufacturing, distribution, warehousing, administrative offices, research and development, and support maintenance buildings that would employ a total of 13,180 people. Of the 300 acres, 28.5 acres involve rezoning from Light Industrial to Commercial and 45.9 acres would be changed to Open Space. This conversion does not represent a significant physical change to existing and planned land use in the project area, and it is consistent with the General Plan, North Industrial Area Plan and Zoning Ordinance. Therefore, this impact is considered less than significant.

IMPACT 4.1-2:**Agricultural land conversion**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The Proposed Project would convert undeveloped seasonal grazing land to light industrial and other urban uses. This would result in the loss of these lands for future grazing purposes. The conversion of grazing land (for cattle and sheep grazing purposes) is considered a less-than-significant impact, because the site is not irrigated and the relatively low value of the property for agricultural purposes as defined by the Farmland Mapping and Monitoring Program.

IMPACT 4.1-3:**Conflict with adjacent uses**

Applicable City

Policies and Regulations:

General Plan Policies LA-1 and LA-6

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The project site is bordered by residential development, a golf course, industrial development, and vacant land designated for light industrial development or as urban reserve. Future uses of the urban reserve are not defined; however, it is possible that some residential and/or other sensitive development could occur there.

Conflicts could occur between the commercial uses and light industrial and surrounding existing and future development, depending upon proximity/layout of parking, placement of buildings, access requirements for utility/maintenance services, and scheduling of activities. Appropriate use of berming, landscaping and setbacks should not only "complement" adjacent uses per the City of Roseville's General Plan and Design Guidelines, but should be designed to effectively screen noise or visual intrusions.

The General Plan contains the following policies to minimize any conflict with adjacent uses:

- Policy LA-1 The City of Roseville shall ensure high quality development in new and existing development areas as defined through its specific plans, development review process and design guidelines.
- Policy LA-6 The City shall, through development approvals and City programs (e.g., redevelopment, capital improvement program, parks and recreation programs, etc.) assure that all portions of the community are linked and integrated.

Screening, buffering, height, distance and area requirements of future industrial uses are required by the General Plan, the North Roseville Area Design Guidelines, Hewlett-Packard Master Plan Design Guidelines, the City's Community Design Guidelines, at the Site Review, and the City's Zoning Ordinance under the articles pertaining to General Development Regulations and Special Area and Specific Use Requirements. For this reason, the impact is considered less than significant.

IMPACT 4.1-4:

Conflict between internal land uses

Applicable City

Policies and Regulations:

General Plan Policy LA-1

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The potential conflict between adjoining commercial and light industrial uses within the project area would be minimal. The accepted uses within commercial uses include stores and businesses selling a full range of goods and services along with professional office uses. The light industrial uses include distribution, manufacturing, assembly, support maintenance, and warehousing. Any potential conflicts would be mitigated through screening, buffering height, distance and area requirements of future light industrial uses as required by the City of Roseville General Plan (see Impact 4.1-3), Hewlett-Packard Master Plan Design Guidelines, the North Roseville Area Design Guidelines, City's Community Design Guidelines, Site Review, and the City's Zoning Ordinance under the articles pertaining to General Development Regulations and Special Area and Specific Use Requirements. For this reason, the impact is considered less than significant.

The compatibility of the open space and light industrial uses within the project area could be an issue in the future, depending upon final design of the light industrial uses themselves. Screening, buffering height, distance and area requirements of future light industrial uses are

required by the General Plan, the Master Plan, the City's Community Design Guidelines, at the Site Review, and the City's Zoning Ordinance under the articles pertaining to General Development Regulations and Special Area and Specific Use Requirements. For this reason, the impact is considered less than significant.

4.1.5 CONSISTENCY WITH THE GENERAL PLAN

A discussion of the consistency between the Proposed Project and the goals and policies of the General Plan is found in Appendix C. All policies were found to be consistent (or not applicable to the Proposed Project), with mitigation identified throughout Chapter 4. Consistent criteria for determining the Proposed Project's consistency with General Plan policies were applied to this analysis. For policies which are permissive, the Proposed Project was not found to be inconsistent unless it would clearly impede the intent of the policy. If the Proposed Project would not satisfy every particular of a given policy, but would generally meet the intent of the policy, it was not found to be inconsistent.

Mitigation measures that have been identified in the technical resource chapters of the DEIR are evaluated for their potential to reduce the Proposed Project's conflict with policies. If mitigation measures would conform the Proposed Project to the intent of the policy, the Proposed Project would be considered consistent (with mitigation) and thus the impact would be less than significant.

4.5 MITIGATION MEASURES

None required.

ENDNOTES

1. City of Roseville, *General Plan 2010*, November 18, 1992.
2. Ibid, page II-7.

4.2 POPULATION, EMPLOYMENT AND HOUSING

4.2 POPULATION, EMPLOYMENT, AND HOUSING

4.2.1 INTRODUCTION

This section describes the anticipated changes in employment that would result from the development of the Proposed Project. The generation of new employment opportunities is evaluated against existing employment levels. The degree to which new employment could increase the demand for housing is addressed, along with project effects on the jobs/housing balance. A brief description of the existing population is provided as background for the analysis.

4.2.2 ENVIRONMENTAL SETTING

Population

Regional Population

Placer County is one of the four counties comprising the Sacramento Metropolitan Statistical Area (MSA). The other counties include El Dorado, Sacramento, and Yolo. Over the previous decade, this region was one of the most rapidly growing in the state. The population in the MSA grew 18 percent in ten years, from 1.2 million people in 1980 to 1.5 million people in 1990.

Placer County has been a rapidly growing component of the Sacramento MSA, as shown in Table 4.2-1. Between 1980 and 1990, Placer County grew from 117,247 to 172,796 people, an increase of 55,549 residents, or 47 percent. Placer County was the state's sixth most rapidly growing county during this period. During the decade, Placer County's share of the regional population total grew from 11 percent to 12 percent.

Between 1990 and 1993, the rate of growth in Placer County outpaced the entire Sacramento MSA. The MSA added almost 124,000 persons, which represents an 8 percent increase. During the same time period, Placer County added 21,304 persons, representing a 12 percent increase.

City of Roseville Population

From 1980 to 1990, the City of Roseville's population increased from 24,347 to 44,685, an addition of 20,388 persons or 84 percent. Roseville's share of Placer County's total population also grew, increasing from 21 to 27 percent. Much of Roseville's growth occurred during the latter part of the decade, as newcomers were attracted to the City's relatively affordable housing. Between 1990 and January 1, 1995, the City added another 14,715 residents, for a total population of 59,400. The City's Population is expected to increase to 73,536 by the year 2000.

TABLE 4.2-1

**POPULATION GROWTH/SHARE ANALYSIS
SACRAMENTO METROPOLITAN STATISTICAL AREA,
PLACER COUNTY, AND ROSEVILLE
(1980-1990, 1990-1993)**

Area	1980 ¹	1990 ²	1993 ³	Years	Growth	Percent Change
Sacramento MSA	1,099,814	1,481,102	1,604,900	1980-1990	381,288	35%
				1990-1993	123,798	8%
Placer County	117,247	172,796	194,100	1980-1990	55,549	47%
				1990-1993	21,304	12%
Placer County (share of MSA)	11%	12%	12%	1980-1990		15%
				1990-1993		17%
City of Roseville	24,347	44,685	53,800	1980-1990	20,338	84%
				1990-1993	9,115	20%
Roseville share of Placer County	21%	26%	28%	1980-1990		37%
				1990-1993		43%

¹ U.S. Census of Population, April 1, 1980
² U.S. Census of Population, April 1, 1990
³ California Department of Finance estimates for January 1, 1993
MSA = Metropolitan Statistical Area
SOURCE: City of Roseville Comprehensive Land Use Element Draft EIR, February 1995.

Roseville's share of the County's population increased to 28 percent, up two percent from 1990. Roseville's share of the County's growth increment also increased from 37 percent for the period 1980 to 1990 to 43 percent for the years 1990 to 1993. By January 1, 1994, Roseville's population had risen to slightly over 56,000 residents.

Employment

Regional Employment

The Sacramento MSA economy underwent a significant expansion during the 1980's as non-agricultural employment grew throughout the region. Services, retail trade, government, and wholesale trade all increased to meet the needs of the region's expanding population base. Placer County shared in the region's economic expansion with its own rapid growth. By 1990, Placer County employment represented ten percent of the regional total.

Placer County's economy is evolving from its traditional dependence on the railroad industry, the lumber and wood products industry, and agriculture. As noted by the State of California Employment Development Department, the County's substantial population growth has increased consumer demand and the number of jobs in retail, service, and construction. In 1990, Placer County had a total labor force of 83,473, of which 7,811 (or 9.4 percent) were unemployed. Of this total, wage and salary employment numbered 62,900 (see Table 4.2-2).

TABLE 4.2-2 EMPLOYMENT/SHARE ANALYSIS SACRAMENTO METROPOLITAN STATISTICAL AREA, PLACER COUNTY, AND ROSEVILLE (1990)				
Sacramento MSA	Placer County	Placer County Share of MSA	City of Roseville	Roseville Share of Placer County
638,400	62,900	10%	22,000	35%
SOURCE: City of Roseville Comprehensive Land Use Element Draft EIR, February 1995.				

City of Roseville Employment

With approximately 22,000 jobs in the third quarter of 1990, Roseville had 35 percent of Placer County's total employment. Approximately 40 percent of Roseville's employment was in the commercial sector, followed by 31 percent in the office sector, and 28 percent in the industrial sector.

Douglas Boulevard, the I-80 corridor, and the North Industrial Area which includes the project area, are the City's major employment centers. With new development in portions of the North Industrial Area (including the project area) and commercial/retail/office development in specific plan areas, employment opportunities have become more widely distributed within Roseville.

Existing Employment in the Project Area

The only employment in the project area is at the existing Hewlett-Packard facility. As of March 1995, a total of 4,100 employees worked at that location. It should be noted that Hewlett-Packard's existing use permit allows employment up to 4,665 employees.

Jobs/Housing Balance

The jobs/housing balance refers to the location of residences in relation to the location of employment-generating uses. A well-balanced ratio of jobs and housing is assumed to reduce the number of vehicle trips resulting from commuting, because employment opportunities and commercial services are near residential areas. This reduction in vehicle trips reduces motor vehicle travel; therefore, it improves air quality. To fully realize the benefits of a job/housing

balance, the occupations and wages made available by the employment opportunities should correspond to the affordability and availability of nearby residences. As a result, jobs/housing balance must take into consideration both the number of units and their affordability.

The State Legislature has declared its intention to move toward the goal that every California worker have available the opportunity to reside close to his or her job site.¹ The City of Roseville has established its support for a jobs/housing balance through General Plan policy LE-1 which states that the City will:

Strive for a land use mix and pattern of development that provides linkages between jobs and employment uses, will provide a reasonable jobs/housing balance, and maintain the fiscal viability of the City.

The City of Roseville, Placer County, and City of Rocklin all adopted similar resolutions regarding the jobs/housing balance in 1983. Roseville's Resolution 83-118 states that a satisfactory jobs/housing balance, for the core industrial areas surrounding SR 65 and Washington Boulevard, is for 80 percent of the workers to reside within eight miles of their employment and for 60 percent to live within six miles.

In 1990, there were 17,789 dwelling units in the City of Roseville. Assuming a worker per household ratio of 1.35, approximately 25,516 workers could be housed within the City. Total 1990 employment was 22,030 in Roseville. Using the methods presented in Resolution 83-118, 80 percent of the employees would be 17,624. Therefore, the housing supply would be available for more than 80 percent of the workers and the current jobs/housing balance is considered numerically acceptable; however, due to the need to match housing costs, income levels and other housing choice factors, the relationship of housing affordability to housing supply is extremely complicated and difficult to accurately predict within single jurisdictions, or other sub-areas of the larger regional housing market.

Housing

Housing Supply

Region and Placer County

In 1990, the housing supply in Placer County was 77,879 dwelling units. This represents a 63 percent increase over the 1980 housing supply. Eighty percent of the units were single family residences, fourteen percent were multi-family units, and the remaining six percent were manufactured or mobile homes. Construction of new homes increased the number of dwelling units to 87,767 in 1994. The proportion of single-family units declined slightly to 78.5 percent and multi-family units increased to 15.6 percent of the total housing stock.

The housing vacancy rate in all of Placer County was estimated in 1994 to be 16.26 percent, reflecting the large number of vacation homes in the Lake Tahoe area. Unincorporated areas in the County have a particularly high vacancy rate of 27.14 percent, in contrast to the average vacancy rate for incorporated areas of 4.49 percent.

City of Roseville

The General Plan land use allocation provides for a total of 39,200 dwelling units.² This includes approximately 1,000 units that are not allocated to specific geographic locations, and that have been specifically reserved for use by the City in certain housing programs, such as density bonuses and other development incentives. Based on City growth projections, it is expected that the current residential land use allocation will be exhausted by the year 2005.

As of January 1994, there were 21,261 dwelling units in the City.³ This is more than double the 10,267 units estimated in 1980 by the U.S. Census and is an increase of 4,239 from 1990 though 1993. Table 4.2-3 illustrates the growth in residential units from 1983 through 1994. The average household size was determined by the 1990 census to be 2.54 persons per household.

TABLE 4.2-3	
CITY OF ROSEVILLE	
OCCUPANCY PERMITS ISSUED (1983-1994)	
Year	Number of Permits
1983	312
1984	519
1985	743
1986	720
1987	1,084
1988	1,379
1989	1,802
1990	1,320
1991	1,147
1992	1,150
1993	628
1994	1,016
SOURCE: City of Roseville Comprehensive Land Use Element Draft EIR, February 1995. Susan Fletcher, Roseville Community Development, July 1995.	

Over two-thirds of the dwelling units in the City are single-family residential homes. However, multi-family residential construction has increased substantially. Multi-family units have risen from 13 percent of the available housing stock in 1980 to nearly 24 percent. From 1990 through 1993, 1,860 multi-family units and 2,285 single-family units were constructed. The pace of construction has slowed in the last two years. Table 4.2-4 describes the types of dwelling units existing in the City of Roseville in 1994.

The vacancy rate in Roseville varied between 1980 and 1991 from 5.39 percent to 7.54 percent. The 1994 vacancy rate was under 5 percent. The fluctuations are believed to be a result of economic conditions and an increasing demand for all housing types.

TABLE 4.2-4 CITY OF ROSEVILLE EXISTING DWELLING UNITS		
Residential Type	Number of Units	Percentage of Total
Single Family	14,400	67.9
Half-Plex	416	2.0
Other Attached Single Family	285	1.3
Two-family (Duplex)	552	2.6
Multi-family (3 units or more)	5,063	23.8
Mobilehome	443	2.1
Group Quarters	62	0.3
TOTAL	21,261	100.0
SOURCE: City of Roseville, Comprehensive Land Use Element Draft EIR, February 1995.		

4.2.3 REGULATORY SETTING

The City of Roseville General Plan includes a number of policies intended to ensure an adequate stock of housing for a variety of employment opportunities. Please see Appendix C, General Plan Consistency, for a discussion of those policies.

4.2.4 IMPACTS

CEQA directs that social and economic effects be considered in an EIR only to the extent that they would result in secondary or indirect adverse impacts on the physical environment. Section 15382 of the CEQA Guidelines defines "significant effect on the environment" as follows:

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

The direction for treatment of economic and social effects is reiterated in Section 15131(a) of the CEQA Guidelines:

Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

Therefore, anticipated changes in employment attributable to buildout of the Proposed Project will be considered for secondary physical environmental impacts in other sections of this EIR (e.g., traffic and circulation; air quality, noise).

New employment in a community creates population expansion by adding new employees and their families. This addition to the existing population can affect the environment through increased demand for housing and public services, and through increased use of the transportation network and associated effects on air quality and noise. These specific issues are discussed in depth in separate sections of this EIR. The following discussion describes the amount of new employment (direct and indirect) and housing that could be generated by the Proposed Project.

Method of Analysis

Employment

The additional jobs that could result from the development of the Proposed Project are calculated based upon the types of development and the estimated amount of floor area of each development. The assumed floor to area ratio (FAR) is 0.25 for office and retail development, 0.20 for light industrial development on the existing HP site, 0.27 for industrial uses on the undeveloped portion of the site (see Table 4.2-5). A standard ratio of employees per floor area (3.1 employees/1,000 sq. ft.) is applied to the FAR to determine the future level of employment in the project area.

Jobs/Housing Balance

The number of residential units needed by employees under the Proposed Project is presented and compared to the housing supply available to the City of Roseville.

TABLE 4.2-5
HEWLETT-PACKARD MASTER PLAN
EMPLOYMENT GENERATION¹

Land Use Type	Developable Acres ²	Floor to Area Ratio (sq. ft./acre) ³	Building Area (sq. ft.)		Employment Density (per 1,000 sq. ft.)	Employees by Land Use	
			Existing	Net New		Total	Net New
Commercial	22.8	25%	0	248,000	3.0	744	744
Light Industrial							
HP Existing	195.8	20%	1,300,000	388,000	3.1	5,303 ⁴	1,203
HP Expansion (West Expansion)	135.0	27%		1,588,000	3.1	4,923	4,923
Light Industrial (North Expansion)	60.5	27%		712,000	3.1	2,207	2,207
TOTAL EMPLOYMENT						13,177	9,077

¹ Employment estimates contained in this table represent maximum employment at buildout of the land uses within the Hewlett-Packard Master Plan Area.

² Based on Hewlett-Packard Company Roseville Business Campus Planning Information (Revised October 11, 1995) table provided by Wade Associates Analysis, Steve Brown Analysis.

³ 43,560 sq. ft. per 1 acre.

⁴ Includes a total existing employment of 4,100 employees at the Hewlett-Packard Company main Roseville campus as of January 1996. Based upon a March 31, 1995 letter from Mark Nelson, Hewlett-Packard Government Affairs Manager to Mr. Steve Dillon, City of Roseville, Community Development Director.

SOURCE: HP Master Plan, October, 1995; EIP, 1995.

Standards of Significance

Implementation of the Proposed Project would result in a significant impact if:

- an imbalance in the City jobs to housing ratio is exacerbated; or
- the demand for housing exceeds anticipated supply.

IMPACT 4.2-1:**Increase in employment within the City of Roseville**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The Proposed Project would include commercial and industrial designations. The development of these uses is anticipated to increase the employment within the project area. As shown in Table 4.2-5, development in the project area would be able to accommodate 13,177 employees, a net increase of 9,077 over existing employment levels in the project area. The buildout of the project area at these levels would be higher than anticipated in the City of Roseville General Plan, which indicated that industrial employment levels for all industrial uses would increase from 6,185 in 1990 to 15,854 under the 2010 Market Specific Plan Buildout scenario.

The Proposed Project would also create periodic, short-term increases in construction employment. According to the General Plan EIR, this increase in employment opportunities would be beneficial to the City. Therefore, the increase in employment due to the Proposed Project is considered less than significant.

IMPACT 4.2-2:**Increase in demand on the City's supply of housing**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

The City's General Plan currently provides for development of a total of 39,200 dwelling units. As of 1994, there were 21,269 housing units in the City, allowing development of an additional 17,931 dwelling units under the current land use allocation.

Implementation of the Proposed Project is not expected to substantially affect Roseville's housing stock. If 100 percent of the anticipated 9,077 new workers were imported to the Roseville area, and assuming one housing unit per worker, the total housing need would be 9,077 units. This represents approximately 50 percent of the available residential land use allocation; this worst-case scenario would not be a significant impact because there is ample housing supply of allocated residential land to serve project-generated need. Since the project will draw a portion of its workers from the local community, the actual project-generated increase in housing demand would be less than the worst case, and would be less than significant.

IMPACT 4.2-3: Changes in the jobs/housing balance

Applicable City Policies and Regulations:	None
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

The City of Roseville Resolution 83-118 establishes a formula for determining the jobs/housing balance. Resolution 83-118 states that a satisfactory jobs/housing balance is for 60 percent of the workers to reside within eight miles of their employment and for 80 percent to live within six miles.

As stated under Impact 4.2-2, development of the Proposed Project is anticipated to add approximately 9,077 new jobs to the City of Roseville, which could create a maximum demand for 9,077 housing units. Using the assumptions in Resolution 83-118, the project area should have approximately 4,509 residential units within six miles and 6,011 residential units within eight miles of the project area. There are several large residential developments located within several miles of the project area, including the Northwest and North Central Specific Plan areas.

In addition, within eight miles, there is existing and proposed housing in Rocklin, south Placer County and north Sacramento County. Therefore, there should be adequate housing to satisfy Resolution 83-0118. Therefore, this is considered a less-than-significant impact.

4.2.5 MITIGATION MEASURES

None required.

ENDNOTES

1. State of California, Government Code 65890.1.h.
2. City of Roseville, *Comprehensive Land Use Element Draft EIR*, February 1995.
3. Ibid.

4.3 SOILS, GEOLOGY AND SEISMICITY

4.3 SOILS, GEOLOGY AND SEISMICITY

4.3.1 INTRODUCTION

This section addresses potential effects related to on-site soils and geologic and seismic conditions in the Proposed Project. Project area characteristics such as topography, regional and local geology, seismicity, mineral resources and soil types are described. This information is based on information summarized from the U.S. Soil Conservation Service West Placer County Soil Survey, the West Roseville Baseline Study, geologic and mineral resource reports by the California Division of Mines and Geology, and existing reports on geologic conditions in the area.

4.3.2 ENVIRONMENTAL SETTING

Topography

The project area is located within the Central Valley, in the north and west portion of the City of Roseville. The South Branch of Pleasant Grove Creek traverses and drains the area in an easterly to westerly direction and is located in the southwest portion of the project area. The site is characterized by gently rolling and undulating terrain with some cut banks located along the creek channel. Elevations range from 125 feet above mean sea level (msl) along the western boundary of the project area to approximately 145 feet msl along the eastern boundary of the project area.

Regional Geology

The Central Valley is composed of alluvial deposits from the adjoining Sierra Nevada. The geology in the vicinity of the project area consists of transitional formations between the alluvial deposits of the Valley and granitic material characteristic of the Sierra Nevada range. The Roseville area is principally underlain by relatively recent Plio-Pleistocene non-marine sedimentary deposits formed during the Cenozoic period. These sedimentary deposits include older Sacramento Valley alluvium (Laguna and Valley Springs formations). The Sacramento Valley alluvium typically consists of very firm layers of sand, silt, and gravel, which do not contain very weak or highly compressible soil layers. The United States Geological Survey (USGS), (*Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills, California*) identifies three dominant formations in the project area: the Turlock Lake Formation, the Riverbank Formation and quaternary alluvium. Development constraints created by geologic formations typically relate to underlying stability and water bearing capability.

Local Geology

The geologic units located on the project area include the following.

Turlock Lake Formation

The Turlock Lake formation, the predominant geologic unit in the project area, is generally characterized by partially consolidated gravel, sand, and silt. The surface soil typically contains zones of cemented sand and silt (hardpan). This formation consists of eroded alluvial fans derived primarily from plutonic rocks (igneous rocks formed at great depth) of the Sierra Nevada. A principal constraint associated with the Turlock formation is the relative impermeability and limited water holding capability of the material.¹

Riverbank Formation

This geologic unit consists of weathered reddish gravel, sand and silt formed from mafic (primarily dark mineral) igneous rock fragments. This unit forms clearly recognizable alluvial terraces and fans. The alluvial component of this unit was likely derived from the Sierra Nevada and was deposited by the ancestral American and other rivers.²

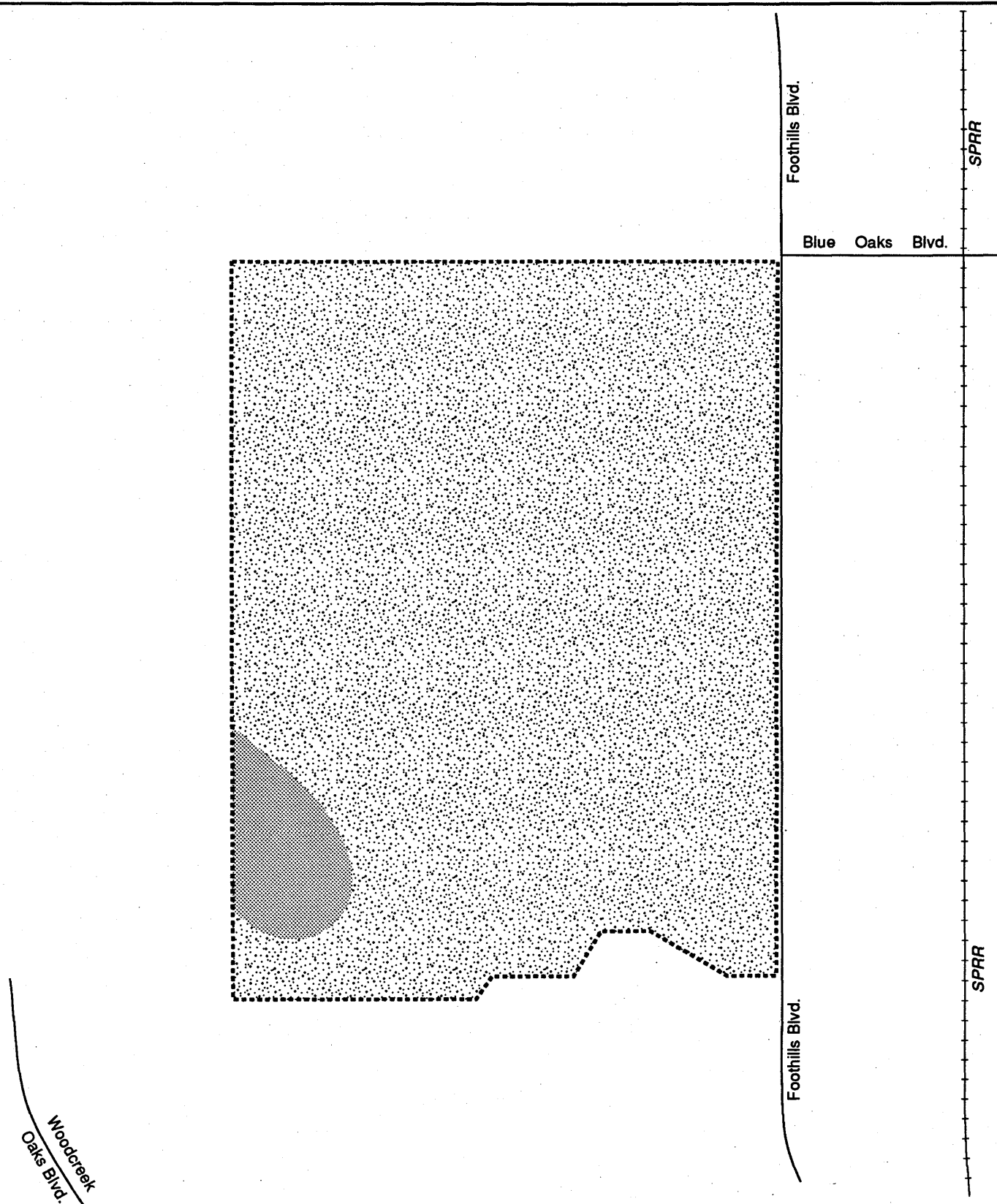
The geologic units located in the project area are illustrated in Figure 4.3-1.

Mineral Resources

The California Department of Mines and Geology (CDMG) is responsible under the California Surface Mining and Reclamation Act of 1975 (SMARA) for the classification and designation of areas that contain (or could contain) significant mineral resources. The purpose of the identification of these areas is to provide a context for land use decisions by local governments in which mineral resource availability is one of the pertinent factors being balanced along with other considerations. The CDMG has not performed a detailed evaluation of the project area.

Aggregate resources are classified as one of several different mineral resource zone categories (MRZ-1, MRZ-2, MRZ-3, MRZ-3(a), and MRZ-4). These classifications are generally based upon the relative knowledge about the resource's presence and the quality of the material. Of the five classifications listed, only MRZ-4 occurs within the project area. MRZ-4 zones are areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources. This does not imply there is little likelihood for the presence of mineral resources, but rather that there is a lack of knowledge for regarding mineral occurrence. Further exploration could result in reclassification of land in MRZ-4 categories to MRZ-2 or MRZ-3 categories.

No mineral extraction operations exist in the project area.



- Master Plan Area
- Turlock Lake Formation (Pleistocene)
- Existing and Approved Roads
- Riverbank Formation (Pleistocene) Upper Member

Figure 4.3-1
Geologic Units

0 1/8 1/4

Scale in Miles

N

95190
Base-
Small

SOURCE: City of Roseville, *City of Roseville West Roseville Baseline Studies*, September 1992; EIP Associates, January 1996.

Seismicity

Regional Faults

There are a number of mapped faults within a fifty mile radius of the project area. The project area is located between the seismically active Coast Ranges and the historically seismic Foothill fault zone in the Sierra Nevada. Regional faults to the west include the San Andreas fault system including the Hayward and Calaveras Faults, and to the east, the Bear Mountain and Melones Faults in the Foothill fault zone. Currently, studies are being performed to identify the potential for significant seismic activity occurring on blind thrust faults located within the eastern edge of the Coast Ranges. These faults are identified in Table 4.3-1 and Figure 4.3-2.

Local Faults

Although numerous faults have been identified within 100 kilometers of the Sacramento area, no active faults are known to exist within Placer County and the project area is not located within an Alquist-Priolo Special Studies Zone, which is a delineated "special study zone" along known active faults in California. Placer County is classified as a low-severity earthquake zone.³ The probable maximum expected earthquake intensity that can be anticipated in this zone would be VI or VII on the modified Mercalli Scale and a 5.0-5.9 in magnitude on the Richter Scale.⁴ The last geologic activity recorded in the area with an intensity of 4 or greater measured on the Richter Scale occurred in 1908. The epicenter of this event was located on a north/south line between Folsom and Auburn and on an east/west line between Placerville and Roseville. There have been several less severe events since 1908, but no significant activity has been recorded in the vicinity.

Active faults are those that have experienced displacement in historic time, while inactive faults have not. However, there is the potential for inactive faults to reactivate or experience displacement along a branch of the system sometime in the future. An example of a fault system that is considered to have reactivated is the Foothills Fault System. The system was considered inactive until evidence of an earthquake (approximately 1.6 million years ago) was found near Spenceville, California. Then, in 1975, an earthquake occurred on another branch of the system near the City of Oroville (now known as the Cleaveland Hills Fault). The system is now considered potentially active with a low seismic risk. Due to the potential for fault movement, even though the likelihood of the occurrence is low, the following discussion about inactive faults is included in this section.

There are no mapped active faults within Placer County; however, three inactive faults have been mapped east of the project area (see Figure 4.3-2). These include the Volcano Hill Fault, the Linda Creek Fault, and an unnamed fault alignment which extends east/west between Folsom Lake and the City of Rocklin. The Volcano Hill Fault extends northwesterly from Volcano Hill for a distance of approximately one mile, terminating near Eureka Road. There has been no recorded activity along the fault; therefore, it is generally considered inactive. In 1973 the California Division of Mines and Geology identified the "Linda Creek Fault." As the name implies, this alleged fault is located along Linda Creek. The extent of this alleged fault is limited

TABLE 4.3-1
FAULTS WITHIN 60 MILES OF SACRAMENTO

Name	Fault Type	Distance From Sacramento (kilometers)	Maximum Creditable Earthquake¹ (magnitude)
Dunigan Hills	Subsurface, Normal	25	Not Estimated
Midland	Subsurface, Normal	35	Not Estimated
Foothill Fault System			
Bear Mountain	Vertical	35	6.5
New Melones	Vertical	65	6.5
Stockton	Subsurface	75	5.0
San Andreas Fault System			
Antioch	Strike-Slip, Right Lateral	70	Not Estimated
Greenville	Same	70	6.5
Concord	Same	75	6.9
Green Valley	Same	75	6.9
Healdsburg/Rogers Creek	Same	90	7±1/4
Hayward	Same	90	7±1/4
Calaveras	Same	100	7±1/4
San Andreas	Same	120	8.3

¹ Maximum Credible Earthquake. The term maximum credible earthquake (MCE) is defined as the largest earthquake that is likely to be generated along an active fault zone (Slemmons & Chung 1982). The magnitude of the MCE is estimated from the geologic character and earthquake history of the fault. Most workers, when calculating the MCE for the strike-slip faults of the Coast Ranges, estimate the potential length of surface rupture, then use empirical relations which equate rupture length with earthquake magnitude. At a minimum, the MCE must equal the largest historic earthquake on a fault.

SOURCE: City of Roseville, *North Central Roseville Specific Plan Draft EIR*, July 1989.

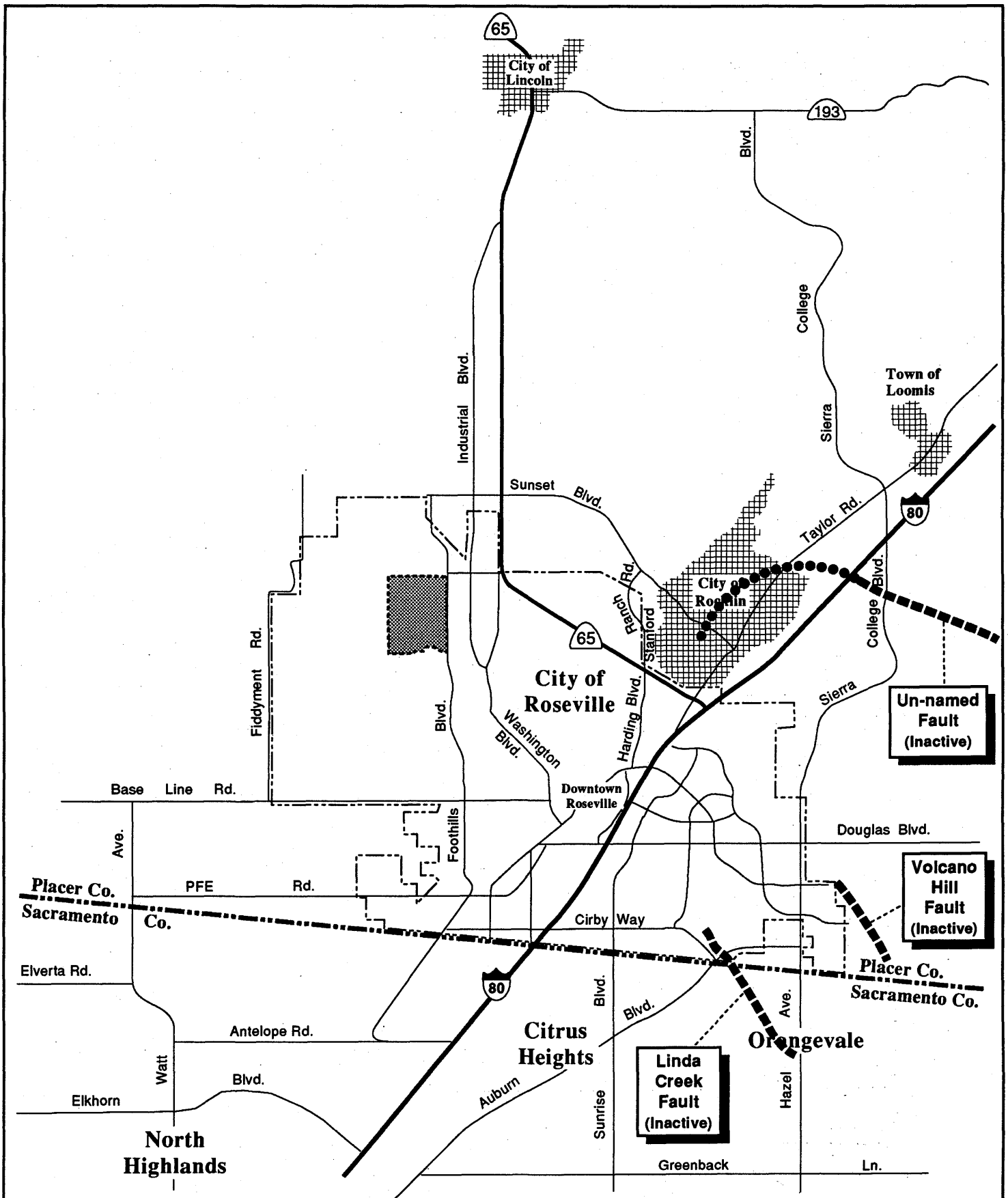


FIGURE 4.3-2

Local Fault Location Map

95190
Regional-
Location

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to a segment of creek in the City of Roseville and Sacramento County, east of the project area.⁵ The unnamed fault extends east to west between Folsom Lake and the City of Rocklin. Segments of this fault are concealed, and consequently, unmapped. However the east/west alignment suggests that the fault could connect to the Bear Mountain Fault, branches of which are located beneath Folsom Lake. The Bear Mountain Fault is identified as one of the faults that could be undergoing reactivation as a result of continental tectonic activity. However, no such evidence has been observed along the unnamed fault alignment.

Secondary Seismic Hazards

Liquefaction

Liquefaction is defined as the loss of soil strength due to seismic forces acting on water-saturated granular soils, which leads to quicksand conditions that generate various types of ground failure. The potential for liquefaction must take into account soil type, soil density, depth to the groundwater table, and the duration and intensity of groundshaking. Liquefaction is most likely to occur in low-lying areas of poorly consolidated to unconsolidated water-saturated sediments or similar deposits. Though the City of Roseville's geographic location, soil characteristics and topography combined minimize the risk of liquefaction, a site-specific geotechnical study would need to be performed to adequately characterize liquefaction potential in the project area.

Subsidence

Subsidence is the sinking of the ground surface usually due to groundwater withdrawal or other subsurface collapse or extraction. The Roseville area is not known to have experienced significant subsidence or subsequent constraints to development due to subsidence.⁶

Soils

Soil Characteristics

Soils of the Central Valley are generally characterized as erosional deposits of the Sierra Nevada to the east. Soil limitations can include slow or very slow permeability, limited ability to support a load, high shrink-swell potential, moderate depth to hardpan, low depth to rock, and frequent flooding. The US Soil Conservation Service (SCS) has identified and mapped soils in Placer County. Each identified soil has characteristics that affect soil behavior. Characteristics of importance to this project include the following.

Shrink-Swell Potential

The potential for volume change in a soil with a loss or gain in moisture. If the shrink-swell potential is rated moderate to high, damage to buildings, roads, and other structures can occur.

Permeability

The ability of a soil to transmit water or air. Permeability is considered in the design and construction of soil drainage systems, where the rate of water movement under saturated conditions affects the behavior of water movement through the soil.

Erosion

The susceptibility of a soil to water or wind transport.

Runoff

The volume of rainwater directly leaving an area in surface drainage, as opposed to the volume that seeps out as groundwater.

Soil Types in the Project Area

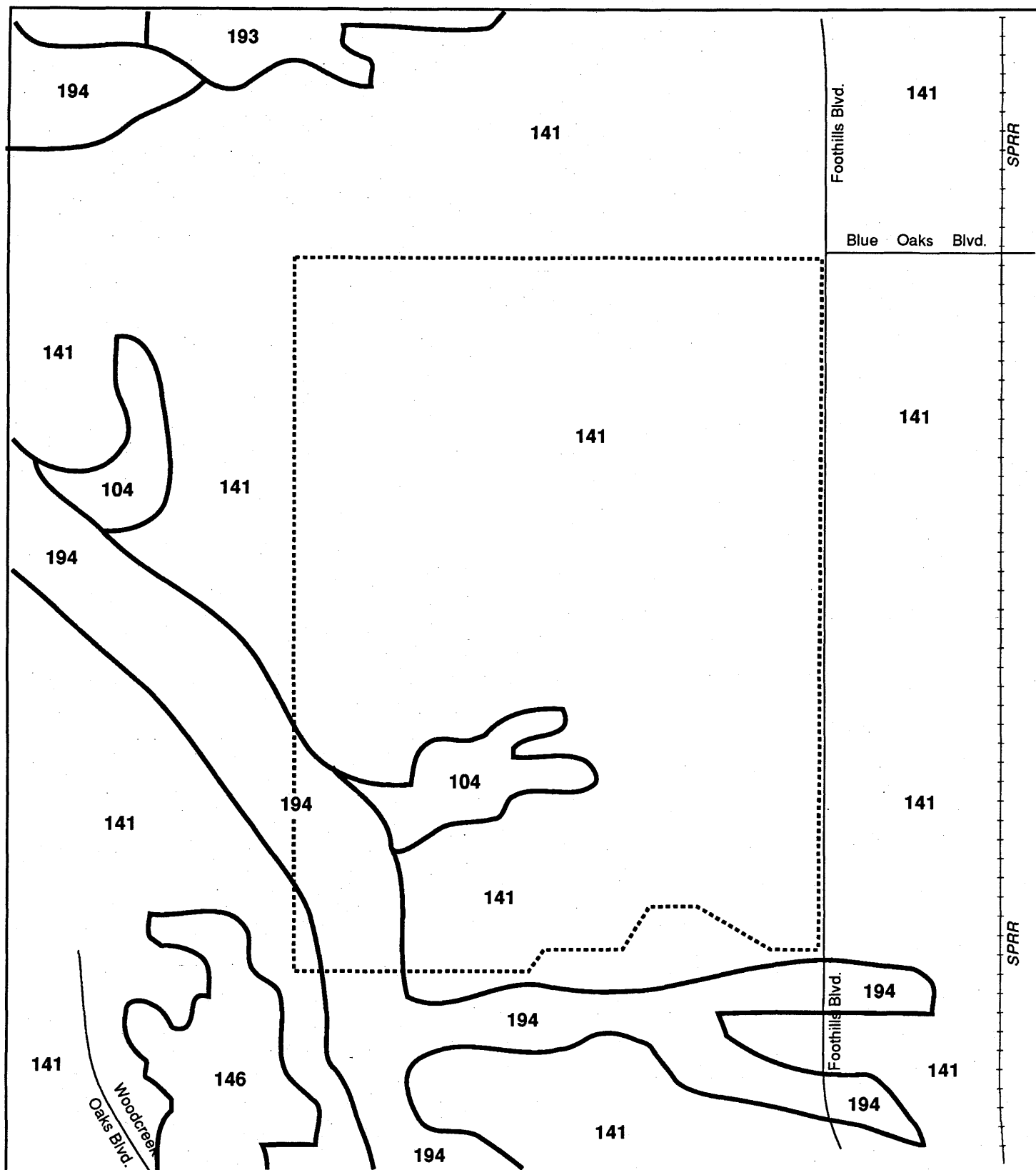
The following is a description of the soils and soil complexes found in the project area and surrounding area. Site soils are illustrated in Figure 4.3-3.

104 - Alamo-Fiddymment Complex

This soils complex is comprised of nearly level to gently undulating soils found on low terraces at elevations of 50 to 130 feet. The unit is 50 percent Alamo soils and 30 percent Fiddymment soils. The Alamo soil is in nearly level basins and drainage-ways, and the Fiddymment is on side slopes and ridges. The Alamo soil is a poorly drained clay that is moderately deep over hardpan. It has slopes of 0 to 2 percent and is formed in fine textured alluvium from mixed sources. The Alamo soil is characterized by slow permeability, slow or ponded surface runoff, a slight erosion hazard and high shrink-swell potential. The Fiddymment soil is well drained and is moderately deep over hardpan. It is formed in old valley fill indurated siltstone or sandstone. It is characterized by slow permeability, slow surface runoff, a slight erosion hazard and a high shrink swell potential below one foot. The major constraints to development on this complex are very slow permeability, inability to support a load and a high shrink-swell potential. This soil complex is found, to a limited extent, in the northwestern portion of the site.

141 - Cometa-Fiddymment Sandy Loams

This soils complex is comprised of undulating soils found on low terraces at elevations of 75 to 200 feet. The Cometa component is a deep, well-drained claypan soil that is formed in alluvium from granitic sources. It is characterized by very slow permeability, slow surface runoff, a slight erosion hazard, and a low surface but high at depth shrink-swell potential. The Fiddymment component is a well-drained soil that is moderately deep over hardpan and formed in old valley fill siltstone. It is characterized by very slow permeability, slow surface runoff, a slight erosion hazard, and a low surface but high at depth shrink-swell potential. The major constraints to development on this soil complex is the very slow permeability, the high shrink-swell potential and the inability to support a load. This soil complex is found throughout the project area except in the northwestern and southwestern corners of the project site.

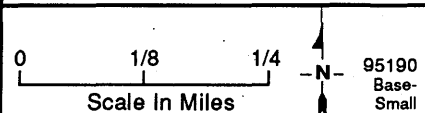


- | | |
|-----------------------------------|--|
| ----- Master Plan Area | 104 Alamo-Fiddymment Complex |
| ----- Roseville City Limits | 141 Cometa-Fiddymment Sandy Loam |
| ----- Existing and Approved Roads | 146 Fiddymment Loam |
| ----- Soils Boundaries | 193 Xerofluvents, Occasionally Flooded |
| | 194 Xerofluvents, Frequently Flooded |

SOURCE: City of Roseville, *City of Roseville Comprehensive Land Use Element Update EIR*, February 1995; EIP Associates, February 1996.

Figure 4.3-3

Soils Map



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146 - Fiddymment Loam

The Fiddymment loam is similar to the Fiddymment component of the Cometa-Fiddymment complex described above with the following exceptions: it is characterized by slow to medium runoff and a slight to medium erosion hazard. It is present in very limited quantities outside the project area adjacent to the southwestern corner of the site.

193 - Xerofluvents, Occasionally Flooded

These soils consist of small areas of moderately well-drained, loamy alluvium adjacent to stream channels. The soil is characterized by moderate to moderately slow permeability, a slight erosion hazard and slow surface runoff. The water table is within 30 to 49 inches of the surface during the rainy season, but drops below 60 inches during the dry months. These soils are located immediately adjacent to Pleasant Grove Creek in the southwestern portion of the project area. These soils consists of alluvial material which is deposited during flooding events in the area. The major constraint to development on this soil unit is the flooding hazard.

194 - Xerofluvents, Frequently Flooded

These soils are similar in character to the Xerofluvents described above; however, this unit is flooded more frequently.

Soil Constraints in the Project Area

Shrink-Swell Potential

Expansive soils increase in volume when they absorb water, and decrease in volume when they are dry. With the exception of the xerofluvents, all of the site soils are moderately or highly expansive, either at the surface or the shallow subsurface. These soils could damage structures and building foundations.

Permeability

All of the soils identified in the project area exhibit slow to very slow permeability. These soils transmit water and/or air very slowly and can cause significant ponding and soil drainage problems.

Erosion and Runoff

With the exception of the xerofluvents-frequently flooded, which are located in and immediately adjacent to stream channels and are highly erosive, the soils on the site are characterized by slow runoff and a slight erosion potential; therefore, they are not considered constraints to development.

Agricultural Soils

Soils are also categorized by their potential use as agricultural land. "Prime Farmland" is defined by the State Department of Conservation as land that has the best combination of physical and chemical characteristics for the production of crops. These lands generally consist of Class I and II soils. They have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. "Farmland of Statewide Importance" is defined by the State Department of Conservation as land that has a good combination of physical and chemical characteristics for the production of crops and has been used for the production or irrigated crops within the last three years. None of the project area has been designated as Prime Farmland or Farmland of Statewide Importance.⁷ The Land Use section of this document further describes the issues related to project development and Prime Farmland (see Section 4.1).

4.3.3 REGULATORY SETTING

The City of Roseville Planning and Public Works Departments maintain policies and guidelines regarding grading, erosion control, inspection and permitting. In addition, it may be necessary to obtain easements for control structures and any associated piping and/or utilities. Permits that are related to geology and may be required for the Proposed Project include:

- grading permits from the City of Roseville Public Works Department,
- construction permits from the City of Roseville Building Department,
- drilling permits for geotechnical borings, piling borings or irrigation well borings from the County Department of Environmental Health, and
- well-abandonment permits from the Regional Water Quality Control Board.

Because the project area is not located within an Alquist-Priolo Special Studies Zone, no associated provisions would be required for project development.

4.3.4 IMPACTS

Method of Analysis

The California Division of Mines and Geology (CDMG) fault activity map and local studies and the Alquist-Priolo Special Studies Zone Act were reviewed to identify potential faults and seismic hazards in the project area and from a regional perspective.

The USDA Soil Conservation Survey for Placer County was reviewed to identify soil constraints present on the project site. Soil constraints could include high shrink-swell potential and high erosion potential along drainages and creeks. Mineral resource maps from CDMG were reviewed to determine whether project development could occur over important mineral resources.

Standards of Significance

For the purpose of this EIR, an impact was considered significant if the Proposed Project could result in:

- the exposure of people or structures to major geologic hazards, such as substantial surface rupture, groundshaking, liquefaction, slope failure or landslides;
- structures being placed on soils that are likely to collapse or subside, or that exhibit expansive characteristics that could damage foundations or structures;
- Substantial changes to site topography; or
- the loss of, or loss of access to, mineral resources identified in a Mineral Resource Zone by the CDMG.

IMPACT 4.3-1:	Construction of structures in an area of potential seismic activity
Applicable City	
Policies and Regulations:	SA-1 through SA-4
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

Placer County is classified as a low severity earthquake zone and no active faults are known to exist within the county. The site is considered to have a low seismic risk with respect to such seismic effects as faulting, ground rupture, liquefaction and ground lurching. Therefore, it is unlikely that property damage or safety hazards would result from a major seismic event on regional faults. However, the potential risk associated with a major earthquake cannot be completely dismissed. Construction in the project area must be in accordance with the Uniform Building Code and local building standards as administered by Roseville Building Department to reduce the risk of seismic-related safety hazards and structural damage (to pipelines, roads, and buildings) from groundshaking to an acceptable level. Additionally, the General Plan contains the following policies to reduce risks associated with seismic activities.

- SA-1. Continue to monitor seismic activity in the region, and take appropriate action if significant seismic hazards, including potentially active faults, are discovered in the Planning area.

- SA-2. Continue to mitigate the potential impacts of geologic hazards through building Plan review.
- SA-3. Minimize soil erosion and sedimentation by maintaining compatible land uses, suitable building designs and appropriate construction techniques.
- SA-4. Comply with state seismic and building standards in the design and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and storage facilities, bridges and large public assembly halls.

Implementation of the General Plan Policies SA-1, SA-2, SA-3 and SA-4 would ensure that seismic activity in the area is continuously monitored, and should hazards be identified, the City would respond accordingly. Regular monitoring and diligent enforcement of the UBC requirements regarding seismic and geologic safety would ensure that new development and construction meet all seismic and geologic safety standards, ultimately protecting the public by reducing the risk of building damage or collapse. Therefore, the impact of seismic activity in the project area is less than significant.

IMPACT 4.3-2:

Potential failure of structures and infrastructure facilities due to construction on soils which exhibit slow permeability, low strength and high shrink-swell potential

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policies SA-2 and SA-3

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.3-2 (Site-specific geotechnical evaluations to assess development on soils characterized by slow permeability, low strength and high shrink-swell potential)

Residual Significance:

Less than significant

Based on information obtained from the U.S. Soil Conservation Service, the majority of the soils on the site have slow permeability, low strength and high shrink-swell potential. The physical forces resulting from the shrink-swell processes of the soils can exert pressure on foundations and infrastructure lines which in turn could result in pipeline and foundation damage. Soils exhibiting low strength can cause damage to structural foundations, and soils characterized by slow permeability can cause drainage problems. Based on available information, the soil conditions in the project area do not appear to pose any significant constraints to commercial and industrial construction or infrastructure placement that cannot be overcome through the application of standard engineering practices. The site-specific geotechnical evaluation required in Mitigation

Measure 4.3-2 would include recommendations for alleviating constraints due to high shrink-swell potential. Implementation of this mitigation measure as well as compliance with General Plan Policies SA-2 and SA-3 as discussed above in Impact 4.3-1, would reduce this impact to a less-than-significant level.

IMPACT 4.3-3:	Loss of mineral resources
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Applicable City	
Policies And Regulations:	None required
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

The project site is classified as an area of no known mineral resources. However, this does not rule out the possibility that they could exist. Currently, there is no information available to determine the presence or absence of mineral deposits at the site. Areas to the east of the project site consist of land designated as no source for minerals, or lands that have some resource, the significance of which cannot be determined from existing information. Given the existing conditions and classification of the project area, as well as its proximity to other lands with limited mineral resources, it is unlikely significant mineral deposits are present. Therefore, this is considered a less-than-significant impact.

IMPACT 4.3-4:	Topographic changes due to grading activities
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Applicable City	
Policies and Regulations:	None
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

Development of the Proposed Project would result in alterations to the existing topography due to grading activities. Any area outside of the Open Space designation and non-developable areas could be leveled to accommodate new development. Grading activities would be necessary to prepare the project site for the proposed structures, infrastructure and roadway/parking improvements. In addition, there would be a general flattening out of the gently undulating

topography that is present on the project site. The change in topography would be consistent with the existing Hewlett-Packard development. Therefore, the impact is considered less than significant.

4.3.5 MITIGATION MEASURES

4.3-2 SOILS CONSTRAINTS

Mitigation Measure 4.3-2: Site-specific geotechnical evaluation to assess development on soils characterized by slow permeability, low strength and high shrink-swell potential.

To comply with General Plan Policies SA-2 and SA-3, a site-specific geotechnical evaluation shall be conducted as part of the development review process per the determination of the Public Works Director. Additionally, the site-specific geotechnical evaluations shall provide recommendations for development in areas with identified soil constraints, which shall be implemented during construction.

ENDNOTES

1. City of Roseville, *Comprehensive Land Use Element Update Project, Draft Environmental Impact Report*, February 1995.
2. City of Roseville, *Draft West Roseville Baseline Studies*, September 1994, Appendix B, Lithologic Descriptions.
3. City of Roseville, *2010 General Plan*, November 18, 1992.
4. City of Roseville, *North Central Roseville Specific Plan, Annotated Draft Environmental Impact Report*, SCH # 88053010, 1990.
5. City of Roseville, *General Plan*, November 18, 1992, Safety Element.
6. City of Roseville, *General Plan*, November 18, 1992, Safety Element.
7. Placer County Planning Dept., *Placer County Farmland Designation Map*, May 1994.

4.4 HYDROLOGY AND WATER QUALITY

4.4 HYDROLOGY AND WATER QUALITY

4.4.1 INTRODUCTION

This section addresses the effects of the Proposed Project on the hydrologic characteristics of the project area including surface water flow, groundwater recharge, flooding and drainage, and surface and groundwater quality.

4.4.2 ENVIRONMENTAL SETTING

Surface Water Hydrology

Roseville is located in the Sacramento River Basin which encompasses approximately 26,500 square miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The Sacramento River is the principal river in the basin. The principal tributaries to the Sacramento River include the Pit, Feather, Yuba, Bear, and American Rivers to the east.

The project area is located within the watershed of Pleasant Grove Creek and includes the tributary south branch of Pleasant Grove Creek along the southwestern portion of the site.

Pleasant Grove Creek Watershed

The headwaters of Pleasant Grove Creek are located about five miles east of the project area, near Citrus Colony Road and Humphery Road, north of Rocklin. The creek flows in a westerly direction, north of the project area. The headwaters of the South Branch of Pleasant Grove Creek are located near the border between Roseville and Rocklin. The creek flows to the northwest, crossing through the southwestern part of the project area and joins Pleasant Grove Creek approximately one and one-half miles to the west. Pleasant Grove Creek continues in a westerly direction and flows into Pleasant Grove Creek Canal, approximately seven miles downstream of the City limits. The Pleasant Grove Creek Canal flows into the Cross Canal in Sutter County and into the Sacramento River just south of its confluence with Feather River, approximately 14 miles west of Roseville.

Flooding

In the Roseville area, flooding is primarily associated with storm runoff exceeding the capacity of stream channels and drainage facilities. Reports of flooding along Dry, Antelope, Cirby, and Linda Creeks have been recorded from the 1930s to present. The largest storm event on record

occurred in February 1986. This event caused substantial flooding and property damage. In January 1995, a storm event of significant magnitude occurred which also caused wide-spread flooding and property damage along Dry Creek in Roseville.

100-Year Floodplain

The 100-year floodplain is an area, that based on flood records, is subject to inundation from a flood that has a 1 percent chance of occurring in any given year. Floodplain designations have been defined by the City Zoning Ordinance, Federal Emergency Management Agency (FEMA), and City of Roseville consultants. The City and FEMA have restrictions for development in designated floodplains, described in Section 4.4.3.

In 1987, the City of Roseville supplemented the FEMA designated floodplain with an analysis conducted by Nolte and Associates. The Nolte study resulted in the mapping of a new floodplain, the "Nolte future floodplain," which is a 100-year floodplain based on modeling of the buildout of the Pleasant Grove (including the project area) and Dry Creek watersheds. The base flood elevations (100-year floodplain elevation) assumed development within the floodway fringe. The floodway fringe is the area along the boundary of the floodplain which, if totally obstructed, would not result in more than a one-foot increase in water surface elevation. The Nolte future floodplain is considered a worst-case scenario because it included full buildout of the watersheds.¹

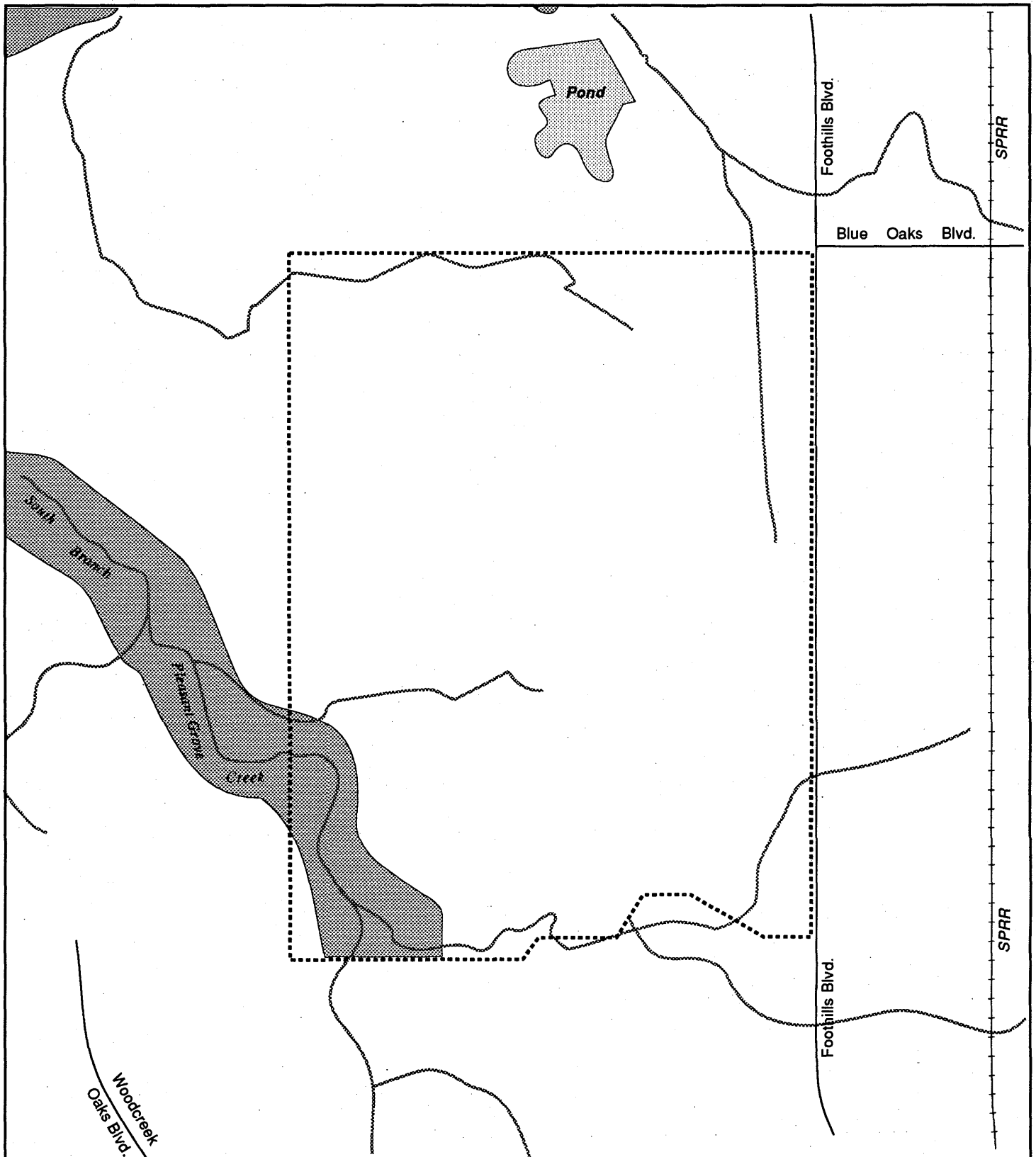
Portions of the project area along the South Branch Pleasant Grove Creek are located in the 100-year floodplain (see Figure 4.4-1). Tables 4.4-1 and 4.4-2 summarize floodplain elevations calculated by Nolte and Associates for Pleasant Grove Creek and the South Branch of Pleasant Grove Creek in and near the project area. As part of the 1994 West Roseville Baseline Studies conducted for the project area, the engineering firm of CH2M Hill reviewed the Nolte floodplain data for the project area for accuracy and to determine if updating of the floodplain mapping would be required to account for current and future conditions. CH2M Hill's review concluded that the actual 100-year flood flows were within five to ten percent of those estimated in Nolte's 1987 study; therefore, the delineated floodplain for the project area was deemed accurate.²

CH2M Hill also conducted a hydrologic analysis to determine existing and future flows in the intermittent drainages which are tributary to Pleasant Grove Creek and the South Branch Pleasant Grove Creek which were not included in the City of Roseville Official Floodplain Maps and Profiles. Table 4.4-3 presents the results of this study and show existing and future flows for the 10-year and 100-year events.³ The drainage tributary flows for the project area are 120 cfs in a 24-hour, 10-year peak flow and 26 acre-feet in 24-hour 100-year volume.

Floodplain Management

The City of Roseville has developed several flood mitigation programs and maintains several flood control projects within its jurisdiction.

Roseville has a flood alert and early warning system to monitor stream flows and precipitation through a network of computer-linked sensors located in stream channels. When water levels reach critical stages, flood-control measures are implemented including portable dikes, traffic diversions, and flood-warning broadcasts.⁴



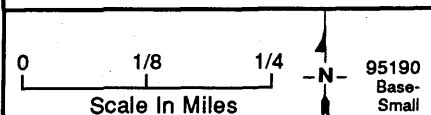
- Hewlett-Packard Master Plan Area
- Roseville City Limits
- Existing and Approved Roads
- Streamcourses/Creeks

 Project Area
100-Year Floodplain

SOURCE: City of Roseville, *Official Floodplain, Maps and Profiles*, May 1987;
EIP Associates, February 1996.

Figure 4.4-1

**Project Area
100-Year Floodplain**



eip

TABLE 4.4-1
ESTIMATED FLOOD ELEVATIONS AND PEAK FLOWS
FOR PLEASANT GROVE CREEK

Location	100-Year Peak Flow (cfs)	100-Year Flood Elevation (feet NGVD)	10-Year Flood Elevation (feet NGVD)	Floodplain Width (feet)	Floodway Width (feet)
Fiddymment Road	5,630	92	90	850	125
Western Boundary Walaire 160 Property	N/A	92.5	90.5	975	200
Eastern Boundary Diamond Creek Property	4,020	99	97.8	475	250
Foothills Boulevard	N/A	102.5	101.8	500	300
Southern Pacific Railroad	N/A	107.5	105.5	500	100
Highway 65	N/A	110.5	109	425	100

NOTES:

cfs = cubic feet per second

NGVD = National Geodetic Vertical Datum

N/A = Not Available

SOURCE: City of Roseville Draft, West Roseville Baseline Studies, 1994.

TABLE 4.4-2

**ESTIMATED FLOOD ELEVATIONS AND PEAK FLOWS
FOR SOUTH BRANCH PLEASANT GROVE CREEK**

Location	100-Year Peak Flow (cfs)	100-Year Flood Elevation (feet NGVD)	10-Year Flood Elevation (feet NGVD)	Floodplain Width (feet)	Floodway Width (feet)
Western Boundary Walaire 160 Property	1,480	91.8	90	975	37.5
Eastern Boundary Woodcreek North Property	1,430	106.5	105	325	100
Misty Wood Drive	N/A	113	111.5	125	50
Foothills Boulevard (Downstream)	N/A	116	115	200	50
Foothills Boulevard (Upstream)	N/A	118.5	116	300	50
Southern Pacific Railroad (Downstream)	N/A	121.5	120	125	50
Southern Pacific Railroad (Upstream)	N/A	123.5	121	125	50
Washington Boulevard	N/A	123.5	121.5	250	50

NOTES:

cfs = cubic feet per second

NGVD = National Geodetic Vertical Datum

N/A = Not Available

SOURCE: City of Roseville, Draft West Roseville Baseline Studies, 1994.

TABLE 4.4-3				
TRIBUTARY "D" TO THE SOUTH BRANCH OF PLEASANT GROVE CREEK				
Subbasin	Flood Discharge (CFS) Downstream of Subbasin			
	10-Year Existing	10-Year Future	100-Year Existing	100-Year Future
D1	45	66	80	122
D3	86	112	149	180
D4	96	119	159	191
NOTE: cfs = cubic feet per second SOURCE: City of Roseville, Draft Baseline Studies, 1994.				

The City also collects drainage mitigation fees to provide funding for flood control projects (including studying the construction of a regional retention pond). The Pleasant Grove Creek watershed fee is levied on all development within the watershed. The amount of fees charged an individual project depends on the project's contribution to flows, and its location in the watershed.⁵

The Placer County Flood Control District (PCFCD) and the City are developing a regional flood control plan for Pleasant Grove Creek in response to concern expressed by Sutter and Sacramento counties about potential downstream increases in flood levels due to development in western Placer County. The plan includes provisions for construction of a regional stormwater retention basin in western Placer County and channel improvements between the regional retention basin and the confluence of Pleasant Grove and Kaseberg Creeks. The type and location of the improvements have not been specifically identified. All new development within the watershed in the City would be assessed an impact fee for the acquisition of land and construction of the regional retention basin or for acquisition of the floodplain. The fees would be based on the incremental increase in runoff volume coming from each proposed development.⁶

Drainage

Runoff characteristics of the project area are defined by topography, ground slope, vegetative cover, soil types, and the amount of impermeable surface area. Site topography is relatively flat and generally sloping from east to west. Existing ground cover in the project area includes impervious surfaces from existing development, with the remainder composed primarily of natural, including grass, brush, and oak woodlands. Soils in the project area have low infiltration rates except in stream channels. Impermeable paved areas within and immediately adjacent to the project area include Foothills Boulevard and the existing developed industrial site within the project. Surface water flows primarily towards Pleasant Grove Creek and its tributaries.

Surface Water Quality

Specific water quality data are not available for Pleasant Grove Creek.⁷ However, surface water quality can be characterized by surrounding land uses. For example, the existing industrial uses at Hewlett-Packard and adjacent sites (e.g., NEC) could contribute levels of heavy metal, hydrocarbons and other constituents. For a discussion of existing sources of hazardous materials contamination that could adversely affect the project area, see Chapter 4.8, Hazardous Materials.

Urban Runoff

Development of the project area would primarily result in the urbanization of currently undeveloped land. There are varied concentrations of pollutants carried in urban runoff. The pollutant concentration of urban runoff is typically highest during the first major rainfall event after the dry season. This event is known as the "first flush". The "first flush" can carry a variety of accumulated pollutants. Oil, grease, heavy metals, sediment, pesticide residues, and fecal chloroform bacteria from roadways, parking lots, rooftops, and other surfaces are the primary pollutants in urban runoff. Runoff is most commonly deposited into waterways next to paved surfaces. Pollutant concentrations in urban runoff are extremely variable and are dependent upon storm intensity, land use, elapsed time since the previous storm, and the volume of runoff.

Groundwater Resources

Roseville is situated over the north central portion of the Central Valley Groundwater Basin which extends from Red Bluff to Bakersfield. Groundwater in the general vicinity of the project area is recharged by rainwater that infiltrates through superficial soils and stream and river bottoms. The rate and quantity of water reaching the saturation zone depends on factors that include the amount and duration of precipitation, soil type, moisture content of the soil, and vertical permeability of the unsaturated zone. A large portion of the project area is comprised of soils that are impermeable or underlain by hardpan. In these areas, infiltration is low, thereby limiting groundwater recharge. Groundwater recharge in the vicinity occurs primarily along major stream channels such as Pleasant Grove Creek, the South Branch of Pleasant Grove Creek, Kaseberg Creek, and Dry Creek. Depth to groundwater in the project area ranges from approximately 30 to 80 feet below the ground surface. The direction of flow is generally to the southwest.

Groundwater Quality

Comprehensive groundwater quality data have not been gathered for the Roseville area.⁸ No data are available to characterize existing groundwater quality in the project area.⁹ It is anticipated that information will be collected on groundwater quality during installation of any new wells necessary to serve the project area.¹⁰ Similar to surface water quality, groundwater quality can be characterized by surrounding land uses (see surface water quality discussion above).

4.4.3 REGULATORY SETTING

Floodplain Regulations

The City of Roseville restricts development within and the placement of fill in floodplains and floodways within the City's jurisdiction. The US Army Corps of Engineers (Corps) regulates the placement of fill or dredge material in waters of the United States (which includes stream courses and jurisdictional wetlands). The Corps regulates these activities under the authority of Section 404 of the Clean Water Act (CWA). The Corps would regulate any development in the project area that would affect jurisdictional wetlands. The California Department of Fish and Game (DFG) has authority over stream bed and bank alterations within the 100-year floodplain under Sections 1600 through 1603 of the California Fish and Game Code. Please see Chapter 4.5, Biological Resources, for a complete discussion of Corps and DFG permitting authority.

FEMA oversees the delineation of flood zones and the provision of disaster assistance. FEMA maps floodplains and manages the National Flood Insurance Program (NFIP), which enables property owners within designated flood zones to purchase flood insurance. As part of this program, flood zones are mapped on Flood Insurance Rate Maps (FIRMs). In September of 1990, the City adopted revised FIRMs which cover a small portion of the South Branch of Pleasant Grove Creek.¹¹

FEMA maintains restrictions on development in designated floodplains. FEMA requirements for nonresidential structures include: (1) Elevate the lowest floor (including the basement) to at or above the base flood level; (2) together with attendant utility and sanitary facilities, design so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and (3) require that fully enclosed areas below the lowest floor that are subject to flooding be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters.

The PCFCD develops regional strategies for flood control management in Placer County. The PCFCD consists of several municipalities including Roseville, Rocklin, and Lincoln. The PCFCD and Placer County Resource Conservation District provide advice and assistance on floodplain management.

Surface Water Quality Regulations

The State of California Department of Water Resources has water quality standards that are required by Section 303 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. The Water Quality Control Plan, or Basin Plan, prepared by the Central Valley Regional Water Quality Control Board (CVRWQCB), has established water quality standards and objectives for the Sacramento River and its tributaries (including the American River and Pleasant Grove Creek). These standards are in keeping within the State of California standards. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria are used to establish a standard. Other criteria may be applied from State Water Resources

Control Board (SWRCB) documents (e.g., the Inland Surface Water Plan (ISWP), and the Pollutant Policy Document) or from Environmental Protection Agency (EPA) water quality criteria developed under Section 304(a) of the CWA.

EPA Storm Water Discharge Permitting Regulations

The CWA prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a NPDES permit. With respect to pollutants in storm water discharges, the CWA only requires two sizes of municipalities, large (population 250,000 or above) and medium (population 100,000 to 250,000), certain industrial activities, and certain construction activities to obtain permit coverage. Once the City of Roseville's population exceeds 100,000 people, a NPDES permit would be required to regulate storm water discharges.

The NPDES permit requires the use of Best Management Practices (BMPs). The primary objective of the BMPs is to reduce non-point source pollution into waterways. These practices include structural and source control measures for residential and commercial areas, and BMPs for construction sites. Components of the BMPs include:

- maintenance of structures and roads,
- flood control management,
- comprehensive development plans,
- erosion control ordinances,
- inspection and enforcement procedures,
- educational programs for toxic material and oil control, and
- reduction of pesticide use.

California General Industrial Storm Water Permit

The SWRCB adopted a General Industrial Storm Water Permit which covers specific industries. The general permit requires industrial dischargers to (1) eliminate illicit discharges of storm water to storm water system, (2) develop and implement a storm water pollution prevention plan (SWPPP), and (3) perform monitoring of discharges to storm water systems. The SWPPP should include (1) source identification, (2) practices to reduce pollutants, (3) an assessment of potential pollution sources, (4) a materials inventory, (5) a preventive maintenance program, (6) spill prevention and response procedures, (7) general storm water management practices, (8) employee training, (9) facility inspection, (10) record keeping, and (11) elimination of unpermitted non-storm water discharges to the industrial storm water system.

California General Construction Activity Storm Water Permit

Effective October 1, 1992, general storm water discharge permits are required by the State for storm water discharges associated with construction activities involving the disturbance of five acres or more. Construction on sites of fewer than five acres requires a permit if part of a larger development or land sale. Landowners are responsible for obtaining and complying with the permits, but may delegate specific duties to developers and contractors by mutual consent.

Permit applicants are required to prepare, and retain at the construction site, a Storm Water Pollution Prevention Plan (SWPPP) which describes the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, and non-storm water management controls. Dischargers are also required to inspect construction sites before and after storms to identify storm water discharge from construction activity, and to identify and implement controls where necessary.

4.4.4 IMPACTS

Method of Analysis

Exposure of people or property to flood hazards due to being located in a designated 100-year floodplain has been determined by reviewing existing FIRMs and additional floodplain mapping completed by Nolte and Associates and project engineers (including CH2M Hill), as updated to include the 1995 event.

Impervious surface coverage and the associated potential impacts (e.g. surface water runoff, groundwater recharge and urban water quality) have been described based on information developed by project engineers (CH2M Hill), which has been compared to existing conditions to determine if proposed development could result in an increase in surface water runoff over that which currently exists.

Water quality regulations set by federal and state governments have been used to evaluate potential impacts of the construction and operation of the Proposed Project. Specific groundwater and surface water quality data are expected to be limited; therefore, water quality has been evaluated in general terms based on past and present land uses. The effectiveness of State and federal regulations to mitigate identified impacts has been evaluated.

It should be noted that mitigation technology and environmental regulatory frameworks are subject to change due to new techniques, methods, laws, and regulations. This could alter the way that impacts are assessed and measures are implemented at the time development occurs.

Standards of Significance

For the purpose of this EIR, impacts are considered significant if the Proposed Project could:

- expose people or property to flood hazards by placing them in an area subject to inundation within the 100-year floodplain as defined by FEMA or additional site specific floodplain maps;
- result in increased rate and amount of surface water runoff over pre-development conditions so that existing drainage capacity is exceeded;

- substantially interfere with groundwater recharge and reduce available groundwater supply; or
- substantially degrade surface and/or groundwater quality due to increases in sediments, erosion and urban contaminants generated by construction and/or operation activities.

IMPACT 4.4-1:

Flood flows in the designated 100-year floodplain could be obstructed, exacerbating existing localized flooding

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policies SB-1, SB-2, SB-4, SB-5

Area in the 100-year floodplain has been designated as open space

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Under the Proposed Project, land within the designated 100-year floodplain would remain as open space. No industrial, commercial or other structures would be developed in the 100-year floodplain. The City of Roseville General Plan contains the following policies to reduce risks associated with flooding:

- | | |
|--------------|--|
| Policy SB-1. | Continue to regulate, through land use, zoning and other restrictions, all uses and development in areas subject to potential flooding. |
| Policy SB-2. | Monitor and regularly update City flood studies, modeling and associated land use, zoning and other development regulations. |
| Policy SB-4. | Provide flood warning and forecasting information to community residents to reduce impacts to personal property. |
| Policy SB-5. | Minimize the placement of, and potential for flood damage to, public and emergency facilities, utilities, roadways and other infrastructure. |

These policies restrict land uses and development within the 100-year floodplain to prevent exacerbating flooding conditions, and to limit exposure of people and structures to potential harm and/or damage. As described above, there would be no development within the 100-year floodplain, and thus, this would eliminate the potential for increased flood flows due to obstructions, resulting in a less-than-significant impact.

IMPACT 4.4-2:

Increased impervious surface area would increase the volume and rate of storm water runoff, exacerbating existing on- and off-site flooding

Applicable City

Policies and Regulations:

General Plan Policies SB-1, SB-2, SB-5, SB-6, and SB-8

Action Proposed by Applicant:

Construct detention basins within the project area

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.4-2(a) (Identify adequate detention facility locations), 4.4-2(b) (Contribute fair share fees to regional flood control facilities)

Residual Significance:

Less than significant

Approximately 165 acres of the project area is currently developed with light industrial uses. The remaining approximately 335 acres are undeveloped at present. Implementation of the Proposed Project would increase the amount of impervious surface coverage approximately 280 acres (the open space area, detention basin, and no development area would not be covered), a significant increase over that which currently exists. CH2M Hill estimated that impervious surface coverage under the Proposed Project would be approximately 70 percent. This impervious surface coverage would increase the rate and amount of surface runoff entering Pleasant Grove Creek, the South Branch of Pleasant Grove Creek and their tributaries. In addition, development and grading would alter the existing runoff patterns and conveyance capacities on the site. Increased flows and altered drainage patterns could increase the potential for localized flooding on site and upstream and downstream of the project area.

The Roseville General Plan includes policies that require that individual projects mitigate their contribution of increased surface water flows to minimize the potential for increased on- and off-site flooding. Specifically, Policy SB-6 requires that individual projects provide for on-site detention of runoff to pre-development levels.

Policy SB-6. Require new developments to detain on-site drainage such that the rate of runoff is maintained at pre-development levels.

Policy SB-8. Establish flood control assessment districts or consider other funding mechanisms to mitigate flooding impacts.

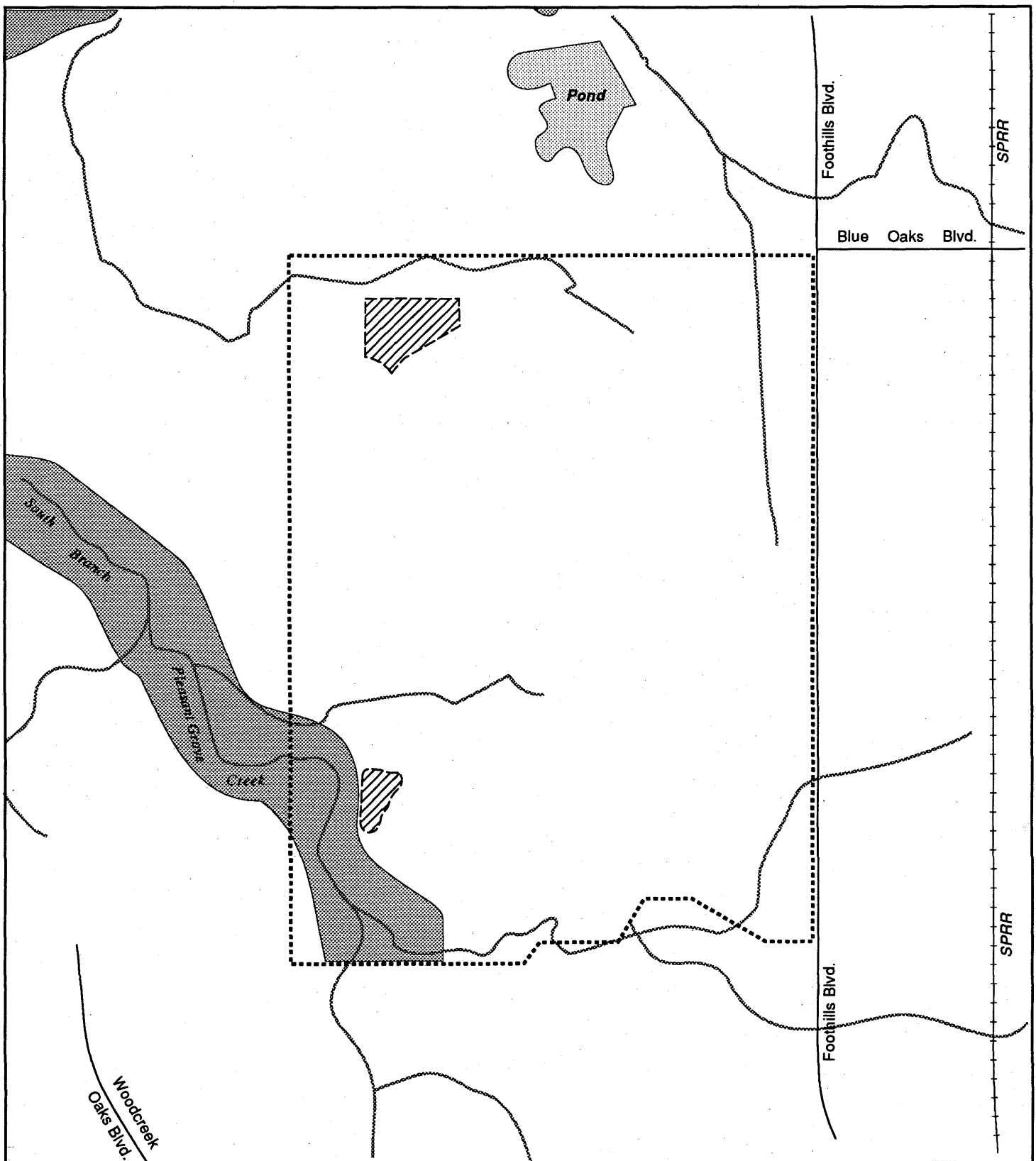
See Impact 4.4-1, above, for policies SB-1 through SB-5.

The Proposed Project includes the development of a drainage system that includes the construction of facilities to detain peak flows. On-site detention basins would potentially be located in the southwest portion of the project area in open space and in the northwest portion of the project area, currently proposed for commercial development. These drainage facilities must be constructed to the City's satisfaction to limit the project's contribution to increased flows. The Proposed Project must also contribute its fair share in mitigation fees to the City's regional flood control projects.

CH2M Hill proposed that individual detention basins of varying size be located in the project area. The detention facilities have been preliminarily sized (9.6 ac-ft for the northwest basin, 6.0 ac-ft for the southwest basin)¹² to detain post-development flows to pre-development levels as a means of mitigating the Proposed Project's contribution to increased creek flows so as to not exacerbate on- and off-site flooding. Although the exact design and location of detention basins in the project area has not been determined, detention basins are preliminarily proposed to be located near the downstream end of each development. Figure 4.4-2 identifies preliminary potential locations within the project area that may be chosen for detention. Further, the proposed detention basins may be constructed in phases. Should Hewlett-Packard develop their upstream properties prior to the construction of the commercial development in the Proposed Project, the northwest detention basin may need to be constructed concurrent with that upstream development. The northwest basin would serve to detain the associated increases in surface water runoff associated with the upstream development and would be sized to accommodate both the upstream development and Proposed Project runoff.

Controlling the rate of runoff from the project site with the use of detention basins is not sufficient to prevent possible increased flood elevations in the downstream portion of Pleasant Grove Creek in Sutter County. Flood conditions in this area are affected more by the total volume of runoff than the rate of runoff. The PCFCD has evaluated various methods of controlling downstream flooding but has determined that regional retention facilities would be prohibitive in cost. Therefore, development fees have been identified to pay for implementation of the flood control strategy. The fees would be used by the City until a regional approach for flood control has been identified. Therefore, the Applicant must contribute its fair share in mitigation fees to the City's regional flood control projects.

With implementation of identified proposed drainage facilities, the payment of development fees to the regional flood control strategy and compliance with General Plan policies, impacts associated with increased surface water flows would be reduced to a less-than-significant level.



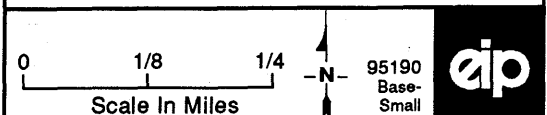
- Hewlett-Packard Master Plan Area
- Roseville City Limits
- Existing and Approved Roads
- Streamcourses/Creeks

-  Plan Area Floodplain
-  Potential Detention Basin Sites

Figure 4.4-2

**Potential Detention Basin Sites
Within The Hewlett-Packard
Master Plan Area**

SOURCE: City of Roseville, *Official Floodplain, Maps and Profiles*, May 1987;
EIP Associates, February 1996.



IMPACT 4.4-3:

Interference with groundwater recharge potential and emergency well could reduce available groundwater supply

Applicable City

Policies and Regulations:

General Plan Policies OC-5, OC-6, and SB-1, SB-2, SB-4 and SB-5

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

As described in the setting discussion, the majority of the soils within the project area are impermeable or underlain by hardpan. In these areas, infiltration is low, thereby limiting groundwater recharge. Groundwater recharge in the project area occurs primarily along the stream channel of South Branch of Pleasant Grove Creek. This area of high groundwater recharge potential has been designated as open space, so there would be no construction of impervious surfaces within this area. Because the Proposed Project does not include construction of impervious surfaces within open space and proposes locating detention ponds in the areas of greatest recharge potential in accordance with the following General Plan policies:

- Policy OC-5. Continue to monitor groundwater resources. Areas where recharge potential is determined to be high shall be considered for designation as open space.
- Policy OC-6. Where feasible, locate stormwater retention ponds in areas where subsoil is suitable for groundwater recharge.

The Proposed Project includes reservation of a site for a future groundwater well. The well, which would be located near the substation site shown in Figure 3-4, would be used only in emergencies. Therefore, it would not have an ongoing impact on groundwater supply.

Implementation of the Proposed Project would result in a less-than-significant impact on groundwater recharge potential and would not result in a reduction in available groundwater supply (See Impact 4.4-1 for additional applicable General Plan policies).

IMPACT 4.4-4:

Decrease in water quality due to increased erosion and sedimentation associated with construction activities.

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policy OC-2

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.4-4 (Implement erosion control plan)

Residual Significance:

Less than significant

Development of the Proposed Project would involve the construction of structures, roadways, parking lots, and infrastructure, which would require grading, excavation, and other construction-related activities that could cause soil erosion at an accelerated rate during storm events. Sediment from erosion could have adverse effects on Pleasant Grove Creek and the South Branch of Pleasant Grove Creek water quality, such as increased turbidity, which could result in adverse impacts on fish and wildlife habitat, reduced pump life due to abrasion, increased municipal/industrial water treatment costs for turbidity removal, and impaired recreation and aesthetic values.

Another potential source of water quality degradation during construction activities is heavy machinery and other construction equipment. Construction equipment spills could result in the release of polluting constituents, such as heavy metals, oil, grease, and other petroleum hydrocarbons to the South Branch of Pleasant Grove Creek and other onsite tributaries.

Implementation of the Proposed Project would disturb more than five acres of land; therefore, contractors would be required by state law to obtain and comply with the State General Construction Activity Storm Water Permit. Compliance with the Permit would involve the implementation of Best Management Practices (BMPs). BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution (e.g., straw bales, dikes, silt fences, sediment traps, or similar methods).

The City of Roseville General Plan Policy OC-2 also requires that projects:

Policy OC-2. Implement erosion control and topsoil conservation measures to limit sediments within water courses.

In addition, Mitigation Measure 4.4-4 would ensure compliance with State General Permit requirements by requiring an erosion control plan, including implementation of BMPs. Implementation of General Plan policies, State permit requirements and Mitigation Measure 4.4-4 would reduce water quality impacts associated with construction activities to a less-than-significant level.

IMPACT 4.4-5:**Decrease in water quality associated with increased urbanization**

Applicable City

Policies and Regulations:

General Plan Policies OC-1 and OC-3

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The primary sources of storm water pollution from urban development include roadways, automobiles, landscaping, industrial activities, non-storm water connections to the drainage system, accidental spills and illegal dumping. Proposed development in the project area includes commercial, light industrial and open space uses. It is anticipated that runoff from the project area would be typical of urban runoff water quality for the identified uses. Runoff from commercial and industrial uses (including roadway and parking lot areas) generally contains levels of oil, grease, and heavy metals. Runoff from landscaped areas could contain high concentrations of nutrients, e.g., fertilizers and pesticides. Open space uses would not be expected to contribute high levels of urban contaminants because they would remain in a relatively undeveloped state (similar to pre-development conditions).

The reduction of storm water discharge pollutants to the maximum extent practicable (MEP) through the use of BMPs is the primary objective of the water quality regulations, including the municipal storm water permit program, and the Basin Plan as described in the Setting. Implementation of BMPs would help meet any storm water discharge water quality requirements imposed on the City in the future. The Proposed Project does include the incorporation of BMPs, including use of drainage swales (that incorporate settling basins, rock energy dissipaters and biological treatment), grass swales, and detention basins to remove urban contaminants before the water flows into receiving waters.

The Proposed Project includes Light Industrial land uses. Light Industrial uses could include facilities and operations identified for coverage under the General Industrial Storm Water Permit (e.g., vehicle maintenance facilities). The general permit requires industrial dischargers to eliminate illicit discharges to storm drains, develop and implement a SWPPP, and perform

monitoring of discharges to storm water systems. The SWPPP should include the following items: (1) source identification, (2) practices to reduce pollutants, (3) an assessment of potential pollution sources, (4) a materials inventory, (5) a preventive maintenance program, (6) spill prevention and response procedures, (7) general storm water management practices, (8) employee training, (9) facility inspection, (10) record keeping, and (11) elimination of unpermitted non-storm water discharges to the industrial storm water system.

In addition, the City of Roseville General Plan includes the following policies:

- Policy OC-1. Utilize cost-effective urban run-off controls, including Best Management Practices, to limit urban pollutants from entering the water courses.
- Policy OC-3. Ensure a buffer area between waterways and urban development to protect water quality and riparian areas.

These policies require that urban runoff controls, including BMPs, be implemented to reduce water quality impacts associated with urban development. Implementation of these policies and compliance with State General Permit requirements, including implementation of BMPs, would reduce water quality impacts associated with urban development to a less-than-significant level.

4.4.5 MITIGATION MEASURES

4.4-2 MINIMIZE RUNOFF

Mitigation Measure 4.4-2(a): Identify adequate detention facilities locations.

Mitigation Measure 4.4-2(b): Contribute fair share fees to regional flood control facilities.

The project proposes the construction and implementation of two detention basins to reduce increased flows due to development, and limit on- and off-site increases in flooding.

Mitigation Measure 4.4-2(a) requires the landowners to prepare a plan for on-site detention prior to project approval. The plan for detention facilities would be a part of the Master Drainage Plan and must identify specific locations, capacity, and feasibility of all detention facilities required to maintain post-development peak flows at pre-development levels.

The Proposed Project must construct on-site drainage facilities to the City's satisfaction to limit the project's contribution to increased flows and contribute its fair share in mitigation fees to the City's regional flood control projects (Mitigation Measure 4.4-2(b)).

4.4-4 MINIMIZE EROSION

Mitigation Measure 4.4-4: Implement erosion control plan.

Mitigation Measure 4.4-4 requires that for any construction activities that would disturb fewer than five acres of land, all contractors must prepare and retain on site an erosion control plan that includes a description of the construction site, erosion and sediment controls to be used, means of waste disposal, control of post-construction sediment, erosion control measures and maintenance responsibilities, and non-storm water management controls. The State General Permit requires implementation of BMPs. BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution (e.g., straw bales, dikes, silt fences, sediment traps, or similar methods). These measures would reduce water quality impacts associated with construction activities to a less-than-significant level.

ENDNOTES

1. City of Roseville, *Comprehensive Land Use Element Update Project Draft Environmental Impact Report*, February 1995, page 4.4-2.
2. City of Roseville, *Draft West Roseville Baseline Studies*, September 1994, page 6-5.
3. City of Roseville, *Draft West Roseville Baseline Studies*, September 1994, pages 6-5 through 6-8.
4. City of Roseville, *Comprehensive Land Use Update Project Draft Environmental Impact Report*, February 1995, page 4.4-3.
5. Gaylord, Garth, Associate Civil Engineer, City of Roseville Public Works Department, personal communication, June 27, 1995.
6. City of Roseville, *Comprehensive Land Use Element Update Project Draft Environmental Impact Report*, February 1995, page 4.4-3.
7. Stewart, Neila, Environmental Coordinator, City of Roseville Community Development Department, personal communication, June 12, 1995.
8. City of Roseville, *Comprehensive Land Use Element Update Project Draft Environmental Impact Report*, page 4.4-4, February 1995.
9. City of Roseville, *Draft West Roseville Baseline Studies*, September 1994, page 6-9.
10. City of Roseville, *Draft West Roseville Baseline Studies*, September 1994, page 6-9.
11. City of Roseville, *Del Webb Specific Plan Draft Environmental Impact Report*, September 1993, page 14-8.
12. Walling, Pamela, CH2M Hill, Project Engineer, personal communication, November 22, 1995.

4.5 BIOLOGICAL RESOURCES

4.5 BIOLOGICAL RESOURCES

4.5.1 INTRODUCTION

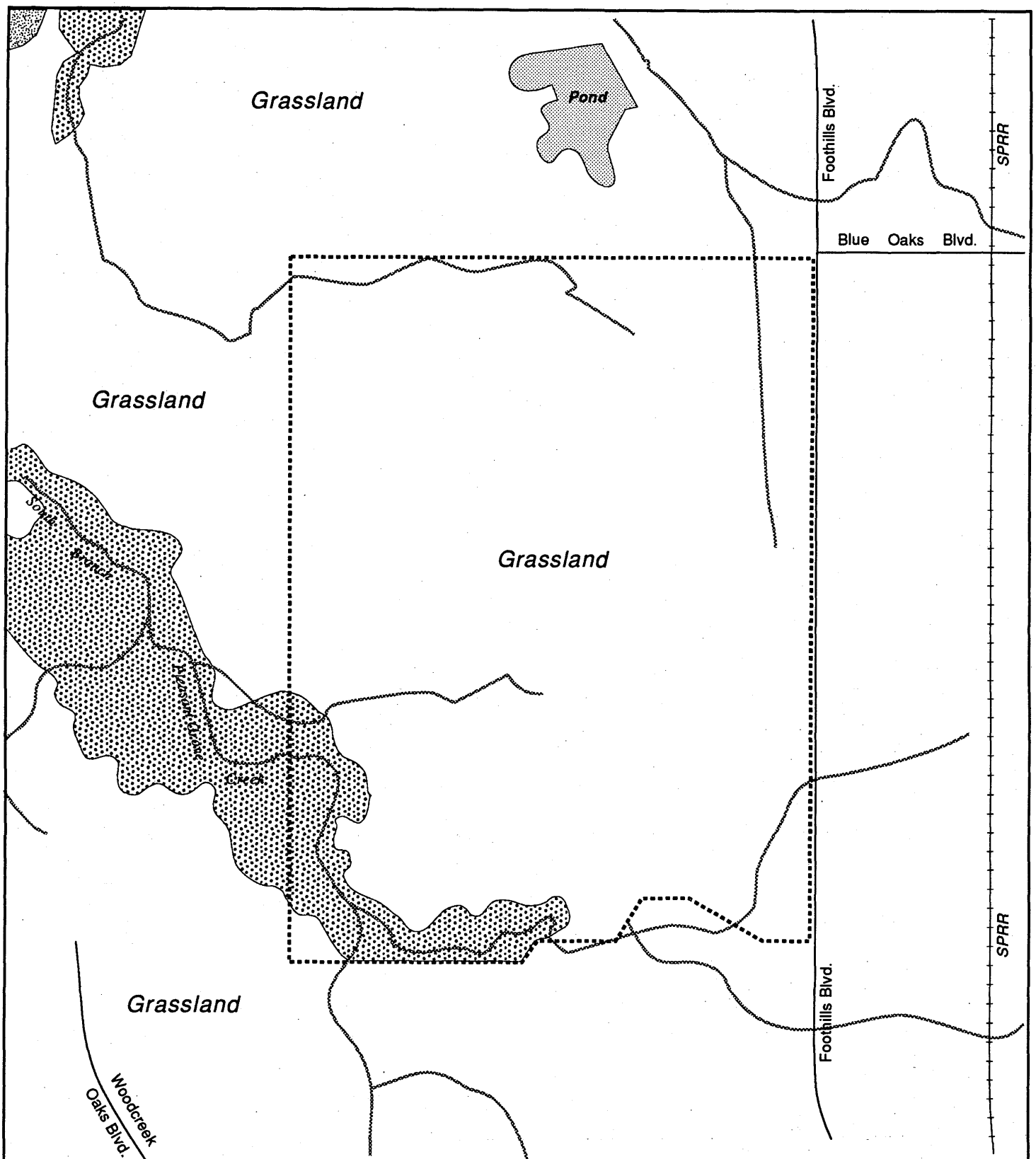
Implementation of the Proposed Project would change the biologic environment in the project area. The undeveloped project area is primarily annual grassland which is a relatively common habitat in the region, and contains 5.12 acres of wetlands and waters of the U.S. and 22.2 acres of oak woodlands. The Applicant proposes to preserve the oak woodland habitat and a portion of the wetland area in a 45.9 acre open space area. Substantial grassland habitat would be converted to urban development.

The environmental setting was based on a review of environmental documents for the general area¹ and biological studies of the project area². In addition, a brief reconnaissance-level survey was performed of the project area. Finally, consultations with staff of natural resource regulatory agencies were conducted. Special-status species were determined from numerous previous surveys of the project area and nearby lands, the California Natural Diversity Database, California Native Plant Society Electronic Inventory, as well as documents in EIP Associates' files.

The project area is evaluated with regard to the presence and location of biological resources before and after implementation of the Proposed Project. Areas set aside for mitigation or open space are evaluated for their potential to adequately preserve or maintain the most significant biological resource values of the project area. The Impacts section describes resources that would potentially be adversely affected as a result of project implementation, and recommendations are made for additional mitigation to reduce the magnitude of, or eliminate the adverse effects.

4.5.2 ENVIRONMENTAL SETTING

The project area is on the eastern edge of the Great Central Valley province, on the western slopes of the foothills of the Sierra Nevada. Dominant habitats comprise annual grassland, blue oak/mixed oak woodland, and wetlands (see Figure 4.5-1). Jurisdictional wetlands in the project vicinity include the South Branch of Pleasant Grove Creek (SBPGC), a runoff pond, and seasonal wetlands and vernal pools. The estimated area of each habitat is listed in Table 4.5-1, and described below.



- Hewlett-Packard Master Plan Area
- Roseville City Limits
- Existing and Approved Roads

- ~~~~~ Streamcourses/Creeks
- ▨ Mixed Oak Woodland
- ▤ Blue Oak Woodland

Figure 4.5-1

Habitats In Project Area And Vicinity

SOURCE: Wade Associates, North Roseville Specific Plan Draft, November 10, 1994; EIP Associates, February 1996.

0 1/8 1/4
Scale In Miles

N
95190
Base-
Small

eip

TABLE 4.5-1
EXISTING HABITATS IN THE PROJECT AREA

Habitat	Estimated Acreage
Annual grassland	273.22
Oak Woodland	22.20
Vernal Pools	1.82
Seasonal wetlands	0.36
Perennial drainages	1.01
Intermittent Creek	0.85
Drainage Swale	0.24
Emergent marsh	0.30
Urbanized ¹	200.00
¹ Urbanized land within the project area is limited to the existing Hewlett-Packard development on Foothills Blvd.	
SOURCE: Sugnet & Associates, 1995	

Terrestrial Habitats

Annual Grassland

Annual grassland habitat is characterized by annual grasses and forbs. Dominant species in the project area include hairgrass (*Aira caryophylla*), soft chess (*Bromus hordeaceus*), rip-gut brome (*Bromus diandrus*), wild oat (*Avena fatua*), Mediterranean barley (*Hordeum marinum*), perennial ryegrass (*Lolium perenne*), medusahead grass (*Taeniatherum caput-medusae*), red stem filaree (*Erodium botrys*), true clover (*Trifolium* spp.), and bur clover (*Medicago polymorpha*). Other common species include fiddle-neck (*Amsinckia menziesii*), blue dicks (*Dichelostemma capitatum*), spikeweed (*Hemizonia fitchii*), and vinegar weed (*Trichostema lanceolatum*).

Many wildlife species use annual grassland habitat for all or part of their life cycle, but some require special habitat features, such as cliffs, caves, ponds, or habitats with woody plants, for breeding, resting, and escape cover. Reptiles include western fence lizard (*Sceloporus occidentalis*) and yellow-bellied racer (*Coluber constrictor*). Mammals typically found in annual grassland habitat include California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), black-tailed hare (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), and coyote (*Canis latrans*). Typical birds include western meadowlark (*Sturnella neglecta*), western kingbird (*Tyrannus verticalis*), and

Brewer's blackbird (*Euphagus cyanocephalus*). Rodent populations provide foraging opportunities for birds-of-prey such as black-shouldered kite (*Elanus leucurus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), and great horned owl (*Bubo virginianus*).

Several special-status species use grassland during at least part of their life cycles. Tiger salamanders and western spadefoot breed in vernal pools, but retreat to uplands near vernal pools (generally grasslands) for the remainder of the year. Northern harriers forage and sometimes nest in grassland habitat.

Blue Oak Woodland

Blue oak woodland is dominated by blue oak (*Quercus douglasii*), but includes small amounts of interior live oak (*Quercus wislizenii*), and some valley oak (*Q. lobata*). Blue oak woodland is distinguished from mixed oak woodland, in that the former consists of approximately 85% or more blue oak, and the latter is more or less evenly mixed among the three species. Blue oaks occur in a continuous strip along the South Branch of Pleasant Grove Creek, and as single trees in an oak savannah setting. The understory of blue oak woodland is typically annual grassland, including wild oat, soft brome, Mediterranean barley, blue dicks and filaree.

The complex structure, abundance of food, shade and nesting sites make oak woodlands attractive to mammals such as Brazilian free-tailed bat (*Tadarida brasiliensis*) and western gray squirrel (*Sciurus griseus*), as well as birds such as acorn and Nuttall's woodpeckers (*Melanerpes formicivorus*, *Picoides nuttalli*), scrub jays (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), and many warblers and flycatchers.

Cavities in oak trees are important nesting sites for American kestrel (*Falco sparverius*), tree swallows (*Tachycineta bicolor*), plain titmouse (*Parus inornatus*), wrens, and western bluebirds (*Sialia mexicana*), and provide nesting platforms for red-tailed hawks, white tailed kites or occasional Cooper's hawks (*Accipiter cooperii*).

Large oak trees in close proximity to grassland foraging areas and water can be attractive to nesting Swainson's hawks (*Buteo swainsoni*); although, there are no confirmed records of this species nesting in the project area. Great blue herons and egrets are known to roost in oak woodlands where the trees occur in close association with water.

Wetlands

Intermittent Creeks

The project area is crossed by the South Branch of Pleasant Grove Creek, which originates east of the project area, and joins the Sacramento River northwest of the City of Sacramento. Historically, the creek flowed with winter rainfall, and was probably dry or nearly so during the summer. With additional runoff from urban and industrial sources, the creek has a tendency to be more perennial, but may occasionally be dry or run below the surface. It frequently exists as a series of small pools intermittently connected by small flowing channels.

The creek is not known to contain anadromous fishes³, but supports mosquitofish, and potentially some warm water fish species. Mallards (*Anas platyrhynchos*), wood duck (*Aix sponsa*), great egret (*Casmerodius albus*), great blue heron (*Ardea herodias*), and belted kingfisher (*Ceryle alcyon*) use these areas to feed on algae, crayfish, pacific treefrogs (*Pseudacris regilla*), western toad (*Bufo boreas*) and bullfrogs (*Rana catesbeiana*). Mammals such as raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) could also forage there.

In addition to the branches of Pleasant Grove Creek, there are small swales and drainages throughout the project area that could carry water briefly during winter rainfall. These areas are not creeks per se, but soils beneath them could be saturated for a longer period than adjacent upland areas, and thus support a unique floral community. They are distinct from vernal pools, but fall within the US Army Corps of Engineers (USCOE) definition of jurisdictional wetlands. Wildlife uses of these areas are similar to those of annual grassland.

Marshes and Ponds

A small marsh is present as a result of artificial conditions in the project area. North of the Hewlett-Packard facility, runoff inundates a short swale during the rainy season, and saturated soils can persist year-round. Vegetation in this area consists of cattails (*Typha* sp.), smartweed (*Polygonum* sp.), and willow-herb (*Epilobium* sp.)⁴ surrounded by an otherwise dry annual grassland area.

Vernal Pools and Seasonal Wetlands

Vernal pools are ephemeral wetlands that form in shallow depressions underlain by a substrate near the surface that restricts the percolation of water. These depressions fill with rainwater during the fall and winter and can remain inundated until spring or early summer, sometimes filling and emptying numerous times during the rainy season.⁵ Vernal pools are generally recognized by a flowering community dominated by characteristic wetland plants. Wetland species within the project area include winged water-starwort (*Callitriche marginata*), annual hairgrass (*Deschampsia danthonioides*), Solano downingia (*Downingia ornatissima*), Vasey's coyote thistle (*Eryngium vaseyi*), bractless hedge-hyssop (*Gratiola ebracteata*), hyssop loosestrife (*Lythrum hyssopifolium*), slender popcorn flower (*Plagiobothrys stipitatus*), spine-fruit butter-cup (*Ranunculus bonariensis*), and purslane speedwell (*Veronica peregrina*)⁶.

Seasonal wetlands are distinguished from vernal pools in that they contain a greater abundance of facultative and grassy plant species, and may not be inundated for as long as vernal pools. The distinction between the two types is often unclear; the final determination of the type of wetland is often dependent upon the verification of the USCOE. The extent to which special-status plant and animal species can use these habitats is variable, but, conservatively, any species present in vernal pools could be present in seasonal wetlands.

Wetland Delineations and Permits

Wetland delineations were conducted for a 90-acre portion of the project area during April 1994, and a verification letter was provided by the Corps on June 15, 1995. The letter from the Corps authorizes Hewlett-Packard Company under Nationwide Permit Number 26, provided they meet

the terms and conditions of the letter. Terms and conditions include surveys for endangered species, creation of a 44-acre wetland preserve, 1.53 acres of vernal pools and 1.32 acres of seasonal/emergent marsh to mitigate for impacts to wetlands on the 90-acre site (Table 4.5-2). Further terms and conditions discuss preparation of a final mitigation plan, monitoring reports, approval by various agencies and obtaining a State Water Quality Certification.¹

As the Proposed Project now includes substantially greater area (300 acres), the Pre-discharge Notification (PDN) of the original project of 90-acres must be updated.² The details of the preservation and compensation plan are expected to be similar to the existing plan, but have not been submitted or approved at this time.

Special-Status Species

For the purposes of this section, special-status species include those that are listed as rare, threatened, or endangered by the California Department of Fish and Game (CDFG) or the U.S. Fish and Wildlife Service; most species that are candidates for either state or federal listing; species designated as "fully protected" or "species of special concern" by CDFG; and some other species that are tracked by the California Natural Diversity Data Base or California Native Plant Society, but do not fall into any of the categories cited above. Some plants have been designated "rare" by CDFG, but most species are categorized by the California Native Plants Society (CNPS). CNPS is not a public agency, but the method by which CNPS confers a "rare" status on plants has been accepted in the past by CDFG to consider most "CNPS 1B" plants as "rare" for purposes of the Native Plant Protection Act.

Only species that are listed as threatened or endangered require mitigation under the State and Federal Endangered Species Acts. However, other special-status species are considered both as indicators of overall diversity and ecological conditions, and because they can be considered "rare" under the definition presented in Section 15380 of the CEQA Guidelines.

Plants

No special-status plant species are known to occur in the project area. Special-status species that could occur in the vicinity of the project area but have not been observed, appear in Table D-1, in Appendix D. Several federal or State-listed plant species potentially occur within the project area; although, surveys conducted during April and May 1994 detected none.⁷ State and federal listed species that could occur in the project area are briefly described below.

Big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*). Status: CNPS 1B. Big-scale balsamroot can be found in flower March through June. This composite occurs in the Central Valley and ranges to the San Francisco Bay Area on dry slopes and valley grasslands. Suitable habitat is present on project area.

Hispid bird's beak (*Cordylanthus mollis* var. *hispidus*). Status: Federal C2, CNPS 1B. Hispid bird's beak inhabits alkaline meadows and playas, blooming June through September. It is known from Solano, Merced, and Kern Counties.⁸ It is unlikely that suitable habitat occurs within the project area.⁹

TABLE 4.5-2 STATUS OF WETLAND DELINEATION AND PERMIT PROCESSES IN PROPOSED PROJECT AREA			
Total Area (acres)	Wetland Area (acres)	Comments	Date Wetland Delineation Verified
	Vernal pools 1.82 Seasonal wetland 0.36 Drainage swales 0.24 Riparian scrub 0.54 Seasonal emergent Marsh 0.30 Perennial drainage 1.01 Intermit. drainage 0.85	Preparing Preservation and Compensation Project	March 13, 1995
Total 404.5	5.12 acres		
SOURCE: Sugnet & Associates, 1994 and 1995.			

Dwarf downingia (*Downingia pusilla*). Status: Federal C2, CNPS 1B. The dwarf downingia grows in vernal pools and is known from the San Francisco Bay Area, Central Valley and possibly elsewhere. Flowering occurs March through May. Habitat suitable for dwarf downingia occurs within the project area.

Boggs Lake Hedge hyssop (*Gratiola heterosepala*). Status: Federal 3C, State-listed endangered, CNPS 1B. *Gratiola heterosepala* can be found in vernal pools and on lake margins. Blooming period is from April through June. It occurs in the Sacramento Valley, the Sierra foothills, and ranges to the Modoc Plateau. Suitable habitat occurs in the project area.

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*). Status: Federal C1, CNPS 1B. Ahart's dwarf rush grows in vernal pools and is known from only five occurrences in Butte and Calaveras Counties. It flowers from March through May. There is suitable habitat in the project area for this plant.

Legenere (*Legenere limosa*). Status: Federal C2, CNPS 1B. Legenere flowers May through June. Legenere typically occurs in deep seasonal wetlands, such as vernal pools, seasonal swales, and ephemeral drainages that contain water for long periods during spring. Under these wet conditions, legenere forms dense mats. Legenere has become restricted in distribution as a result of habitat conversion and associated disturbance (e.g. degradation of wetland hydrology through plowing, grading, or grazing). Legenere is known to occur sporadically from Red Bluff in the north to Merced County in the south. Suitable habitat is present in the project area.

Pincushion navarettia (*Navarettia myersii*). Status: CNPS 1B. Pincushion navarettia inhabits vernal pools and flowers in May. There are four known occurrences¹⁰, which are from Sacramento, Amador, and Merced Counties. Suitable habitat occurs in the project area to find this plant.

Sacramento orcutt grass (*Orcuttia viscida*). Status: Federal-proposed endangered, State-listed endangered, CNPS 1B. Sacramento County has seven known locations of this orcutt grass. It blooms May through June in vernal pools and the project area has suitable habitat for this plant.

Slender orcutt grass (*Orcuttia tenuis*). Status: Federal-proposed threatened, State-listed endangered, CNPS 1B. Slender orcutt grass grows in vernal pools and flowers from May through July. Suitable habitat exists in the project area for this plant.

Sanford's arrowhead (*Sagittaria sanfordii*). Status: Federal 2 and CNPS 1B. Sanford's arrowhead is a tuberous, perennial herb found in fresh emergent wetlands. It may be found blooming May-August in marshes and swamps throughout the Central Valley and North Coast Range (CNPS). Potential habitat exists within the creek and marshes in the project area.

Threatened and Endangered Animals

Special-status animal species that could occur in the project area are shown in Table 4.5-3. Of these, the only species with federal or State-listed status are the vernal pool fairy shrimp, valley elderberry beetle, and Swainson's hawk. Vernal pool fairy shrimp and Swainson's hawk are known to inhabit the project vicinity.

Invertebrates

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*). Status: Federal threatened. Fairy shrimp are small (11 to 27 mm) crustaceans adapted to survive the annual flooding and drying of vernal pools. They mature in about two weeks, breed, and produce eggs that are dropped to the silty bottom of the pool. As the vernal pool dries, the adults die. The "resting" eggs are protected by thick outer coverings that resist cold, heat, and desiccation during the summer months.

The US Fish and Wildlife Service (USFWS) determined the vernal pool fairy shrimp to be threatened under the Federal Endangered Species Act on September 19, 1994 (59 FR 48136). Vernal pool fairy shrimp occur commonly in vernal pools in the Roseville area, and have been found in both natural and constructed vernal pools in the Project vicinity.¹¹

Valley Elderberry Beetle (*Desmocerus californicus dimorphus*). Status: Federal threatened. The valley elderberry beetle (VELB) is listed as a threatened species with critical habitat designated in parts of Solano, Yolo, and Sacramento counties. It occurs at very low density, over a wide geographic area. The beetle feeds and reproduces on an obligate host, the elderberry shrub (*Sambucus spp.*). Since its recognition as a threatened species in 1980, its geographic range has been considerably expanded as biologists have discovered new populations. Survey guidelines indicate that the beetle can occur nearly anywhere that elderberry plants are found. No elderberry shrubs have been reported in the project area.

TABLE 4.5-3

SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING IN THE PROJECT AREA

Common Name	Scientific Name ¹	Status ² (Fed/CA/CNPS)	Season ³	Primary Habitat ⁴	Present on Site ⁵	Comments
INVERTEBRATES						
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T/--	Resident	Vernal pool	S	Occurs in vernal pools and swales
BIRDS						
White-tailed kite	<i>Elanus leucurus</i>	(Nesting)	Resident	Woodland/grassland/marshes	O	Forages in grasslands
Northern harrier	<i>Circus cyaneus</i>	--/CSC	Resident	Nests in freshwater marsh; forages in grasslands	O	Forages in grasslands
Cooper's hawk	<i>Accipiter cooperi</i>	--/CSC (Nesting)	Resident	Woodland habitats	O	Seen in area, no nests found
Swainson's hawk	<i>Buteo swainsoni</i>	C2/T	Summer	Nests in riparian trees; forages in open fields	O	Seen in area, no nests found
Loggerhead shrike	<i>Lanius ludovicianus</i>	CSC	Resident	Various open habitats	O	Present in area

NOTES:

¹Scientific names are based on the following sources: AOU 1986, Jennings 1983, Hickman 1993, Zeiner *et al.* 1990.²Status = Status of species relative to the Federal and California State Endangered Species Acts and Fish and Game Code.

Fed = Federal status.

E = Federally listed as endangered.

T = Federally listed as threatened.

PE = Proposed endangered.

PT = Proposed threatened.

C1 = Category 1 comprises taxa for which the USFWS currently has substantial information on hand to support the biological appropriateness of proposing to list as endangered or threatened. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.

C2 = Category 2 comprises taxa for which information now in possession of the USFWS indicates that proposing to list as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat are not currently available to support proposed rules. Further biological Research and field study may be needed to ascertain the status of taxa in this category, and it is likely that many will be found not to warrant listing.

C3C = Subcategory 3C comprises taxa that are now considered to be more abundant and/or widespread than previously thought. Should new information suggest that any such taxon is experiencing a numerical or distributional decline, or is under a substantial threat, it may be considered for transfer to Category 1 or 2.

TABLE 4.5-3

SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING IN THE PROJECT AREA

NOTES (Continued):

- CA = California status.
 E = Species whose continued existence in California is jeopardized.
 T = Species that although not presently threatened in California with extinction, is likely to become endangered in the foreseeable future.
 CSC = California Department of Fish and Game "Species of Special Concern". Species with declining populations in California.
 FP = Fully protected against take pursuant to the Fish and Game Code.
 -- = No California or federal status.
 CNPS = California Native Plant Society Listing (does not apply to wildlife species).
 1B = Plants, rare, threatened or endangered in California and elsewhere and are rare throughout their range. All of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection) of the California Department of Bald Eagle Protection Act and Fish and Game Code Sec. 3503.3 and are eligible for state listing.
 3 = Plants about which we need more information-a review list. List 3 is an assemblage of taxa that have been transferred from other lists or that have been suggested for consideration. Information that would allow an assignment to one of the other lists or to reject them is lacking.
 4 = Plants of limited distribution-a watch list. Plants in this category are of limited distribution in California and their vulnerability or susceptibility to threat appears low at this time. However, they are uncommon enough that their status should be monitored regularly.
 3Season = Blooming period for plants. Season of use for animals.
 4Primary habitat = Most likely habitat association.
 3Present on site:

- O = Observed onsite.
 R = Recorded onsite.
 S = Suitable habitat onsite.
 U = Unsuitable habitat onsite.

SOURCE: California Dept. of Fish and Game, *California Natural Diversity Database*, 1995; California Native Plant Society, *Electronic Inventory of Rare and Endangered Vascular Plants of California*, March 1994.

Birds

Swainson's Hawk (*Buteo swainsoni*). Status: State threatened. Swainson's hawks are considered threatened because of the sharp reduction in riparian woodlands and forests experienced over the state in the last 100 years, and the consequent reduction in Swainson's hawks which use riparian woodlands for nesting. Swainson's hawks forage over grasslands, and in agricultural fields, especially after disking or harvest. Swainson's hawks can forage as much as 20 miles from the nest, and observations of Swainson hawks in the project vicinity are not uncommon, but the nearest known nest site for Swainson's hawks is approximately 15 miles west of the project.

Other Special Status Animals

The following species are not listed as threatened or endangered species by the federal or state governments, but require analysis because they are fully-protected species under state or federal laws or regulations, or because they are species for which there is evidence that they could meet the definition of rare contained in Section 15380 of the CEQA Guidelines. Candidate species (those which are being evaluated for eligibility for listing under state or federal endangered species laws) are included because, due to their status, they could be elevated to state or federal endangered or threatened status prior to completion of the development of the Proposed Project.

White-tailed Kite (*Elanus leucurus*) Status: "fully protected" raptor in California. White-tailed kites feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. They breed between February and October. Unlike other raptors, kites often roost, and occasionally nest, communally; therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds.

Cooper's Hawk (*Accipiter cooperii*) Status: State Species of Special Concern. Cooper's hawks breed between March and August. Usually they nest and forage in woodlands or riparian vegetation near water. Suitable habitat for this species exists along the riparian corridors in the project area.

Mountain Plover (*Charadrius montanus*) and Long-billed curlew (*Numenius americanus*) Status: State Species of Special Concern. The plover is federal category 2 and the curlew is category 3. These species occur as winter migrants in the region, foraging on insects in grasslands, pastures and farm areas. Suitable foraging habitat for these species occurs in the project area; although, none were reported from field surveys.¹²

Burrowing Owl (*Athene cunicularia*) Status: State Species of Special Concern and a "fully-protected" raptor. It is also federally protected under the Migratory Bird Treaty Act (Federal Law 16 USC 703-711). Burrowing owls forage in open habitats for insects, mice, and small birds. They breed between March and August and frequently nest in ground squirrel burrows in berms along paved roads, dirt roads, and channels, and in ruderal vegetation or annual grassland. This species has not been recorded in the project area. It is unlikely to occur.

Long-eared Owl (*Asio otus*) Status: State Species of Special Concern, long eared owls can forage within the region during winter. Long-eared owls forage in open habitats for small mammals and birds. They roost in dense thickets within riparian vegetation. This species has not been observed within the project area, but suitable habitat exists within patches of riparian habitat.

Northern Harrier (*Circus cyaneus*) Status: State Species of Special Concern. Northern harriers breed between April and September and nest on the ground in shrubby vegetation. They hunt in annual grasslands, pastures, fresh emergent wetlands, and some croplands. Suitable foraging and potential nesting habitat for this species occurs in the project area.

Sharp-Shinned Hawk (*Accipiter striatus*) Status: State Species of Special Concern, can forage within the region during the winter. Within the general region, Sharp-shinned hawks forage in open habitats and roost in woodlands. This species has not been observed within the project area. However, potential foraging and roosting habitat for this species exists throughout the riparian and grassland vegetation of the project area.

Short-Eared Owl (*Asio flammeus*) Status: State Species of Special Concern. Short-eared owls primarily forage for small mammals in open habitats. They breed between March and July and nest on the ground. This species has not been observed within the project area. However, potential habitat for this species exists in grassland in the project area.

Loggerhead shrike (*Lanius ludovicianus*) Status: State Species of Special Concern. Loggerhead shrikes occur in woodland and chaparral habitats throughout California. They feed primarily on insects or small rodents, which they hunt from grasslands adjacent to woodland areas. The shrike is also called "butcher bird" for its habit of impaling its prey on cactus thorns or barbed wire fences. Suitable foraging and nesting habitat occurs in the project area.

Tiger salamander (*Ambystoma californiense*) Status: Federal C1, State Species of Special Concern. Tiger salamanders occur in the Central Valley and adjacent foothills.¹³ They breed in vernal pools and seasonal wetlands, and spend summer months in abandoned ground squirrel burrows in upland habitats. The nearest known population occurs near the northern border of Yolo County.¹⁴ Potential habitat occurs in the project area, but none were detected during field surveys.¹⁵

Western Spadefoot Toad (*Scaphiopus hammondi*) Status: Federal C2, State Species of Special Concern. Western spadefoot breed and lay eggs in vernal pools and seasonal wetlands throughout the Central Valley. After pools dry, the adults move into burrows in adjacent grassland and woodland areas. Potential habitat occurs in the project area, but none were detected during field surveys.¹⁶

Northwestern Pond Turtle (*Clemmys marmorata*) Status: Federal 3C, State Species of Special Concern. Western pond turtles occur in ponds and slow streams throughout western California, and requires a reliable source of water. Most aquatic habitat in the project area is reported to be intermittent, which would be unsuitable. However, the artificial ponds are potential habitat in the project area. None was detected during field surveys.¹⁷

4.5.3 REGULATORY SETTING

Federal Waterway and Wetland Regulations

Section 404 of the Clean Water Act (1972) prohibits filling jurisdictional waters of the U.S. without a permit issued by the USCOE under a Memorandum of Understanding with the Environmental Protection Agency. Most waters of the United States are defined by list (e.g., lakes, ponds, rivers) and the limits of jurisdiction determined at the ordinary high water level. Fills may be permitted by the issuance of an Individual Permit. Fills of less than one acre can be permitted without notification if they comply with the provisions of one or more general permits. The EPA Section 404 (b) (1) guidelines for the evaluation of mitigation and compensation proposals include the stipulation that avoidance of fills is the most preferred mitigation, followed by on-site compensation, then off-site compensation. Compensation ratios may be 1:1 or higher.

U.S. Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) implements the Migratory Bird Treaty Act (16 USC Section 703-711), the Bald and Golden Eagle Protection Act (16 USC Section 668), and the Federal Endangered Species Act (FESA, 16 USC § 153 *et seq*). Projects that would result in adverse affects on any federally listed threatened or endangered species are required to consult with and mitigate through consultation with the USFWS. This consultation can be pursuant to either Section 7 or Section 10 of the Endangered Species Act, depending on the magnitude of involvement by the federal government. The objective of consultation under the Endangered Species Act is to determine whether the project would jeopardize a protected species, and what mitigation measures would be required to avoid jeopardizing the species.

"Take" under federal definition currently includes actions that involve harming or harassing a protected species, or "such acts as may include significant habitat modification or degradation" (50 CFR §17.3). Species that are identified as candidates for Category 1 or 2 status do not have the full protection of Endangered Species Act; however, the USFWS advises project applicants that a Category 1 or 2 species could be elevated to listed status at any time. For this reason, federal candidate species are addressed with special consideration in this document.

California Department of Fish and Game

The California Department of Fish and Game (CDFG) derives its authority from the Fish and Game Code of California. Species listed under the California Endangered Species Act (Fish and Game Code Section 2050 *et seq*) cannot be "taken" without adequate mitigation and compensation. At present, "take" means to hunt, pursue, catch, capture, or kill, or to attempt to do so. It should be noted that at this time, based on the most recent findings of the California Attorney General's Office, "take" does not prohibit indirect harm by way of habitat modification.¹⁸ Typically, CDFG implements endangered species protection by entering management agreements ("Section 2081 management agreements") with project proponents.

Fish and Game Code Section 3511 describes bird species, primarily raptors, which are "fully protected." Fully protected birds may not be taken or possessed except under specific permit. Section 3503.5 of the code protects all birds-of prey and their eggs and nests.

Species of Special Concern (CSC) is a category conferred by CDFG for those species that are considered indicators of regional habitat changes, or are considered to be potential future protected species. Species of Special Concern do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

California Public Resources Code Section 15380, defines "rare" in a broader sense than the definitions of threatened, endangered or species of special concern. Guidelines issued by the Director of CDFG state that plants in CNPS 1B fulfill the criteria of "rare" under PRC 15380, and should be included in environmental impact reports and mitigation. CDFG guidelines do not carry the obligations of law or regulation, but CDFG views this policy as a means to avoid project delays in addressing species issues of which the applicant was not formerly notified. CDFG can request additional consideration of species not otherwise protected under this definition.

Sections 1601 through 1607 of the California Fish and Game Code prohibit alterations of any streams, including intermittent and seasonal channels and many artificial channels, without a permit from CDFG. The limit of CDFG jurisdiction is, subject to the judgment of the Department, up to the 100-year flood level. This would apply to any channel modifications that would be required to meet drainage, transportation or flood-control objectives of the project.

California Environmental Quality Act

California Public Resources Code Section 15380, defines "rare" in a broad sense that includes species other than those designated as state or federally threatened or endangered. On this basis, plants designated as "rare" by non-regulatory organizations (e.g. CNPS), Species of Special Concern (CDFG), Candidate 1 and 2 species (USFWS) and other designations may be the focus of agency concerns and citizen intervention.

Roseville Tree Preservation Ordinance (City of Roseville, Chapter 16.10)

This ordinance protects native oak trees six inches or more in diameter at breast height (dbh) and specified landmark trees. The ordinance requires a permit for any activity that would harm, destroy, kill or remove any protected tree. In addition to removal, grading (cut or fill) and trenching within the protected zone - 1 foot outside largest dripline radius are subject to permit approval.

City of Roseville General Plan Policies

The City of Roseville has adopted policies to preserve the value of biological resources in the community. These policies are specific to vegetation and wildlife; however, other policies intended to preserve water quality, air quality and other features also benefit and protect biological resources.

4.5.4 IMPACTS

Method of Analysis

The biological resources evaluation consists of review of available literature on biological resources (including special-status plants, wildlife and habitats) in the general vicinity, informal consultations with agency representatives and experts knowledgeable about the local area, and reconnaissance-level field surveys to confirm the conclusions of existing documentation. Special-status plants have been identified from a review of existing reports, as well as a search of the California Native Plant Society Electronic Inventory for habitats in the vicinity. Wildlife species have been identified from the substantial literature documenting past field surveys, as well as a review of the current California Natural Diversity Database (Rarefind) for the project area and vicinity.

Habitat classifications are consistent with the California Department of Fish and Game Wildlife Habitat Relationship (WHR) System. Jurisdictional wetlands have been identified based on wetland delineations prepared for property owners in the project vicinity.

The biological setting of the project area has been described in terms of vegetation and plant communities, including wildlife habitat, fisheries and special-status species. Special-status plant and wildlife species that could occur in the project area have been provided, as well as a description of the likelihood of encountering them in the project area. A map showing specific habitat areas of concern has been provided (Figure 4.5-1).

Jurisdictional wetlands and riparian habitats have been shown on habitat maps, as they are reported in the existing documentation. Wetland delineations that have been verified by the Corps are noted, as well as those for which verification is absent or pending has been noted. Wetland mitigation, where implemented, has been summarized and, as relevant, included in the discussion of mitigation measures.

Where existing data have been determined to be incomplete, or insufficient to determine if descriptions and mitigation are complete, reconnaissance-level field surveys have been made to provide additional information on occurrence and distribution of special-status species and habitats. These surveys are intended to verify and supplement existing information.

The project area has been evaluated with regard to the presence and location of valuable biological resources before and after implementation of the Proposed Project. Areas set aside for mitigation or open space have been evaluated for their potential to adequately preserve or maintain the most significant biological resource values of the area. Resources that could be reduced or lost as a result of project implementation have been identified, and recommendations for additional mitigation if necessary to preserve those resources, are provided.

Industrial development generally results in complete loss of biological resources on the developed property, but could have lower impact on adjacent properties, primarily because industrial development is generally contained.

Standards of Significance

Impacts on biological resources are considered significant if one or more of the following conditions could result from implementation of the Proposed Project:

- violation of State or federal endangered species regulations, including "take" of a population of a State or federally-listed threatened or endangered species;
- substantial effect on, reduction in numbers, restricted range, or loss of habitat for a population of special-status species, including fully protected, candidate category 1 and 2, proposed for threatened or endangered, and species considered "rare" under CEQA 15380 by CDFG;
- substantial interference with the movement of any resident or migratory fish or wildlife species;
- substantially diminished or reduced habitat for native fish, wildlife, or plants; or
- substantial disturbance of wetlands, marshes, riparian woodlands and other wildlife habitat.

IMPACT 4.5-1:	Loss of approximately 275 acres of grassland habitat
Applicable City	
Policies and Regulations:	None
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

From a botanical point of view, the non-native annual grassland community is considered to have limited value; most plant species are not California natives, and few rare or endangered plant species are found in this plant community. Grassland habitat does provide important foraging, nesting and hibernation habitat for numerous wildlife species, including foraging raptors; however, the loss of this relatively small area is not in itself significant. The loss of grassland habitat as a result of the Proposed Project is considered less than significant.

IMPACT 4.5-2:**Loss of oak trees of greater than 6" dbh**

Applicable City

Policies and Regulations:

General Plan Policies LG-9, OB-1, Roseville Tree Preservation Ordinance

Action Proposed by Applicant:

Designate oak woodland/riparian corridors to be preserved as natural habitat

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Oak trees are a highly important biological resource because they support a diverse community of insects and wildlife in both their overstory (branches and leaves) and in their understory (grasses, brush, and limbs on the ground under the tree). The City of Roseville has recognized the importance of the preservation and enhancement of oak woodlands by implementing the Tree Preservation Ordinance, which requires the replacement of, or payment of an in-lieu fee for the replacement of, removed oak trees. In addition, the General Plan contains the following Policies to minimize the loss of oak trees:

- | | |
|------|---|
| OB-1 | Incorporate existing trees into development projects, and where preservation is not feasible, continue to require mitigation for the loss of removed trees. Particular emphasis shall be placed on avoiding the removal of groupings or groves of trees. |
| LG-9 | The location and preservation of native oak trees and oak woodlands shall be a primary factor in determining site design, building location, grading, construction and landscaping, and in establishing the character of projects through their use as a unifying element in both new and existing development. |

Because large oak trees take a relatively long time to reach "heritage" size (> 100 years) it is nearly impossible to replace the biological habitat value of a mature oak tree by planting numerous small, young oak saplings. An old oak tree provides much better habitat than an equivalent (by trunk diameter) number of young oaks.

The project applicant proposes to minimize losses of oak trees by preserving approximately 22.2 acres of oak woodland in the open space designation. This policy of avoidance would preserve all of the major stands of oak woodlands in the project area. Two trees greater than 6" dbh are outside the preserve area and could be damaged or lost. In addition, there is the potential for 2 or 3 more trees to be removed due to sewer line construction (see Impact 4.5-8). With implementation of the Tree Preservation Ordinance, the loss of oak trees would be less than significant.

IMPACT 4.5-3:**Loss of 3.47 acres of vernal pools, seasonal wetlands and other jurisdictional wetlands**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policies OB-7 and OB-11

Preserve and construct vernal pools

Significance:

Potentially significant

Additional Mitigation:

None available

Residual Significance:

Potentially significant

The Proposed Project would result in fill of 3.47 acres of vernal pools, seasonal wetlands, swales and intermittent drainages. Wetland delineations based on the 1987 methodology approved by the USCOE have been prepared for the project site.

All wetland impacts would be reduced through implementation and compliance with the provisions of the Section 404 permit for wetland fill and the following General Plan Policies:

- OB-7 Require cumulative mitigation plans for wetlands, where feasible, in association with specific plans.
- OB-11 Habitat preservation and mitigation for woodlands, creeks, riparian and seasonal wetland areas shall occur within the defined boundaries of the impacting projects, where long term resource viability is feasible and desirable.

The applicant must complete permitting requirements for the current project as required by Section 404 of the Clean Water Act. Such requirements include Corps verification of the wetland delineation for the project site, preparation and submittal of a revised Pre-Discharge Notification, including a wetland mitigation plan and Authorization by the Corps. The Authorization letter will likely contain additional terms and conditions to be met before project authorization and construction. These terms will likely include surveys for endangered species, creation of a wetland preserve, 1.53 acres of vernal pools and 1.32 acres of seasonal/emergent marsh, preparation of a final mitigation plan, monitoring reports, approval by various agencies and obtaining a State Water Quality Certification.³

While the Proposed Project would involve considerable effort to mitigate for vernal pool losses, there continues to be disagreement in the scientific community about the long-term ecological viability of artificially created vernal pools. For this reason residual impacts are considered potentially significant and unavoidable.

IMPACT 4.5-4:**Loss of special-status plant species occurring in vernal pools**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policies OB-7 and OB-11

Comply with Section 404 permits

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.5-4 (Vernal pool preservation, translocation, and compensation)

Residual Significance:

Less than significant

Bogg's Lake hedge hyssop is the only federal or State listed plant species that is reported to potentially occur in the project area; however, it was not encountered in field surveys¹⁹. Bogg's Lake hedge hyssop (state endangered) is restricted to vernal pool habitats. At least seven other vernal pool species with either candidate or CNPS 1B status could also occur; however, deterministic surveys have not been completed. Species with candidate or CNPS 1B status are not protected under the Endangered Species Act. Therefore impacts on them are not considered significant unless there is a "substantial" effect on the species.

Suitable habitat is reported to occur in the project area for a number of non-listed special status species, including, big scale balsamroot, dwarf downingia, Ahart's dwarf rush, legenera, pincushion navaretia, Sacramento orcutt grass, and slender orcutt grass. None of these species were observed during the preparation of wetland delineations for properties in the project area, but not all of the delineations were prepared during the appropriate time of year to observe these plants. These plants are generally federal or State candidate species or have been included in the CNPS 1B list, which is intended to include only those species that appear to meet the criteria for federal or State listing; for these species only a "substantial" adverse effect would be considered a significant impact. Because specific surveys for these species were not performed, it is not possible to conclude that the species do not occur in the project area, and thus that substantial impact would not occur.

The wetland mitigation plan developed for Section 404 permits proposes to construct new vernal pools as compensation for those lost as a result of developing of the project area. To ensure that these new vernal pools contain the species discussed above, soil from the natural vernal pools should be excavated and used to inoculate the constructed vernal pools. This inoculum should contain the seedbank of both plants and fauna that existed in the natural pools, including, if present the Boggs Lake hedge hyssop. With mitigation for vernal pools, inoculated with material from the natural vernal pools, the impact on special-status plant species would be less than significant.

IMPACT 4.5-5:**Disturbance to wildlife and wildlife habitat during construction**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

None

Designate oak woodland/riparian corridors to be preserved as natural habitat.

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.5-5 (Develop and implement construction protocols)

Residual Significance:

Less than significant

The natural behaviors of wildlife species, including birds and mammals, are disrupted by noise, dust, vibration, human presence, and other aspects of construction activity. This impact can be minimized by providing construction crews with orientation describing the resources and assets of the area and the regulatory reasons for preserving them. Providing for adequate parking, lubrication and refueling areas remote from sensitive habitat locations would reduce long-term impacts to those resources. Providing clear notification of areas that should be preserved through the use of construction fencing, flagging or other means would ensure that disturbance is temporary. Dust suppression measures as part of good construction practices would prevent excessive dust damaging the leaves and trunks of valuable trees.

With Mitigation Measure 4.5-5, impacts from construction activities would be less than significant.

IMPACT 4.5-6:**Potential loss of federal threatened vernal pool fairy shrimp**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

None

None

Significance:

Potentially significant

Additional Mitigation:

Mitigation Measure 4.5-6 (Implement Mitigation Measure 4.5-4)

Residual Significance:

Potentially significant

Any "take" of the species is prohibited without specific authorization from the USFWS under Sections 7 or 10 of the Federal Endangered Species Act. At least one species of fairy shrimp that is a federally-listed threatened species has been observed in the project vicinity, and could be considered likely to occur in the vernal pools in the project area. Two-year surveys for fairy shrimp are under way; none were found in the first year of the survey.

If fairy shrimp are found during surveys, mitigation activities should include the use of natural vernal pool inoculum in wetlands constructed for vernal pool mitigation. It would be expected that this inoculum would contain some vernal pool fairy shrimp eggs, if they exist in the wetlands where mitigation is required. Compliance with the requirements of the USFWS biological opinion and Section 10 permit should result in a minimum impact on the survival of the listed vernal pool fairy shrimp species.

While the magnitude of the impact would be reduced by this mitigation measure, it is, as of yet, an unproven mitigation. Like the success of constructed vernal pools, there is substantial disagreement within the scientific community as to whether constructed vernal pools would support the long-term survival of protected invertebrates. Therefore, this impact is considered potentially significant and unavoidable.

IMPACT 4.5-7:
Potential loss of nesting habitat of legally-protected raptors

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Potentially significant

Additional Mitigation:

Mitigation Measure 4.5-7 (Conduct pre-construction survey and implement restrictions)

Residual Significance:

Less than significant

Special-status species assessments that have been conducted in the project area concluded that suitable nesting habitat exists for a number of legally-protected raptors, including red tailed hawks and white-tailed kites. Both of these species have been documented nesting in the general vicinity. While legally-protected raptor species do not have the full protection of the endangered species act, it is, nonetheless, unlawful to take, possess, or destroy the nest or eggs of any of these species (Fish and Game Code § 3503.5). Therefore, if an active nest were present in a tree designated for removal in the year of construction, activity in the vicinity could result in "take" of the bird. Disturbance resulting in nest abandonment or activities that would otherwise injure, pursue or kill a fully-protected bird-of-prey would be considered a significant impact.

To ensure that fully-protected birds-of-prey are not taken during project construction, all tree removals should occur during the period when raptors are not nesting (August through February). If removal of trees during the nesting season is unavoidable, pre-construction raptor nest surveys should be conducted to determine whether or not legally-protected raptor nests are present in trees designated for removal. In the event that nests are present, appropriate protocols should be developed by the biologists and implemented by the applicant. Implementation of these measures would reduce impacts to the nesting habitat to a less-than-significant level.

IMPACT 4.5-8:

Potential loss of or damage to up to approximately 0.9 acres of wetland preserve and 2 or 3 oak trees due to sanitary sewer construction

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

Roseville Tree Preservation Ordinance

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.5-8 (Obtain and implement 404 permit, Section 1603 Permit and Streambed Alteration Agreement)

Residual Significance:

Less than significant

The Proposed Project includes construction of a sanitary sewer line that would cross over 1000 feet of the area designated as Open Space in the southwest corner of the property. A wetland preserve has been proposed in this area for mitigation of impacts to wetlands, vernal pools, special-status plants and animals and grasslands. Construction of the sanitary sewer would require trenching to a depth of up to fifteen feet, placing a 15" sewer line and backfilling the area. The estimated impact area for construction would be up to 50 feet wide.

The pipeline is expected to be constructed before the wetlands are reconstructed. However, existing vernal pools in the vicinity could be damaged by the pipeline construction. Removal and replacement of topsoil would affect approximately one acre of "preserved" habitat. It could cause erosion into vernal pools and other wetlands within the local hydrographic basin and penetrate the clay layer resulting in a change to the local hydrology.

Soil that is removed and backfilled is highly susceptible to invasion by weedy, non-native species including milk thistle, star thistle, ripgut brome and other undesirable species. Once established, these invasive species are likely to intrude on preserve areas, reducing the quality of wetland preserve habitats.

The Applicant will need to modify the PDN for the Wetland Preserve in order to include the sewer line. The Corps will require measures to offset the effects of the pipeline and ensure the viability of the preserve.

The sanitary sewer line, as proposed, would cross two drainages. Construction of the sewer line would potentially remove riparian vegetation and 2 or 3 oak trees, disrupt flows in the stream, and contribute to sedimentation and pollutants in the stream.

Stream crossings that "substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake..." require a Stream Alteration Agreement, as specified under Fish and Game Code 1603. The purpose of this regulation is to ensure that habitat and water quality are protected.

Construction within and adjacent to the streambed could cause significant adverse impacts. Impacts would be reduced by minimizing the number of trees and tree roots that would be removed during construction, constructing during periods when the creek is not flowing, and implementing best management practices for sediment and erosion control. These would be expected to be provisions of the Section 1603 agreement. With implementation of the 1603, long-term impacts would be less than significant.

4.5.5 MITIGATION MEASURES

Most impacts on biological resources in the project area would be avoided by careful planning and maintenance of the dedicated open space areas and management of natural resources near construction zones. Implementation of General Plan policies adopted by the City of Roseville would also substantially reduce impacts on specific resources. Additional mitigation measures to avoid, minimize or compensate for project impacts are listed below.

4.5-4 VERNAL POOL SPECIAL-STATUS PLANT SPECIES

Mitigation Measure 4.5-4: Vernal pool preservation, translocation, and compensation.

The Applicant shall comply with the provisions of the USCOE Section 404 wetland permit process. In the mitigation of vernal pools that would be filled or otherwise disturbed, the Applicant shall use harvested inoculum from on-site vernal pools. Removal of topsoil from harvested vernal pools shall comply with the most recent USCOE and USFWS guidelines at the time of construction, or consist of removal of the top 2" of soil, followed by the next 4" of soil, and placement of these layers in constructed vernal pools in reverse order (e.g. first the 4" followed by the 2") to approximately reconstruct the natural soil horizon.

4.5-5 DISTURBANCE OF WILDLIFE DURING CONSTRUCTION**Mitigation Measure 4.5-5: Develop and implement construction protocols.**

The Proposed Project shall include policies that require the implementation of construction protocols that include, but may not be limited to, the following:

- Restrict construction activities to areas away from preserved oak and riparian habitat

Construction activities in the vicinity of oak trees shall be minimized. Laydown, staging, refueling and parking areas shall not be located adjacent to open space oak or riparian zones. Construction activities that by necessity occur in the vicinity of oak woodlands and riparian zones to be preserved. Encroachments or damage that have not been authorized by a tree permit shall be prohibited, and measures to prevent damage to trees in the vicinity shall be implemented as detailed in the Tree Preservation Ordinance.
- Provide for construction parking away from sensitive habitat resources

Parking areas for construction personnel shall be located a minimum of 350 feet from the drip line of any mature oak tree intended for preservation, where parking will not compact or contaminate soils, damage tree roots, or otherwise degrade trees intended for open space or landscape preservation.
- Erect temporary barrier fencing to delimit protected areas.

Temporary fencing, consisting of five-foot orange construction drift fence, flagging, signs or other markings shall be erected around open space areas and restricted areas, and maintained for the duration of construction, to prevent inadvertent damage to natural resources. Fencing shall be maintained bi-weekly, and shall be the responsibility of an on-site compliance officer designated by the developer.

The Applicant shall monitor and prepare annual reports as required by USCOE.

4.5-6 VERNAL POOL FAIRY SHRIMP**Mitigation Measure 4.5-6: Implement Mitigation Measure 4.5-4.**

The Applicant shall implement Mitigation Measure 4.5-4 which requires compliance with the USCOE Section 404 wetland permit process and the incorporation of soil and harvested inoculum in newly created vernal pools.

Vernal pools in the project vicinity are known to be inhabited by the federally-listed threatened vernal pool fairy shrimp. Despite extensive survey effort, vernal pool tadpole shrimp and other listed species have not been encountered in the project vicinity.

Under the current guidelines for mitigation issued by the USFWS²⁰, an applicant affecting vernal pools may either provide two years of survey data to show absence of the species, or assume that the species is present and provide mitigation based on the areas of potentially suitable habitat. The project proponent has not established the absence of fairy shrimp in the project area; therefore, it would be obligated to provide the mitigation determined by the USFWS as part of Section 7 consultation.

The applicant shall comply with the provisions of the Section 7 biological opinions issued by the USFWS as required by the USCOE Section 404 wetland permit process. Previous opinions issued by the USFWS have required onsite preservation, and at least 3:1 compensation area or equivalent funds deposited to an approved Mitigation Bank.

4.5-7 LEGALLY-PROTECTED RAPTORS

Mitigation Measure 4.5-7: Conduct pre-construction survey and implement restrictions.

To ensure that fully protected and raptor species are not injured or disturbed, the Applicant shall implement one of the three following measures:

- (a) All tree removal shall occur between August 30 and March 15 to avoid the breeding season of any raptor species that could be using the area. This period may be modified with the authorization of the DFG.

-OR-

- (b) Prior to the beginning of construction during the period between March 15 to August 30, all trees within 350 feet of any grading or earthmoving activity shall be surveyed for active raptor nests by a qualified biologist. If active raptor nests are found, a fence or equally effective demarcation shall be erected around the tree at a distance of 350 feet from the edge of the canopy to prevent construction disturbance and intrusions on the nest area.

-OR-

- (c) The Applicant shall confer with CDFG and develop measures that satisfy the requirements of CDFG and the City.

Any raptor nest should be relocated according to CDFG protocol, or in consultation with CDFG, to the nearest suitable nest tree. Alternatively, the Applicant could develop protocol to the satisfaction of CDFG and the City.

Implementation of this measure would reduce impacts on nesting legally-protected raptors that could be present in the project area. However, increased disturbance in the general vicinity could result in reduced reproduction, abnormal behaviors or other effects that would have a potentially significant effect on these species even with the above mitigation.

4.5-8 SANITARY SEWER CONSTRUCTION

Mitigation Measure 4.5-8: Obtain and implement 404 permit, Section 1603 permit, and Streambed Alteration Agreement.

The Applicant will need to modify the PDN for the Wetland Preserve in order to include the sewer line. The Corps will require measures to offset the effects of the pipeline and ensure the viability of the preserve.

Construction within and adjacent to the streambed could cause significant adverse impacts. Impacts would be reduced by minimizing the number of trees and tree roots that would be removed during construction, constructing during periods when the creek is not flowing, and implementing best management practices for sediment and erosion control. These would be expected to be provisions of the Section 1603 agreement. With implementation of Section 1603, long-term impacts would be less than significant.

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4.6 CULTURAL RESOURCES

4.6 CULTURAL RESOURCES

4.6.1 INTRODUCTION

This section describes known cultural (prehistoric and historic) resources in the project area. Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally prior to contact with people of European descent. Historical resources include structures, features, artifacts and sites that date from Euroamerican settlement of the region. The potential effects on cultural resources by development under the Proposed Project are analyzed and, where applicable, measures to minimize those effects are presented. A technical appendix that includes more site-specific information than this section has been prepared; however, in order to protect sensitive cultural resources from disturbance, the technical appendix is available only to appropriate State agencies, archaeologists, and historians. This section presents information prepared by Peak & Associates, Inc., cultural resource specialists, who conducted the cultural resource investigations and field studies of all properties within the project area.

4.6.2 ENVIRONMENTAL SETTING

Prehistory

Until relatively recent years, the study of Sierran archeology lagged far behind the Central Valley and coastal areas in terms of developing regional chronologies and other basic aspects of systematic study of the prehistory of the area. The first effective synthesis of Sierran archeology was produced by Heizer and Elsasser (1953), and further refined by Elsasser (1960). Since that time, major archeological projects in the Sierra have proliferated, largely due to work on water projects and other cultural resources management-based research efforts. For the northern Sierra alone, archeological sequences, based on excavation of stratified sites and other data, are available for the Lake Tahoe vicinity,¹ the Lake Oroville locality,² and for the proposed Auburn Reservoir area. The latter, being of most relevance to the project area, will be discussed briefly.

There have been several archeological reconnaissances conducted in the Auburn Reservoir area, but the great majority of prehistoric sites recorded (i.e., milling stations, surface lithic scatters, small, single-component sites) are relatively uninformative in terms of larger regional research goals. Sites that have been excavated include a chert quarry³ and five midden sites, all reported during Phases II and III of the Auburn Reservoir Project.⁴ The most informative of these is the Spring Garden Ravine site (CA-PLA-101), which contained three well-defined strata.⁵

The lowest stratum (C) has been radiocarbon dated at about 1400 B.C., and contains an assemblage similar to the Martis Complex, as defined at high-elevation sites in the Sierra. The artifacts include large projectile points (mostly of basalt and slate), atlatl (dart-thrower) weights, numerous core tools, and several varieties of grinding implements. The next stratum (B) is less easily defined, and appears to represent a transition between cultures represented by the upper and lower strata. Some of this transitional appearance could be attributable to simple physical mixing of deposits, but the basic stratigraphic integrity of the site is indicated by consistency of the two radiocarbon dates from stratum B (A.D. 1039 ± 80 and 976 ± 90). The upper stratum contains small projectile points (arrowheads), hopper mortars, and other artifacts comparable to recent archeological collections elsewhere in the northern foothills. Stratum A is, therefore, probably a manifestation of the ancestral Nisenan, the Indian group inhabiting the area at the time of Euroamerican contact.

Ethnology

The Nisenan, or Southern Maidu, occupied the upper drainages and the adjacent ridges of the Yuba River, the north, middle, and south forks of the American River, and at least the upper north side of the Cosumnes River. The eastern limit of the territory is conventionally believed to extend to the crest of the Sierra Nevada range. The Nisenan in the Valley proper also occupied some area west of the lower reaches of the Feather River.⁶

The Nisenan linguistically are grouped with the Northern Maidu and Konkow within the Penutian family, located along the northeastern half of the Sacramento Valley and the adjoining western slopes of the Sierra Nevada.⁷ Kroeber (1925) distinguished three dialects within the larger territory occupied by the Nisenan, but Riddell indicated more distinctions are possible. Wilson and Towne (1978) distinguished several "centers", presumably linguistic and social groupings.

The Nisenan were socially integrated at the village or community group level⁸ with the group participating in the decision-making process. The villages would range in size from 15 to 25 people to, at least in the Valley Nisenan, villages of over 500 people.⁹ A very large settlement consisted of a major village and associated smaller camps, whether general or specialized in nature. A headman, respected by all and residing in the major village, had the authority to call upon the smaller associated groups in times of need; although, the smaller groups did not always have to obey.

The Nisenan inhabited a village near Roseville (Pichiku). This may have been a permanent settlement, as it was referred to as a "major village".¹⁰ The villages for the Hill Nisenan were located on ridges and flats along the major streams and rivers within their territory. The satellite encampments and villages were probably located on the smaller water courses surrounding or nearby the major village. The Nisenan, as with other Sierran groups, moved into the higher elevations during the hot summer months. The main activity was collecting pine nuts and numerous other species of nuts, roots, and berries and was done primarily by women and children. The foraging groups in a locale could range from small, extended family groups, composed of a woman, her immediate female kin, and their adolescent children, to entire villages.¹¹ The men spent most of their time hunting or fishing for a wide variety of fish and animals. Hunting was noted as often involving communal drives, with the best archers of the village posted to do the killing.¹² Individual hunters made extensive use of decoys and imitative sounds.

Most Nisenan never left the territory used by their own village group. However, there were in most large villages, at least some individuals who engaged in rather extensive trade with several valley groups as well as Sierra groups, such as the Washoe. The Hill Nisenan probably acquired obsidian and basketry from the east, in exchange for acorns from the Washoe,¹³ but it is unclear whether they visited or were visited by the Washoe or a combined mutual exchange occurred. Presumably, the exchange network functioned both during the summer and fall.

Warfare existed among the Nisenan, although it was rare. Conflict initiated during territorial violations. Inter-tribal conflict occurred in the Roseville area during the 1820s. Men from the Auburn/Nevada City area were killed in the Roseville vicinity, and hatred and distrust was evident for a period of several years. It was reported that the Nisenan attributed the epidemic of 1833 to bad air, sent to the valley by vengeful hill-dwelling shamans.¹⁴

The Nisenan were little affected by the Spanish and Mexican incursions into California's interior.¹⁵ They did suffer greatly from the epidemic of the 1830s that swept across California. Believed to have been brought by American fur trappers, the epidemic often was responsible for the decimation of entire villages. An estimated 75 percent of the native American population did not survive this epidemic, and many of the survivors relocated to the Sierra Nevadas.¹⁶

While many Nisenan survived the epidemic, they were greatly affected by the Gold Rush of 1849. John Marshall discovered gold in Coloma in 1848, within Nisenan territory. The Gold Rush soon followed, with tremendous repercussions for the Native American population.¹⁷

In the early 1870s, the Nisenan adopted the religious cults that swept through much of northern California following the inception of the Ghost Dance by the Pavitso near Walker Lake, Nevada in 1868. Unlike northwestern California, where the cults persisted well into the 20th century, the Nisenan abandoned the movement in the 1890s.¹⁸

History

The Roseville area experienced a great amount of Euroamerican use. The general area was explored by non-native peoples prior to the 1848 gold discovery at Sutter's Mill. Gabriel Moraga led an expedition under the flag of Spain from Mission San Jose up to the Cosumnes and Feather Rivers in 1808. In 1813, Jose Arguello reached the Cosumnes River, where he battled a group of Miwok, hostile to the exploration. Narciso Duran and Luis Arguello passed through the region on their expedition, which originated in San Francisco in 1817. Arguello is credited with naming the Feather River, "El Rio de Las Plumas".¹⁹

Following the Spanish explorations, this region of California was visited by American trappers looking for new areas to exploit. Jedediah Smith, Joseph Walker, and Ewing Young passed through the region on their journeys through California.²⁰ After the famous gold rush began in 1849, the region quickly became populated with prospectors, entrepreneurs, and others seeking fortunes.²¹

Once these fortune hunters realized the lack of easy fortune, many settled in the Roseville vicinity. Many of the 49'ers had been farmers prior to their journey to California, and reverted back to farming as a means of survival. Therefore, the development of the Roseville area by non-natives focused on ranching. After the settlement of California spread beyond the gold mining regions in the early 1850s, the early settlers discovered that the portions of the land located near the present community of Roseville were generally unsuitable for cultivation, but could be used for grazing purposes. To be profitable, a vast acreage for grazing large herds of cattle or sheep usually was required.

Railroad development served as the catalyst for growth in the Roseville area. The first railroad through southwestern Placer County was the California Central, which was started by a Marysville businessman, Charles Lincoln Wilson, in 1857. The goal of the proposed railway was to connect Marysville with Sacramento. Grading for the tracks was completed by 1860, and by late August or early September of 1861 the tracks were in present-day Roseville and on their way to Lincoln. However, the plan was never completed as the Central California succumbed to dwindling funds and strong competition from the Central Pacific Railroad when it reached the Roseville area from Sacramento in January of 1864.²²

In August of 1864, O.D. Lombard drew up plans for a town centered around the junctions of the Central Pacific and California Central Railroads, aptly known as the "Junction". The Junction maintained slow growth throughout the 1860s. By 1870, the California Central had merged with Central Pacific, which in turn was absorbed by the Southern Pacific Railroad.²³

Roseville was not named as an entity until the designation was applied to the Central Pacific Station established in 1864. Previously, the place names of the area referred only to small groups of miners working the gravels of Miner's Ravine, Secret Ravine and Strap Ravine. One version of the naming of Roseville is that the residents of the area chose the name at a picnic, in honor of the most popular girl present.²⁴

Roseville slowly developed from a mere railroad station to a town of some size. The surrounding area was used for stock raising, orchards, vineyards and dry agriculture, depending upon the availability of water at a particular locale. Roseville became an important fruit shipping center.²⁵

An individual who tried to make a living from the acreage allocated under a homestead soon discovered the marginal nature of the land. The successful individuals would acquire the holdings of neighbors who, becoming less enchanted by a lifestyle subject to the whims of nature and the associated marginal existence, chose to move on to try other occupational pursuits or to relocate in a richer, better watered region.

The best example of the ability to create and run a successful ranch in the region was the Spring Valley Ranch, a tract of 18,200 acres accumulated by J. P. Whitney, west of Rocklin. The tract included the headwaters of Pleasant Grove Creek, one of the drainages that crosses the project area. Whitney's plans for developing the ranch into a major fruit growing center could never be fully explored due to his failure to satisfactorily solve the water problem.²⁶

History of Property Within the Project Area

The project area lies about two and a half miles from the center of Roseville. Within the site, the lands were first settled at an early date. A homestead was filed for the east half of the project area in 1866, but was cancelled in 1872. The entire northeast portion of the project area was patented in 1874 to John P. Scott, and assigned to Richard Warrick. In 1861, the southeast portion of the property was first acquired from the General Land Office by Gustavus R. Scruggs as a grant for military service. Scruggs had served in Captain Graham's Company of the California Volunteers, fighting in the "California Indian Disturbance". Scruggs had acquired the land at the behest of Albert Woodruff, then immediately assigned the land to Woodruff.²⁷

Existing Cultural Resources Within the Project Area

In preparation for the Proposed Project, Peak & Associates, Inc. conducted cultural resource evaluations of the entire project area. Peak & Associates, Inc. conducted literature searches for the project area, reviewed previously prepared cultural resource reports, and examined historic maps of the project area.

These investigations resulted in the identification and recordation of one recorded archaeological and/or historic site within the project area. Several isolated artifacts have been located and catalogued as well. The cultural resources identified within the project area are described below. This analysis is based upon the results of the Peak & Associates, Inc. cultural resource reports as well as work performed by others.

Recorded Sites

In 1981, the various drainages of the region, including the branches of Pleasant Grove Creek, were surveyed for the sewer assessment district. This study resulted in the recordation of CA-PLA-428-H, an historic ranch complex, dating to at least 1910 and possibly occupied as early as the 1860s, located primarily within the project area.²⁸ A 1985 survey of the Carlsberg property to the south of the project area resulted in an upgrade of the site form.²⁹ This site is located on the Hewlett-Packard property.

The historic site, CA-PLA-428-H, was field checked by Peak & Associates, Inc., with the map and form revised. The site is a ranch complex with several structural remnants, possible privy pits, water tanks, wells and introduced vegetation. Quite a bit of modern debris has been piled up within the site, and several of the features have been destroyed since initial site recordation. The site extends to the west of the property line, with a small reservoir and corral. The site also extends to the south, with a large foundation area and artifacts present. This area is staked, and development is underway. CA-PLA-428-H dates to at least 1910. It could have been occupied as early as the 1860s. The site could constitute an important resource under the California Environmental Quality Act (CEQA) criteria.

Recently Identified Cultural Resource Artifacts

A field survey was conducted in February of 1991 for the entire Hewlett-Packard site by Peak & Associates, Inc. The "activity areas" identified by Roop within the property were inspected, and no artifacts were found. The survey resulted in the discovery of a new site, assigned temporary number PA-91-1, consisting of four ground stone artifacts on a knoll overlooking the South Branch of Pleasant Grove Creek. The site has been recorded with all artifacts photographed, even though it is a very meager site with no apparent research potential. It meets the definition of a site (three or more artifacts present) only marginally. However, there could be subsurface resources associated with the site. It appears to be disturbed by previous plowing of the area for dry farming.

4.6.3 REGULATORY SETTING

The treatment of cultural resources is governed by national and state regulations. There are specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. Federal and state significance criteria are concerned with the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. Some resources that do not meet federal significance criteria are considered significant according to state or local criteria. The federal and state regulations that apply to the Proposed Project are discussed below.

Under the Section 106 of the National Historic Preservation Act, the National Register of Historic Places is the United States' official list of cultural resources that are worthy of preservation. The National Register includes districts, sites, buildings, structures and objects with local, regional, state, or national significance.³⁰ The definition of historic property includes "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register."³¹ This definition also applies to artifacts, records and remains. The criteria for listing on the National Register are:³²

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- A. are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of persons significant in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded, or may be likely to yield, information important in prehistory or history.

State law also protects cultural resources, by requiring that prehistoric and historic resources be evaluated for significance when a CEQA document is prepared. Under CEQA, a cultural resource is considered significant if it meets any of the criteria found in Appendix K:

- A.1 Association with an event or person of recognized significance in California or American history;
- A.2 Association with an event or person of recognized scientific importance in prehistory;
- B. Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions;
- C. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
- D. Is at least one hundred years old and possesses substantial stratigraphic integrity; or
- E. Involves important research questions that historical research has shown can be answered only with archaeological methods.

The California Office of Historic Preservation (OHP) maintains the California Archaeological Inventory through 11 Information Centers throughout the state. The North Central Information Center (NCIC), which has the project area within its jurisdiction, is a repository for archaeological site records and other information on cultural resources, including the National Register of Historic Places (National Register) and the California Inventory of Historic Resources (CIHR) and Points of Historic Interest lists. Upon request, the NCIC conducts searches of its records to determine whether any cultural resources are known to exist in or near the subject property.

The CEQA Guidelines Supplementary Document J - Archaeological Impacts recommends methods for reducing or eliminating impacts on cultural resources, states:³³

- I. CEQA applies to effects on historic and prehistoric archaeological resources.
- II. Public agencies should seek to avoid damaging effects on an archaeological resource whenever feasible. If avoidance is not feasible, the importance of the site shall be evaluated using the criteria outlined in Section III.
 - A. In-situ preservation of a site is the preferred manner of avoiding damage to archaeological resources. Preserving the site is more important than preserving the artifacts alone because of the relationship of the artifacts to each other in the site provides valuable information that can be lost when the artifacts are removed. Further, preserving the site keeps it available for more sophisticated future research methods. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
 - B. Avoiding damage may be accomplished by many approaches, including:
 - 1. Planning construction to miss archaeological sites;

2. Planning parks, greenspace, or other open space to incorporate archaeological sites;
3. "Capping" or covering archaeological sites with a layer of soil before building tennis courts, parking lots, or similar facilities. Capping may be used where:
 - a. The soils to be covered will not suffer serious compaction;
 - b. The covering materials are not chemically active;
 - c. The site is one in which the natural processes of deterioration have been effectively arrested; and
 - d. The site has been recorded.
4. Deeding archaeological sites into permanent conservation easements.

4.6.4 IMPACTS

Method of Analysis

In addition to consultation with the North Central Information Center at California State University Sacramento, previous environmental documents for projects in the area have been reviewed, and full cultural resource field surveys have been conducted for the project area. Areas of historic or prehistoric concern, particularly those where construction could occur as a result of project development have been identified, based on the work previously done by Peak & Associates, Inc. These areas have been described in a manner which, although not identifying individual sites, will point to generalized geographic areas of high presence of these resources. The proximity of potential development areas to cultural resources have been identified. If development could occur on or near a cultural resource, measures for avoiding and/or recording the resource prior to excavation are discussed.

Standards of Significance

The standards for cultural resources are found in state law and the CEQA Guidelines. Selection of a site would be considered to have a significant impact if one of the following could occur:

- damage to or destruction of prehistoric sites or artifacts that could meet CEQA criteria for significance; or
- damage to or destruction of historical structures, features, artifacts, or sites that could meet CEQA criteria for significance.

A significant cultural resource is one that meets one of the CEQA Appendix K criteria presented in the Regulatory Setting portion of this section.

IMPACT 4.6-1:**Damage or destroy unidentified cultural resources**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policies OD-1, OD-2, OD-3

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.6-1 (Cease work and consult a qualified archaeologist)

Residual Significance:

Less than significant

Development under the Proposed Project could expose previously undiscovered archaeological resources during construction activities. Cultural resources exposed during construction, excavation, or related project activities could be damaged, destroyed, or removed from their cultural context. Because the traditional Nisenan culture was so thoroughly decimated by the end of the century, the only hope of preserving this information rests on archaeological techniques. Therefore, impacts on previously undiscovered archaeological resources are considered significant.

The General Plan contains the following Policies to minimize adverse impacts to valuable cultural and historic artifacts:

- OD-1 When items of historical, cultural or archaeological significance are discovered within the City, a qualified archaeologist or historian shall be called to evaluate the find and to recommend a proper action.
- OD-2 Significant archaeological sites shall, when feasible, be incorporated into open space areas.
- OD-3 Subject to approval by the appropriate federal, State and local agencies, artifacts which are discovered and subsequently determined to be "removable," shall be offered for dedication to the Maidu Park Native American Interpretive Center.

With appropriate consultation by a qualified archaeologist, this impact would be mitigated to a less-than-significant level.

IMPACT 4.6-2:**Damage or destroy previously identified prehistoric sites**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan policies OD-1, OD-3

None

Significance:	<i>Significant</i>
Additional Mitigation:	Mitigation Measure 4.6-2(a) (Determine if cultural deposit exists), Mitigation Measure 4.6-2(b) (Preserve or record sites, if found, consistent with CEQA Guidelines)
Residual Significance:	<i>Less than significant</i>

Development under the Proposed Project has the potential to affect the identified prehistoric archaeological site PA-91-1. Site PA-91-1 appears to be located within the Light Industrial designation. Sites in areas designated for light industrial development could be damaged or destroyed during excavation, grading or construction. See Impact 4.6-1 for the applicable General Plan Policies.

Site PA-91-1 has been identified by Peak & Associates, Inc. as a meager site, but there could be additional subsurface deposits associated with it. The recommended approach to determine if any cultural deposits exist is to undertake a series of shovel test pits to define the presence and extent of a possible deposit. If a deposit is present and is determined to be significant, a mitigation plan would be developed at that time to either protect or further evaluate the resource. Implementation of this mitigation measure would reduce the potential impact to a less-than-significant level.

IMPACT 4.6-3:	Damage or destroy known historic resources
Applicable City	
Policies and Regulations:	General Plan Policies OD-1, OD-3
Action Proposed by Applicant:	None
Significance:	<i>Significant</i>
Additional Mitigation:	Mitigation Measure 4.6-3 (Determine historical value, then mitigate as appropriate)
Residual Significance:	<i>Less than significant</i>

As discussed under setting, one potentially significant site was located within the project area. Site CA-PLA-428-H includes structural remnants that date the site to at least 1910, with earliest occupancy possibly dating to the 1860s. The site is in an area designated Light Industrial. Loss of this historic site would be considered significant if it meets the Appendix K criteria under CEQA. The site may be at least one hundred years old and may possess substantial stratigraphic integrity, two of the Appendix K criteria. Additional study will be required to determine if the site is historically significant. As with the archaeological site discussed above, avoidance, and

compliance with the General Plan Policies discussed in Impact 4.6-1, is the optimum method of preserving significant cultural resources. When resources will be destroyed by development, recordation by a qualified historian can fully offset the impacts.

4.6-5 MITIGATION MEASURES

4.6-1 UNIDENTIFIED CULTURAL RESOURCES

Mitigation Measure 4.6-1: Cease work and consult a qualified archaeologist.

In the event of the discovery of buried archaeological deposits it is recommended that project activities in the vicinity of the find should be temporarily halted and a qualified Archaeologist consulted to assess the resource and provide proper management recommendations. Possible management recommendations for important resources could include resource avoidance or data recovery excavations.

4.6-2 RECORDED ARCHAEOLOGICAL SITES

Mitigation Measure 4.6-2(a): Determine if cultural deposit exists.

Mitigation Measure 4.6-2(b): Preserve or record sites, if found, consistent with CEQA Guidelines.

The following measures are recommended to mitigate potential impacts on site PA-91-1.

Prior to any grading, excavation, or construction near site PA-91-1 (location is contained in the confidential Cultural Resource Appendix to this document), a qualified archaeologist shall conduct archeological testing to obtain data that would address the issue of site importance under CEQA.

If site PA-91-1 is found to be significant and is to be destroyed, it shall be fully recorded by a qualified archaeologist.

4.6-3 KNOWN HISTORICAL SITES

Mitigation Measure 4.6-3: Determine historical value, then mitigate as appropriate.

Prior to any grading, excavation or construction in the vicinity of CA-PLA-428-H, the structural farm remnants located in the Hewlett-Packard property, an archaeologist shall survey the sites to determine their historic value.

If the structural remnants are determined to be of historical significance, and the site is to be preserved, a buffer shall be placed around the site. The size of the buffer shall be determined by the archaeologist. No excavation, grading, or construction shall occur within this buffer.

If the structural remnants are considered of historical significance, and the site is to be preserved, an archaeologist shall determine whether they could be damaged by contact with people and/or domestic animals. If the site should not be accessible, a fence or other means of preventing access shall be placed at the edge of the buffer.

If the site is not to be preserved, Mitigation Measure 4.6-2(b) shall be implemented.

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4.7 AESTHETICS AND VISUAL RESOURCES

4.7 AESTHETICS AND VISUAL RESOURCES

4.7.1 INTRODUCTION

This section evaluates the relationship between the existing visual characteristics of the project area and the potential visual features of the Proposed Project. While land use designations have been applied to all land in the project area, the exact nature of specific structures under the Proposed Project is not known at this time; therefore, this evaluation of visual resources is general in nature. Specific uses or building designs are not analyzed; rather, the general visual effects of development under the Proposed Project are described. Topics include the potential loss of visual resources, effects on views, compatibility with the visual characteristics of surrounding uses, and the likelihood that sensitive receptors will be disturbed by light and glare generated or reflected by new structures.

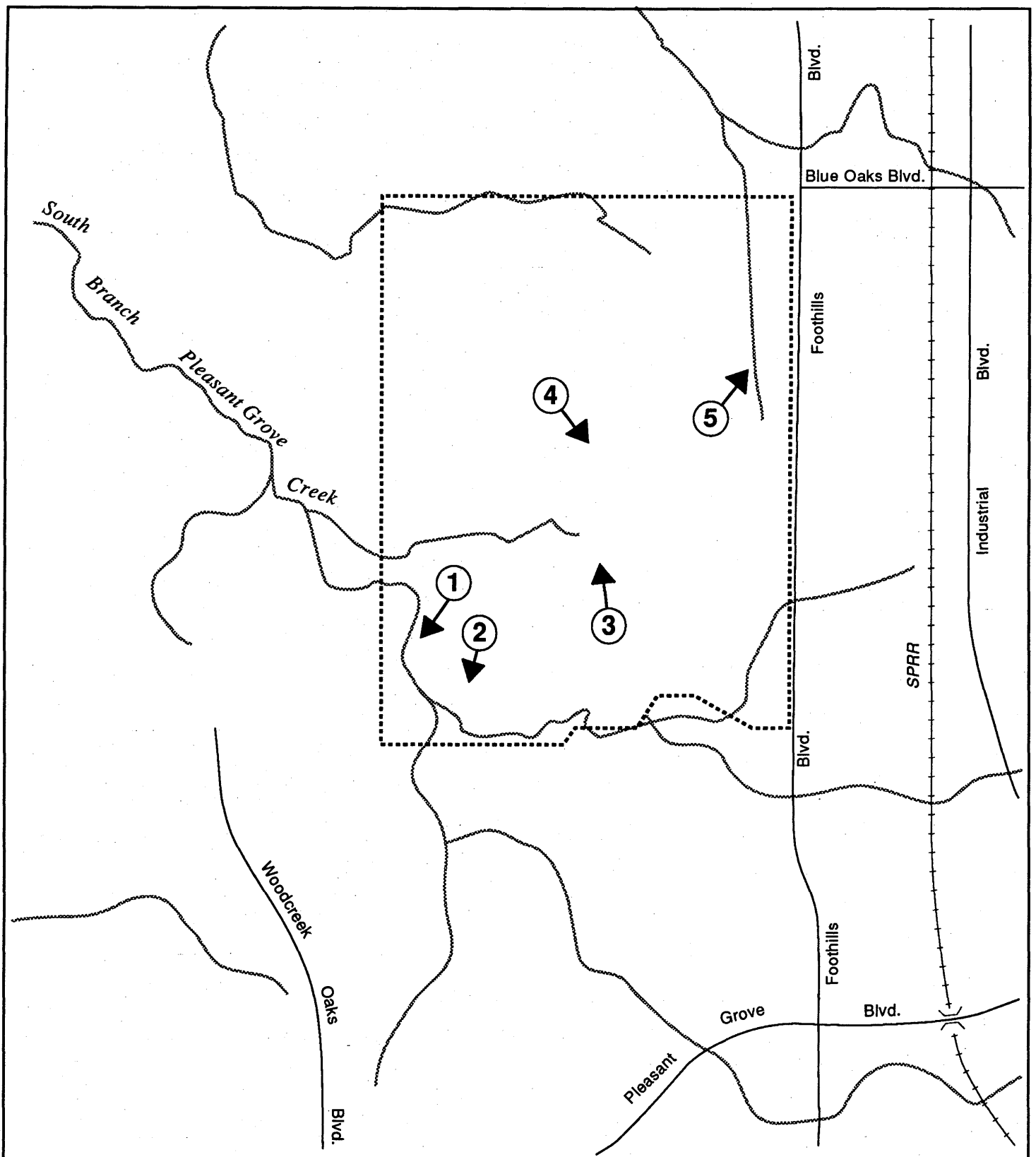
4.7.2 ENVIRONMENTAL SETTING

Figure 4.7-1 identifies locations from which some of the photographs in this section were taken.

Regional Visual Resources

The Roseville vicinity is generally regarded as a transitional zone between the flat, open terrain of the Central Valley and the foothills of the Sierra Nevada Mountains. The region consists of rolling topography with gentle slopes; major drainages typically drain the area from east to west. Oak woodlands are scattered throughout the region and constitute an important factor in regional identity. The oak woodlands, together with scattered riparian vegetation adjacent to drainages (see Figure 4.7-2, Riparian Habitat in Project Vicinity), accentuate the ridgeline/drainage patterns found in the landscape and create a strong contrast to the surrounding grassland. This contrast is especially evident during the seasonally dry summer and fall months when earth-tone colors dominate landscape views.

Vernal pools are also an important aesthetic component of the regional landscape (see Figure 4.7-3, Vernal Pools in Project Vicinity). The flower production and expanded color contrast associated with the pools provide additional landscape interest, even though the contrast and color are seasonally limited. The aesthetic value of vernal pools is also an important factor in the regional identity of the valley/foothills zone.



- Hewlett-Packard Master Plan Area
- Roseville City Limits
- Existing and Approved Roads
- ~~~~~ Streamcourses/Creeks

SOURCE: EIP Associates,
February 1996.

- ① Figure 4.7-2 Riparian Habitat Along So. Branch of Pleasant Grove Creek
- ② Figure 4.7-3 Vernal Pools
- ③ Figure 4.7-4 Project Area Characteristics
- ④ Figure 4.7-6 Light Industrial Uses
- ⑤ Figure 4.7-7 Light Industrial Uses

Figure 4.7-1

Key Map of Photographs

0 1/4
Scale In Miles

N
95190
Photos

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Figure 4.7-2
Riparian Habitat Along South Branch of Pleasant Grove Creek

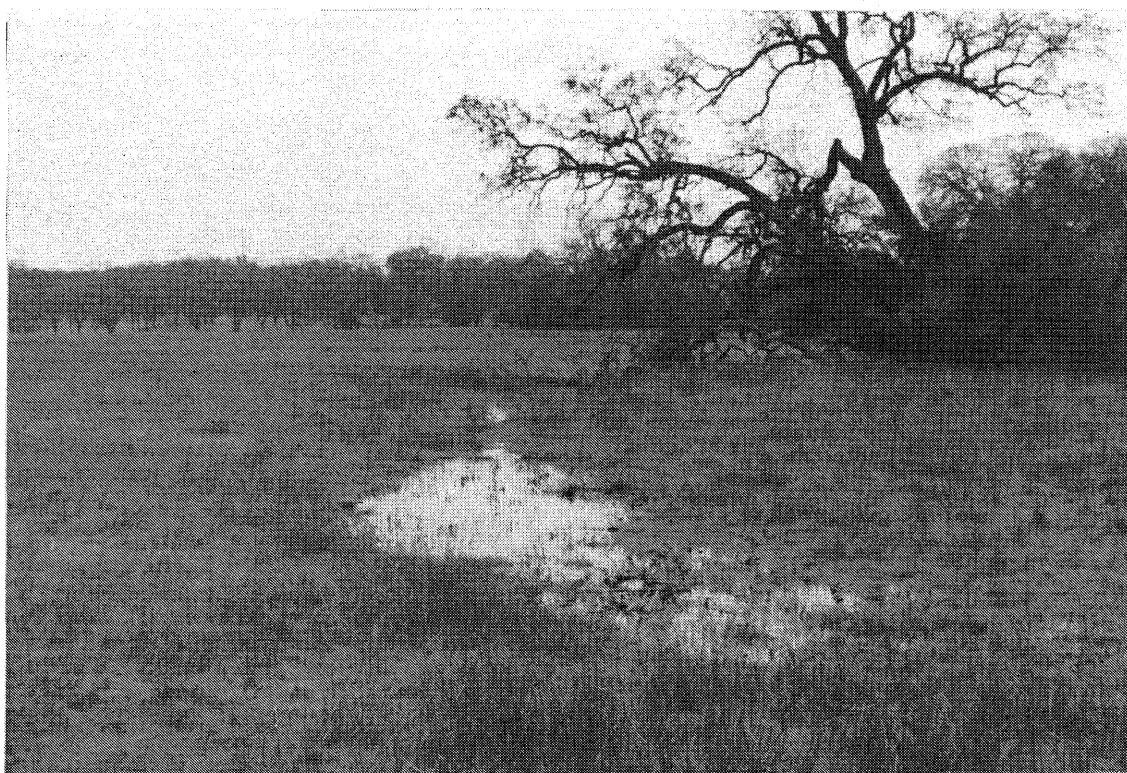


Figure 4.7-3 - Vernal Pools

Human-made development, which has become an important component of the landscape character, is evident throughout the region and reflects a variety of residential, commercial and industrial land uses. Development in some areas has completely eliminated historically rural character associated with regional ranching and agricultural operations. In many other locations, development has segmented the remaining natural areas, thereby heightening the aesthetic value of remaining contiguous open space.

Long-range views within the region include numerous important landmarks and landscape features, including portions of the Sierra Nevada, Sutter Buttes, Mount Diablo, and the Coast Range. No prominent landscape features or areas of unique scenic quality have been identified in the regional vicinity of the Proposed Project. In addition, the Roseville General Plan 2010 and the Placer County General Plan do not identify any roadways in the vicinity of the Proposed Project as Scenic or Community Identified Corridors requiring special considerations for adjacent development or rights-of-way landscaping.¹ Baseline Road and SR 65 had previously been identified as special corridors in the Scenic Element of the prior Roseville General Plan, but the updated General Plan does not specifically address the corridors.²

Project Area Setting

General Description

The project area is composed of two segments: the 200-acre Hewlett-Packard facility to the east, and 300 acres of undeveloped land to the north and west. The undeveloped portion of the site is comprised primarily of rolling grasslands and oak woodland (see Figure 4.7-4, Project Area Characteristics). The South Branch of Pleasant Grove Creek runs through the southern-most portion of the site. During late winter and spring, the site is carpeted with green grasses and wildflowers and lush green oaks. During summer the grasses turn brown and greenery is concentrated in the riparian habitat along the creeks. The topography varies only slightly, by approximately 25 feet. The undeveloped portion of the project and surrounding area are used as pasture land for cattle, and provide a picturesque panorama of grazing cattle, grassland, and drainage swales. Many properties are surrounded with barbed wire fences with metal "t" posts and occasional wooden posts, used for enclosing cattle in the grazing land. Other properties, such as Hewlett-Packard, are surrounded with modern wire fences. Figure 4.7-5 provides an overview of uses within the project vicinity.

Southern Branch of Pleasant Grove Creek

The project area is transected by the South Branch of Pleasant Grove Creek, which is surrounded by vegetation consisting of riparian habitat and oak woodland (see Figure 4.5-1, in Section 4.5, Biology). The creekbed is narrow with steep, tree-crowded banks, and intermittently, wide with smooth banks gently easing into the creekbeds. In some areas, the banks are eroded by cattle and road crossings.



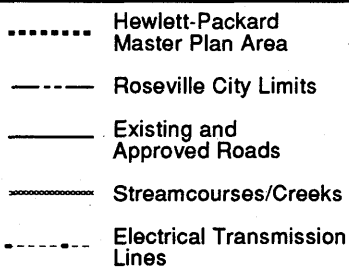
Figure 4.7-4

Plan Area Characteristics

94206

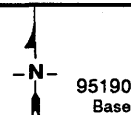
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- 1 Radio Tower
- 2 Turkey Shed
- 3 Turkey Sheds
- 4 Ranching Structure
Complex
- 5 Two Residences



 High Point

Illustration of Plan Area Characteristics



4.7-6

Existing Hewlett-Packard Facility

Hewlett-Packard occupies 1.3 million square feet, on approximately 200 acres. The Hewlett-Packard facility is composed primarily of one- to four-story, large floorplate buildings in a campus/business park-like setting surrounded by landscape features (see Figures 4.7-6 and 4.7-7, Hewlett-Packard facility). Approximately ten larger buildings are linked by roadways, pedestrian paths, and smaller buildings. Large parking lots are placed along the perimeter of the property on the southeast and northwest. Buildings are setback approximately 500 feet from the property edge, so they do not dominate views along Foothills Boulevard, which is the only roadway adjacent to the project area at present.

Surrounding Areas

The areas surrounding the project area consist mostly of rolling grasslands, and residential, light industrial and business developments. The areas north and west of the project area consists of rolling grasslands, historically used for grazing. Several industrial operations and businesses exist to the east and northeast of the project area, including Ace Hardware, Reynolds Metals, Roseville Telephone, the Albertson's Distribution Center, and NEC. These facilities provide a distinct contrast to the surrounding grassland. Farther to the east and northeast, the homes and other development of the City of Rocklin and the Stanford Ranch development are visible from several vantage points in the project area. To the northeast the Sierra Nevada foothills can be viewed. To the south and southwest of the project area lies the Northwest Roseville project area, consisting of residential neighborhoods and commercial development, and downtown Roseville. Single and two-story homes and a golf course exist immediately south and southwest of the project area. West of the project area lies gently rolling grassland, and farther west, the Sacramento Basin.

Views

Long-distance views from the project area include the Sierra Nevada Foothills to the east. Snow-covered mountain tops are visible from the fall and into the spring, turning a faint brown in summer. The Foothills are easily viewed on clear days; although, clouds, fog, and haze mute the view. Middle-distance views from the project area include grassland to the north, west and east, and encompass the City of Rocklin and the Stanford Ranch development, and the City of Roseville to the southeast. Industrial operations and businesses, including the Albertson's Distribution Center, also are located to the east. Views of these industrial and business facilities include large, functional buildings with ground-level parking. While the buildings may be single-story, the height on buildings such as the Albertson's Distribution Center is substantial, making it easier to view from the project area. Albertson's Distribution Center loads trucks along its west wall, readily visible to views from the east, such as the project area.

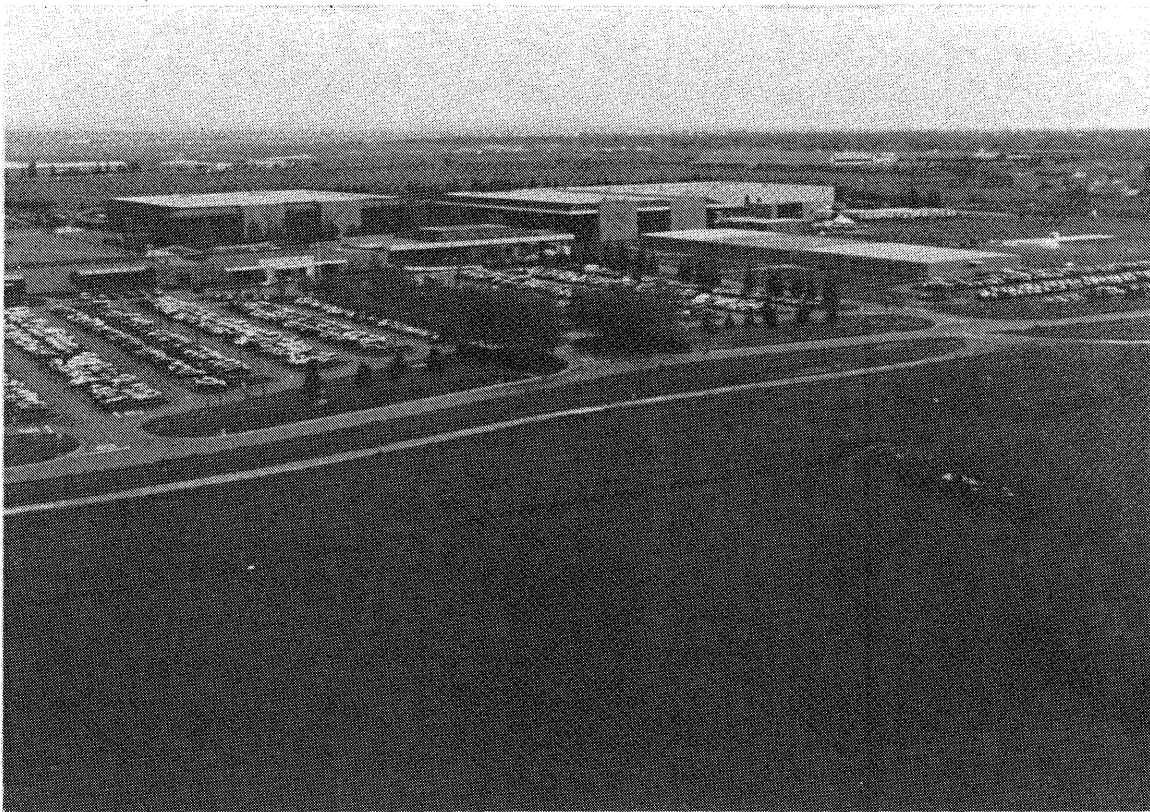


Figure 4.7-6 Light Industrial Uses

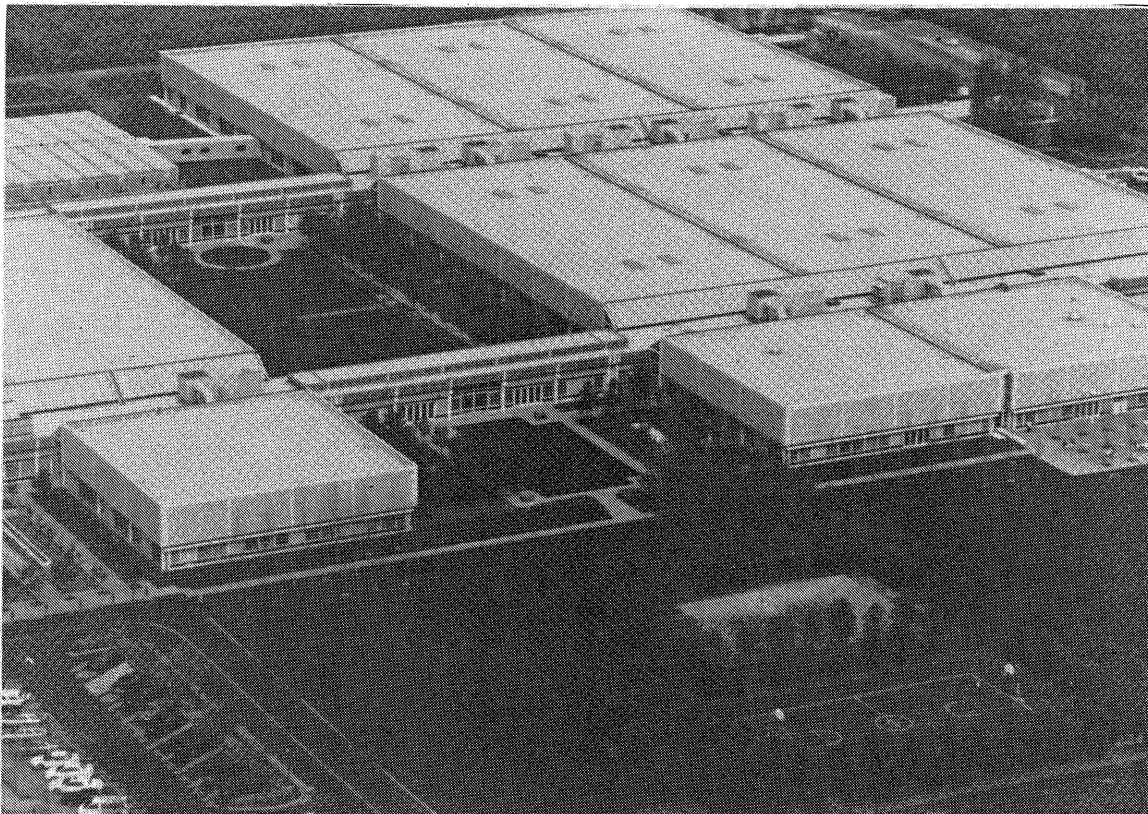


Figure 4.7-7 Light Industrial Uses

4.7.3 REGULATORY SETTING

The Roseville General Plan does not specify policies or elements that stipulate protection of or sensitivity to visual resources, but instead generally addresses visual resources through "aesthetics" references related to high-quality design, distinctive development or community character, public artistic expression, and incorporation and/or preservation of natural features (such as at Roseville "gateway" locations). Promotion of the preservation of "visual environments" is the most direct statement of visual resource protection in the General Plan, and is found in the Community Design section of the Land Use Element.

North Roseville Area Design Guidelines

The City of Roseville adopted the North Roseville Area Design Guidelines in June 1992, which provide standards and guidelines for non-residential development in the North Roseville area. The guidelines address roadway landscaping, entry points, edge treatments at adjoining sensitive land uses (such as residential), and unique existing conditions (e.g., 100-year flood zones, oak woodland). Coverage restrictions, setbacks, grading requirements, fencing and screening standards, landscape guidelines, sign guidelines, and height, mass and form standards are intended to minimize the visual impact of development in the North Roseville area. These design standards and guidelines will be applied to the commercial and light industrial uses in the project area.

Master Plan Design Guidelines

In addition to the North Roseville Area Design Guidelines, the Master Plan Design Guidelines further define the level and placement of landscaping along primary interior roadways and collector streets within the project area. The city's Community Design Guidelines will address the architectural and site design issues for the commercial and light industrial land uses.

4.7.4 IMPACTS

Method of Analysis

The positive or negative value attached to changes in visual character is largely subjective. This EIR does not seek to assign a judgement of "good" or "bad" change; rather, it identifies any substantive change as significant.

A description of the project area has been constructed from visits to the project area, aerial photographs, site photographs, and topographic maps. The City General Plan, as well as other applicable planning documents, were reviewed to determine what visual elements have been deemed valuable by the community. Once the character of the project area has been established, the analysis focuses on the manner in which development could change the visual elements or features that exist on or near the project area.

Standards of Significance

For the purpose of this EIR, a significant impact was identified if development of the site would:

- substantially change the existing visual character (day or night) of the site, including alterations to the natural terrain or topography;
- add structures that could disrupt views from public spaces, such as parks and scenic highways, of surrounding agricultural lands, and important nearby features;
- substantially alter views from designated scenic highways;
- create unattractive views from surrounding areas; or
- create new sources of light and/or glare that would directly illuminate adjacent and nearby residences or public uses.

IMPACT 4.7-1:

Conversion of undeveloped landscape character to developed character

Applicable City Policies
and Regulations:

None

Action Proposed by Applicant:

Designate 45.9 acres as open space

Significance:

Significant

Additional Mitigation:

None available

Residual Significance:

Significant

Implementation of the Proposed Project would urbanize several hundred acres of undeveloped landscape. The visual character of this and surrounding areas is expansive and undeveloped, and it is visible from a variety of viewpoints, some well-travelled, such as parts of SR 65. The Proposed Project would substantially and permanently alter the visual character of the undeveloped portion of the project area by introducing a roadway network, commercial uses, industrial facilities, and other urban-type development. This is considered a significant impact.

The Proposed Project would retain approximately 45.9 acres of open space (see Chapter 3, Project Description). This open space would include all of the riparian corridor and the oak woodlands in the project area. However, the majority of grasslands on the site would be developed, including the area to the west, east and south of the open space area, so that the present site would lose much of its undeveloped character. Although the visual character of the project site is dominated by open grasslands, the riparian corridor that runs through the site provides visually

significant features and diversity to the site. The project proposes to eliminate 2 or 3 oak trees and some vernal pools outside of the Open Space area, while preserving 45.9 acres of oak woodland and riparian habitat as open space. These areas will retain their existing visual character. Because a substantial portion of this visual resource will be retained, this is considered a less-than-significant impact.

The visual character of the Proposed Project would be defined by the North Roseville Area Development Guidelines and Standards, and the Master Plan Design Guidelines which address the size, type and treatment of buildings, setbacks, landscaping, and so on. While these standards would beneficially direct the scale and consistency of architecture, as well as the configuration of site improvements and landscaping, they would not preserve the existing undeveloped character of the site. Therefore, this impact would remain significant after mitigation.

IMPACT 4.7-2:	Visual incompatibility between light industrial uses and surrounding development
Applicable City Policies and Regulations:	North Roseville Area Design Guidelines, General Plan Policies LG-1 and LG-7
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

Under the Proposed Project, the majority of the project area site would be dedicated to light industrial uses. The light industrial area would be adjacent to a golf course and residential areas to the south and commercial areas to the north.

Light industrial uses can include facilities that are not visually compatible with residential areas because of buildings that are tall and massive, outdoor storage areas or large, mechanical equipment that are visible from nearby areas, and so on. Although, the mature oak woodlands effectively minimize the visual incompatibility between the light industrial uses and adjacent residential areas.

In addition, light industrial facilities can be housed in landscaped, campus-like facilities that resemble low-rise, office complexes, or simple, box-shaped structures that house any equipment or related items away from public view. Compatibility of light industrial uses with residential and other non-industrial uses depends largely on the type of facility and its buildings and grounds.

The City of Roseville General Plan contains the following community design policies:

- LG-1 Through the design review process, apply design standards that promote the use of high quality building materials, architectural and site designs, landscaping signage and amenities.
- LG-7 Encourage project designs that place a high priority and value on open space, and the preservation, enhancement, and incorporation of natural resources and other features including consideration of topography, vegetation, wetlands and water courses.

As discussed above, the City of Roseville Community Design policies and the North Roseville Area Design Guidelines would apply to light industrial uses in the project area. These design guidelines specify building heights, setbacks, treatments, landscaping and other measures to ensure that non-residential development does not create adverse visual impacts. With implementation of the above General Plan policies and guidelines, this impact would be reduced to a less-than-significant level.

IMPACT 4.7-3:

Introduction of artificial light and glare into an undisturbed area

Applicable City Policies

and Regulations:

North Roseville Area Design Guidelines

Action Proposed by Applicant:

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.7-3 (Use building orientation and materials that minimize glare)

Residual Significance:

Less than significant

New commercial and light industrial development would require lights in parking areas and in and around buildings for both safety and convenience. The introduction of artificial light into an undeveloped area contributes to the change in that area's character. In addition, lighting can be a nuisance if it spills into backyards or homes, as it can interfere with sleeping, watching television or other activities. The North Roseville Area Design Guidelines specify that "cut-off" fixtures be used. These fixtures are screened to direct light into specific areas and prevent it from spilling into areas where it is not required. For example, with cut-off fixtures, a security light can be directed entirely toward the parking area and "cut-off" at the fence line. With the use of these lights, the impact on surrounding land uses would be less than significant.

Glare is caused by light reflections from pavement, vehicles and building materials such as reflective glass and polished surfaces. During daylight hours, the amount of existing glare depends upon the intensity and direction of sunlight; at night, artificial lighting can create glare. Particularly in commercial and business/professional areas, windows comprise a large proportion

of building surfaces, creating the potential for glare which would increase with the use of reflective coatings and reflective building materials. The problem is most noticeable with large buildings that have reflective surfaces. Structures in the light industrial area could create glare if their surfaces are reflective. If non-reflective materials are used, and/or the building is oriented so that reflective surfaces do not face roadways, this impact would be less than significant.

4.7-5 MITIGATION MEASURES

4.7-3 LIGHT AND GLARE

Mitigation Measure 4.7-3: **Use building orientation and materials that minimize glare.**

For large buildings, building surfaces and materials, orientation, and landscaping shall be designed to ensure that roadways and walkways are not subjected to disruptive glare. The City shall review building plans to ensure that this condition is met.

ENDNOTES

1. City of Roseville, *Comprehensive Land Use Element Update Project Draft Environmental Impact Report*, February 1995.
2. City of Roseville, *Del Webb Specific Plan Environmental Impact Report*, September 1993.

4.8 HAZARDOUS MATERIALS AND PUBLIC SAFETY

4.8 HAZARDOUS MATERIALS AND PUBLIC SAFETY

4.8.1 INTRODUCTION

This section describes the potential adverse impacts on human health due to exposure to hazards that could result from the development of the Proposed Project. Hazards evaluated include those associated with existing identified or suspected contaminated sites, potential exposure to hazardous materials used, generated, stored, or transported in or immediately adjacent to the project area, and potential hazards associated with electromagnetic fields (EMFs). Included in the discussion is a summary of applicable hazardous materials laws and regulations and agencies responsible for their implementation. Potential hazards associated with the discharge of wastewater from light-industrial facilities are discussed in Chapter 4.4, Hydrology and Water Quality. Potential hazards and associated impacts related to airborne emissions or releases of hazardous materials are discussed in Chapter 4.10, Air Quality.

For purposes of this EIR, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. This EIR uses the definition stated in the California Health and Safety Code (CHSC) § 25501:

A hazardous material is any material that, because of its quantity, concentration, or physical, chemical characteristics poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, 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.

Additional information about hazardous materials and associated potential risks is presented in Appendix E.

4.8.2 ENVIRONMENTAL SETTING

The presence of hazardous materials or other safety hazards is a part of everyday urban life that could affect residents, workers, and visitors within and adjacent to the project area. Some of these activities can pose a risk of exposure to people or the environment due to accidental releases, such as spills, or as a result of soil or groundwater contamination related to past uses of properties within and adjacent to the project area. Transportation of hazardous materials through or near the project area could also present hazards.

The following section discusses existing and proposed land uses that have the potential to result in accidental releases of hazardous materials or present other health risks and identifies existing hazardous materials management programs applicable to the project area. A summary of potential hazards related to the presence of high-voltage electric power lines is also presented.

Past and Existing Uses

Although over 300 acres of the project area is undeveloped, existing or past uses within or adjacent to the project area could contaminate soil or groundwater, which if not properly managed could affect human health during construction activities or planned uses. Locations of potential and known hazards are discussed below.

Undeveloped Property Within the Project Area - Preliminary Site Assessments

Preliminary Site Assessments (PSAs), or Phase 1 Site Assessments, are performed to determine the likelihood of hazardous materials or contamination from on-site or adjacent sources that could present a risk to the public if not identified or properly managed. The assessments generally include the following:

- review and evaluation of information available from state and local agencies,
- site reconnaissance of the property and adjacent areas,
- aerial photograph review, and
- discussions with state and local agency staff.

The following is a summary of information from the site assessment prepared in 1991 for the project area.

Hewlett-Packard Master Plan Property

Phase Three Environmental Management performed a PSA for the Proposed Project site in 1991. The PSA, which covered only the undeveloped portion of the property consisted of a regulatory records review, site inspection, aerial photograph review, and discussions with Roseville Fire Department staff. The consultant concluded that, in general, the potential for hazardous wastes to be present is very low. Phase Three Environmental Management also suggested a slight possibility of soil contamination in two areas of the site. Based on visual observations noted in the report, the far southwest corner of the property could have been used for tractor/truck maintenance. The northeast portion of the site (north Building 10) contained litter and concrete/asphalt debris. However, the report preparers did not recommend sampling, because the potential for contamination was considered to be low.¹ It is assumed these materials will be removed prior to development.

Developed Property Within the Project Area

The existing facility occupies one third of the approximately 500-acre site in the North Roseville Industrial Area in the City of Roseville. With the exception of 45.9 acres designated as open space in the southwest corner of the project area, the remainder of the site is planned for future

development. Currently, electronic computer and peripheral equipment is manufactured at the facility, which has been in operation since the early 1980s. The facility is listed as a large-quantity waste generator on the federal Resource Conservation and Recovery Act (RCRA) list. Based on information contained at the Roseville Fire Department, the facility uses and stores a number of hazardous materials; although, most materials are stored in relatively small quantities. Nitric or sulfuric acid is used to neutralize process wastewater in an on-site holding tank prior to discharge to the sanitary sewer system. The facility has permits to maintain three above-ground diesel storage tanks, two underground diesel tanks, and one underground gasoline storage tank.² The facility is inspected on a regular basis. According to the Roseville Fire Department, there have been no significant reported problems involving hazardous materials at the facility. In the interest of hazardous waste minimization, the facility is currently developing methods to reduce the amount of hazardous materials used at the site.³

In 1994/95 the production processes on the existing site required the procurement of 2,000 lbs. of solder, and under 500 gallons of isopropyl alcohol-based fluxes and thinners. In addition, the site generated under five tons of hazardous waste over the past 12-months. No hazardous wastes were sent to the landfill; all were either recycled or disposed of by licensed waste handlers. Hewlett-Packard permanently discontinued the use of chlorinated fluorocarbons (CFC's) in 1993 in its manufacturing process; CFC's are still used in the air conditioning system.⁴

Other Facilities in the Vicinity of the Project Area

Several facilities outside the project area involve operations in which hazardous materials are used or could be present. There is little likelihood that a release from these facilities would affect development in the project area is minimal, because of the State and federal regulations and policies with which they are expected to comply. Nonetheless, such facilities are important in the context of evaluating cumulative impacts associated with project development.

Existing manufacturing facilities, such as NEC Electronics Inc. and H.B. Fuller must comply with state and local laws governing hazardous materials use, storage, inventory and reporting, transportation, and disposal. NEC is one of the larger facilities in this area. According to Roseville Fire Department records, NEC uses and stores small quantities of a number of hazardous materials and is listed as a large-quantity generator on the RCRA list. Acutely hazardous materials at the facility are kept in environmentally controlled rooms with continuous monitoring.⁵ H.B. Fuller, which manufactures adhesives, sealants, and coatings, also stores acutely hazardous materials at their facility. The Roseville Fire Department regularly inspects these and other facilities using hazardous materials to ensure compliance with applicable hazardous materials regulations.

Planned Uses

Of the three land uses identified in the Proposed Project, two are expected to contain activities in which hazardous materials would likely be used, stored, generated, or transported. These land uses are General Commercial and Light Industrial.

In some cases, it is the *type* of hazardous material that is potentially hazardous; in others, it is the amount of hazardous material that could present a hazard.

The types of activities that would be allowable in areas designated General Commercial and typical hazardous materials that would likely be used include:

- vehicle maintenance shops (fuels, lubricants, oils),
- dry cleaners (solvents, cleaning agents),
- paint stores (paints, solvents),
- medical and dental offices (alcohol, photographic chemicals, formaldehyde), and
- grocery stores, restaurants, hotels, bakeries (cleaning agents, pesticides).

A percentage of the municipal solid waste generated at these establishments could also be hazardous, similar to the wastes generated by residential land uses. Hazardous wastes generated by small businesses such as those described above commonly include:

- used batteries, transmission fluids, oil,
- spent paints and solvents,
- photographic wastes containing heavy metals, acids,
- medical wastes, formaldehyde, and
- unused pesticides.

In addition to the commercial services listed above, activities that would be permitted in areas designated as Light-Industrial include:

- research and development,
- assembly of goods, materials, liquids, and equipment,
- manufacturing involving assembly, manufacturing, and finishing,
- analytical laboratories,
- graphics and reproduction facilities, and
- warehousing, including storage and wholesaling.

In addition to chemical-type materials that could typically be used in these businesses, limited amounts of biohazardous or radioactive materials could also be used in research and development or analytical facilities. The types and amounts of hazardous materials would vary according to the nature of the activity and the actual businesses that would locate in these facilities is unknown; therefore, the specific hazardous materials that would be used cannot be determined at this time. However, a summary of common groups of hazardous materials that could be used in these facilities and potential associated hazards is shown in Table 4.8-1.

TABLE 4.8-1 COMMON GROUPS OF HAZARDOUS MATERIALS AND POTENTIAL ASSOCIATED HAZARDS	
Hazard Group	Description
Toxics	Substances that can cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability or death. Examples: heavy metals, chlorinated pesticides, solvents.
Reactives	Materials, including explosives, other than strong acids or bases that react violently with water to produce fire or toxic fumes. Examples: hydrogen cyanide, pure sodium metal.
Oxidizers	Materials that release oxygen or add to the intensity of a fire. Examples: sulfuric acid, chlorine, peroxide.
Flammables/Combustibles Ignitables	Liquids or solids that readily burn. Examples: gasoline, acetone, natural gas.
Corrosives/Irritants	Materials that are strong acids or bases, will corrode metal or irritate skin/respiratory systems, and can react violently with water. Examples: nitric acid, sodium hydroxide.
Radioactives	Materials or sources of ionizing radiation that can potentially cause short-term or long-lasting health effects. Examples: phosphorus 32, tritium, sulfur 35.
Biohazardous materials	Materials containing microorganisms, bacteria, parasites, or viruses that can cause disease. Examples: needles and cultures from medical offices.
Carcinogens, teratogens, mutagens	Special classes of toxic substances that can cause cancer (carcinogens), reproductive effects (teratogens), or genetic damage (mutagens).
SOURCE: EIP Associates, 1995.	

Transportation of Hazardous Materials Within and Adjacent to the Project Area

Hazardous materials are routinely transported by truck or rail. With few exceptions, Section 31303 of the California Vehicle Code and U.S. Department of Transportation (DOT) regulations, as specified in Title 49 of the Code of Federal Regulations (49 CFR), prohibit the transportation of hazardous materials through residential neighborhoods and require that hazardous materials be transported via routes with the least overall travel time. The California Highway Patrol (CHP) licenses common carriers who transport hazardous materials within the state. In addition, the CHP conducts regular inspections of licensed hazardous materials transporters to assure regulatory compliance. The City has designated truck routes, regardless of their cargo, which direct traffic away from residential areas. The Proposed Project includes the designation of Blue Oaks Boulevard from Foothills Boulevard to Fiddymont Road as a "Future Truck Route". Fiddymont

Road from Blue Oaks to Pleasant Grove Boulevard is also proposed as a truck route. Transportation of hazardous materials along any City or State roadways or rail lines is subject to all DOT hazardous materials transportation regulations.

City of Roseville Hazardous Materials Emergency Response

The Roseville Fire Department has developed a Hazardous Materials Emergency Response Plan. The plan describes organizational and operational responsibilities in the event of a hazardous materials emergency, including cleanup and decontamination procedures. As first responders to hazardous material incidents, personnel on each shift are trained to respond to hazardous materials incidents according to standards specified in CCR Title 8, § 5192 (Hazardous Waste Operations and Emergency Response). Through mutual aid agreements, the Roseville Fire Department can also request services from the Placer County Hazardous Materials Response Team in the event of a large-scale incident.⁶ The Roseville Fire Department would also provide assistance to the California Highway Patrol, Office of Emergency Services, and other responding agencies as requested in the event of a hazardous materials spill on State Route 65 or Interstate 80.

The City is developing an Emergency Response Plan (Disaster Plan).⁷ The plan will be an extension of the City's Multi-Hazard Functional Plan and will follow nationally adopted Incident Command System guidelines. The Emergency Response Plan will describe roles and responsibilities during emergencies, operating procedures, equipment, and administrative procedures.⁸ Specific evacuation routes are generally not included in disaster plans since emergency response procedures and evacuation would need to be determined on a case-by-case basis. Although existing City emergency plans do not indicate specific routes, they have determined that if evacuation in response to a hazardous materials incident in existing or planned areas was needed that evacuees would be directed to areas upwind of the incident. The predominant wind direction is from the south or southwest. Depending on weather conditions, evacuation to the east or west would be the second option. Evacuation to the north would occur only if weather conditions necessitated it. The exact routes and distances would be determined in response to the nature and severity of the incident.⁹

Hazardous Waste Management Plan

A Hazardous Waste Management Plan was developed in 1988 and adopted in 1989 by Placer County in response to the Tanner Act (AB 2948). In accordance with Tanner Act requirements, the HWMP includes information on current and projected hazardous waste generation in the County, including household hazardous waste, an inventory of contaminated sites and hazardous waste treatment, storage, and disposal (TSD) facilities, and administrative policies and implementation measures. Placer County's plan has not yet been approved by the state because of disagreements over the County's "fair share" policy concerning siting of TSD facilities. The County does not intend to revise and resubmit its plan; however, the plan is updated as needed.¹⁰ The City of Roseville has not taken action on this plan, and no specific General Plan policies have been adopted to address this issue.¹¹

Hazardous wastes generated as a result of the Proposed Project development would require disposal at TSD facilities outside the county until demand for these facilities exceeds their capacity or until on-site treatment of hazardous wastes becomes more cost effective than off-site disposal.¹² Placer County General Plan Hazardous Materials Policy 8.G.9 requires that applications for discretionary development that will generate hazardous wastes or use hazardous materials must include detailed information on hazardous waste reduction, recycling, and storage.

High-Voltage Electric Power Lines

There are above-ground 60 kV electric transmission lines that run immediately adjacent to the western boundary of the project area and continue north of the Hewlett-Packard site. These existing lines will connect to a future substation to be located in the southern portion of the project area. Adjacent to the southern boundary of the project area, there are existing 60 kV overhead lines that connect to the lines that run along the east side of the SPRR tracks. Future temporary lines are planned along Blue Oaks Boulevard to connect to the Future Del Webb Substation and north of Blue Oaks Boulevard. The temporary line to Del Webb will be placed underground as development occurs along Blue Oaks Boulevard.

Recently, the potential health effects of electric and magnetic fields (EMF) associated with transmission lines, have been the focus of scientific controversy. As a result, utility companies and public health agencies are trying to address public concern over the potential health effects of exposure to EMFs. Experts are uncertain there is a danger, and if so, what constitutes a safe level of exposure. The following discussion is a general summary of existing information related to the hazards associated with EMF exposure.

Electric and Magnetic Field Strength

Electric and magnetic fields are created by electric charges. Electric fields are created by the forces that electric charges exert upon one another, while magnetic fields result from the additional forces that the moving charges exert upon other moving charges.¹³ Therefore, magnetic fields are a by-product of electric fields. Current describes the rate of flow of electricity through a line. When electric current is flowing through a line, the current sets up a magnetic field around itself. Therefore, when there is a flow of electricity in utility transmission lines, distribution lines, and typical home appliances, both electric and magnetic fields are created.¹⁴

The electric field intensity (strength) is expressed in kilovolts per meter (Kv/m), which describes how the voltage changes with distance from the conductor. Near a transmission line, the electric field intensity depends on the voltage applied to the line, the distance from the line, as well as other factors.¹⁵ Electric field intensity decreases rapidly with increasing distance from a transmission line. In addition, electric fields are effectively shielded by larger objects such as trees and houses.

Magnetic field strength is reported in milligauss (mg) measured one meter above the ground surface. Compared to electric fields, magnetic fields do not decrease as rapidly as distance from the source increases, and they are generally unaffected by large objects.¹⁶

Potential Health Hazards

Since the early 1970s, the public has become increasingly aware of potential health hazards associated with long-term exposure to EMF generated by electrical equipment and appliances. Although some preliminary studies have raised the possibility of hormonal and nerve system changes in living things exposed to EMFs, whether these changes pose potential health risks to humans is unclear. Suspected health risks include the promotion of cancer, birth defects, other reproductive and developmental abnormalities, and various neurological effects, such as chronic depression. Some studies have found a statistical correlation between EMFs and health effects, while others have not. Furthermore, correlation is not necessarily causation, and no causal relationship between EMFs and health effects has been established.¹⁷

In California, research to evaluate potential health effects was funded under SB 2519, Chapter 1551, Statutes of 1988. Under this bill, the California Public Utilities Commission (CPUC) and the State Department of Health Services (DHS) were to conduct a study of any risks that could be related to exposure to electric and magnetic fields produced by electric utilities facilities. The first phase of the study consisted of a review of the existing literature. As of March 1992, a report to the legislature recommended no regulation of electric and magnetic fields. A second report, dated September 15, 1989, recommended additional research to identify health effects and a statewide exposure assessment program. The California Energy Commission (CEC) published a staff report summarizing health effects studies from high-voltage transmission lines in July 1992. Based on the CEC's evaluation of these studies, the research results remain inconclusive. In 1993 the Public Utilities Commission (PUC) issued its EMF policy. The PUC also concluded that studies did not show a relationship between EMFs and health effects. The CEC has not established regulatory limits on the allowable strength of electric and magnetic fields from high-voltage transmission lines. Instead, they require utilities to adopt no- and low-cost measures to avoid increasing EMF exposure when economically feasible.¹⁸

In 1991, the City of Roseville Electric Department adopted a policy of "Prudent Action" regarding EMF. This policy which has been in effect for the last five years initiated the following activities in the City:

- Monitor EMF research and studies
- Share information with the Roseville Community
- Conduct an EMF measurement program
- Consider EMF in the design of distribution facilities
- Work with utilities in acquiring and sharing information
- Support EMF research efforts.

Since the policy was adopted, the Electric Department has been actively implementing these recommended actions to provide the community and their customers with up to date information about EMF.

4.8.3 REGULATORY SETTING

The following discussion summarizes federal, state, and local regulatory authorities pertaining to hazardous materials management and cleanup. Additional discussion about specific laws and regulations is contained in Appendix E, *Regulatory Compliance Overview for the Management of Hazardous Materials*.

Federal

Many federal agencies regulate hazardous materials. These include the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Nuclear Regulatory Commission (NRC), and the Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR).

State

The California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES) establish regulations governing the use of hazardous materials in the state. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. Chemical suppliers are responsible for complying with all applicable packaging, labeling and shipping regulations.

Within Cal/EPA, the Department of Toxic Substance Control (DTSC), formerly a division within the DHS, has primary regulatory responsibility. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport and disposal of hazardous materials under the authority of the Hazardous Waste Control Law (HWCL).

State regulations applicable to hazardous materials are contained primarily in Title 22 of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials management. The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) regulate surface and groundwater quality according to the provisions of the Porter-Cologne Water Quality Act, the Toxic Pits Cleanup Act, Underground Tank Law, and Clean Water Act.

Local

Placer County and the City of Roseville are responsible for enforcing many state regulations governing hazardous materials management, including waste generation, minimization, and storage, and underground storage tanks.

County

In addition to ensuring implementation of the Hazardous Waste Management Plan described above, the Placer County Department of Health and Medical Services, Environmental Health Division (PCDEH), regulates the use, storage, and disposal of hazardous materials in Placer

County by issuing permits, monitoring regulatory compliance, performing inspections, investigating complaints, and other enforcement activities. PCDEH also reviews technical aspects of hazardous waste site cleanups, and mitigation of certain contaminated sites resulting from leaking underground storage tanks (USTs).

Other County offices also perform hazardous material management activities. The Placer County Office of Emergency Services (PCOES) maintains an inventory of hazardous materials in the county and provides emergency planning and response services in conjunction with the City of Roseville Fire Department. Application of pesticides is regulated, monitored, and enforced by the Placer County Agricultural Commissioner. Air quality is regulated, monitored, and enforced by the Placer County Air Pollution Control District (PCAPCD).

City

The City of Roseville Fire Department is responsible for enforcing UST regulations, which include issuing permits for tank use and removal and annual inspections. The Fire Department also oversees cleanup of soil contamination related to leaking USTs in cooperation with the County and the RWQCB. As described above, the Roseville Fire Department also inspects and monitors facilities required to comply with federal and state hazardous materials inventory and reporting regulations and provides emergency response in the event of an incident involving hazardous materials.

The City of Roseville's Environmental Utilities Department is responsible for ensuring compliance with the Source Reduction and Recovery Element (SRRE) provisions of the Integrated Waste Management Act (AB 939), which includes guidelines for the management of household hazardous waste.

Minimum setback requirements for land uses adjoining existing and designated future residential areas are specified in the North Roseville Area Design Guidelines. A 35-foot setback is required for landscape screening. In addition, a 10-foot-wide landscape zone is required adjacent to the front and sides of each building or structure for all uses within designated Light Industrial and Commercial areas. Although the City of Roseville does not have a specific policy that addresses minimum setback requirements for land uses that could involve the use of hazardous materials, existing City setback requirements would provide some level of protection from accidental releases. North Roseville Area Design Guidelines also require that to prevent any spilled materials from entering the storm drainage system, grading and drainage for areas utilized for the handling and storage of chemicals shall be designed to provide an intermediate containment area.

4.8.4 IMPACTS

Method of Analysis

For purposes of this analysis, the typical use of hazardous materials and their effects were qualitatively assessed through review and evaluation of available documents that identified potential contaminants and hazardous materials users within the project area and its vicinity.

Information regarding hazardous materials use, emergency planning, and transportation was obtained from agency files and discussions with State and local agency staff. City of Roseville planning documents were reviewed to qualitatively assess the potential for hazardous materials use and accidents in future development and at industrial uses adjacent to the project area. Published information regarding the potential hazards generated by EMFs and related City of Roseville "prudent action" policy were also reviewed. Water-quality impacts related to past uses of the project area, the presence of underground tanks, and disposal of hazardous materials to the City's wastewater treatment system are discussed in Section 4.4, Hydrology and Water Quality. The potential for airborne releases of hazardous materials or odors from adjacent industrial facilities are discussed in Section 4.10, Air Quality.

Standards of Significance

For the purpose of this EIR, an impact is considered significant if the Proposed Project could:

- result in the development of contaminated lands resulting in potential exposure of people to contaminated soil or groundwater;
- use, produce, store, transport, or dispose of materials in a manner that would exceed health standards, and thus pose an unacceptable health hazard to people;
- interfere with emergency response plans or emergency evacuation plans; or
- expose people to potential hazards associated with high-voltage transmission lines.

IMPACT 4.8-1:

Increased potential for accidental release or spill from new commercial and industrial uses

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policies AA-11, SE-1, and SE-5

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The use of hazardous materials in light-industrial and commercial operations within the project area could result in an accidental release or spill. Excluding the existing Hewlett-Packard facility (approximately 165 acres), the Proposed Project would allow up to an additional approximately 300 acres that could contain businesses in which hazardous materials may be used. The development of this acreage according to allowable uses would increase the number of facilities

using and storing hazardous materials within the project area. People working in these facilities could be exposed to accidental releases. Adjacent residents could be exposed to accidental releases at nearby commercial or light industrial facilities. Potential hazards associated with the discharge of wastewater from light-industrial facilities are discussed in Chapter 4.4, Hydrology and Water Quality. Potential hazards and associated impacts related to airborne emissions or releases of hazardous materials are discussed in Chapter 4.10, Air Quality.

The City of Roseville General Plan contains the following policies intended to minimize the risk of exposure to hazardous materials:

- AA-11. Protect city residents from the risks involved in the transport, distribution, storage, use, and disposal of hazardous materials.
- SE-1. Require the disclosure of the use and storage of hazardous materials in existing and proposed industrial and commercial activities, and siting of hazardous waste disposal facilities, in accordance with Placer County guidelines and State law.
- SE-5. Pursue the implementation of a permit program for hazardous materials users that are required to submit "long form" Hazardous Material Management Plan, pursuant to State law.

General Plan Policy AA-11 is intended to ensure that facilities comply with applicable hazardous materials regulations and commits the City to maintaining compatibility between facilities that use hazardous materials and surrounding land uses to ensure public safety. The policy also states that consideration of hazardous materials use shall be included in the development review process for specific projects.

Hazardous materials disclosure provisions of General Plan Policy SE-1 are intended to ensure that preventative steps are taken to minimize the occurrence of hazardous materials incidents and to establish response procedures should such incidents occur. For example, new light-industrial and some commercial businesses would be required to submit lists of hazardous materials in their facilities, prepare plans for managing these materials pursuant to applicable laws and regulations, and prepare plans for mitigating releases. This information would enable the Roseville and Placer County Fire Departments to provide an adequate response. The permit fee component of Policy SE-5 would allow the Roseville Fire Department to recover costs associated with administering this program.

According to Roseville Fire Department personnel and a review of available information, hazardous-materials-related incidents, such as an inadvertent release of material, have been minimal in existing facilities. Where there was a release, facility operators corrected the situation to minimize the potential for a repeat occurrence. It is probable that new facilities would have similar, minor problems with inadvertent releases.

In most cases, existing facilities are generally in compliance with hazardous material reporting laws. The Roseville Fire Department has requested that H.B. Fuller prepare a Risk Management and Prevention Plan pursuant to California Health and Safety Code, Chapter 6.95, but to date the facility has not fully complied with this requirement.¹⁹ However, assuming all existing and new

facilities would be in full compliance with applicable laws and regulations and the Roseville Fire Department would continue to perform inspections and enforce hazardous materials use and storage requirements, the likelihood of a release from new facilities would be minimized.

Implementation of existing General Plan policies and federal, State and local laws would reduce impacts associated with the use of hazardous materials in the project area to a less-than-significant level.

IMPACT 4.8-2:

Increased risk of accidental releases or spills associated with increased transport of hazardous materials from the project area

Applicable City

Policies and Regulations:

General Plan Policies SE-3, SE-4

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Although strict regulatory requirements apply to transportation of hazardous materials, the transport of hazardous materials could result in spills, particularly from vehicle accidents. The expected growth in light-industrial and commercial uses in the project area would increase the number of businesses using hazardous materials. This would result in an increase in the transport of hazardous materials from the project area. As described above, hazardous materials may generally be transported on roadways designated as commercial in the city. The City of Roseville General Plan contains the following policies:

- SE-3. Cooperate fully with Southern Pacific Railroad and other agencies, such as the California Highway Patrol, in the event of a hazardous material emergency in compliance with State and Federal laws and regulations.
- SE-4. Develop a hazardous materials truck route through the City of Roseville and limit pick-up and delivery of hazardous materials during peak traffic hours.

While policy SE-4 does not eliminate the potential for truck accidents and resulting spills, it would reduce the frequency of occurrences and would limit the number of people that could be exposed. In the event of a spill within the project area, the Roseville Fire Department and other agencies as needed would provide emergency response.

IMPACT 4.8-3:	Increased use of hazardous materials within the project area could require additional emergency response capabilities
Applicable City	
Policies and Regulations:	General Plan Policies AA-11, SA-4, SD-1 through SD-9 and SE-1 through SE-5
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

According to the Safety Element of the Roseville General Plan, targeted response times have not been met consistently, and there is a need for additional fire service. Two fire stations are planned in the project vicinity, the Del Webb station and the NCRSP station.

In addition to Roseville Fire Department hazardous materials response protocols, operational and administrative procedures contained in the Emergency Plan would be important in safely managing a major hazardous materials incident involving the project area.

The City of Roseville's General Plan contains the following emergency response policies:

- AA-11. Protect City residents from the risks involved in the transport, distribution, storage, use, and disposal of hazardous materials.
- SA-4. Comply with state seismic and building standards in the design and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacturing and storing facilities, bridges and large public assembly halls.
- SD-1. Continue to pursue and promote fire prevention programs and standards.
- SD-2. Strive to achieve service levels goals.
- SD-4. Provide highly trained personnel to ensure effective suppression of fires.
- SD-5. Seek to reduce fires by fully investigating the cause of each fire and use resultant findings to develop more effective fire prevention programs.
- SD-6. Phase the timing of construction of fire stations to be available to serve the surrounding service area.
- SD-8. Provide a comprehensive emergency medical service program to aid citizens in need of rescue or medical assistance.

- SD-9. Continually update the Roseville Multi-hazard Function Plan and ensure that participants are prepared to efficiently carry out assigned functions.
- SE-1. Require the disclosure of the use and storage of hazardous materials in existing and proposed industrial and commercial activities, and siting of hazardous waste disposal facilities, in accordance with Placer County guidelines and State law.
- SE-2. Work with Placer County and other public agencies to inform consumers about household use and disposal of hazardous materials.
- SE-3. Cooperate fully with Southern Pacific Railroad and other agencies, such as the California Highway Patrol, in the event of a hazardous material emergency in compliance with State and Federal laws and regulations.
- SE-4. Develop a hazardous materials truck route through the City of Roseville and limit pick-up and delivery of hazardous materials during peak traffic hours.
- SE-5. Pursue the implementation of a permit program for hazardous materials users that are required to submit "long form" Hazardous Material Management Plan, pursuant to State law.

In addition, the on-site emergency response training for accidental spills of hazardous materials would be addressed in the Hazardous Materials Business Plan prepared by Hewlett-Packard addressing hazardous materials incident response for designated light-industrial and commercial uses which would reduce impacts to a less-than-significant level.

IMPACT 4.8-4:

Existing or unknown hazards related to past uses within or adjacent to the project area

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Preliminary site assessments have been performed for the remaining 300-acre site to be developed. Based on the information presented in the assessment reports, no locations have been identified that could pose hazards-related problems. However, it is possible that not all septic tanks, wells, or other underground storage devices or conveyance systems have been identified, because these could have been installed prior to permitting requirements, or additional

information could have become available in agency files or databases since 1991, when the last preliminary site assessment was performed. On the other hand, liquid conveyance systems (e.g., sewer lines) are known to exist within the existing developed area.

Tanks and Conveyance Systems

A previously unknown UST, uncovered or disturbed during excavation, could threaten the health and safety of site workers. As with a fuel spill from above-ground activities, a leaking underground storage tank could contaminate soil or groundwater and could also pose a possible explosion hazard. If a UST were discovered during project area construction activities, it would have to be closed in place or removed. Removal activities could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors. Risks posed by USTs would be minimized by managing the tank according to Placer County guidelines. Further, it is assumed that City of Roseville Public Works would be able to identify and locate buried conveyance systems prior to construction activities to ensure these are not encountered. Similarly, it is assumed the City would ensure that any above-ground containers or delivery systems are managed safely during construction activities.

Contaminated Soil and Groundwater

If not appropriately identified and managed, the presence of hazardous materials and/or site contamination could have adverse health and safety effects on persons near contaminated sites. Exposure to contaminants could occur from the materials themselves, or if the contaminants migrated from the contaminated zone to surrounding areas either before or after the surrounding areas were developed, or if contaminated zones were disturbed by future development or remediation work at the contaminated location. Therefore, the hazards associated with construction activities within the project area are not known.

Site investigation and remediation measures, in themselves, could also have adverse impacts. During site investigation or remediation, workers and possibly the nearby public could be exposed to chemical compounds in soils, soil gases, or groundwater. The public and the environment could be exposed to airborne chemical compounds migrating from a site under remediation. Accidents during transportation of contaminated soils or groundwater could lead to exposure of the public and the environment to the chemical compounds.

Potential adverse impacts of site investigation or remediation would be mitigated, in part, by legally required safety and hazardous waste handling and transportation precautions. Specific plans would be developed to protect workers and the public during site investigation or remediation. These measures, along with application of state and regional clean-up standards, would serve to protect human health and the environment during site remediation, thus minimizing investigation or remediation impacts.

The major hazards-related impacts of environmental cleanup if hazardous materials are encountered during project development would be beneficial over the long term. Remediation of contaminated sites would eliminate the health threats posed by hazardous wastes and prevent workers and the public from encountering such materials in the event of any future excavation

at the site. Removal of the hazardous materials would also eliminate a potential local source of groundwater contamination; such removal would be beneficial in the long run. Proper handling and disposal of excavated contaminated materials would preempt potential health, safety, or environmental effects of the contaminated soil or groundwater.

Because the identification and remediation of USTs and contaminated soils and groundwater are fully regulated by the federal, state and local governments, this is considered a less-than-significant impact.

IMPACT 4.8-5:**Potential effects of electromagnetic fields (EMFs)**

Applicable City

Policies and Regulations:

General Plan Policies SG-1 and SG-2

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Development of the Proposed Project could expose employees and visitors to potential hazards associated with EMFs generated by the high-voltage transmission lines. A 60 kV line runs along Foothills Boulevard, adjacent to the existing HP facility and proposed commercial and light industrial designations. In addition, a substation site, which could eventually house an electrical substation, is designated on the western side of the proposed site.

As discussed above, a relationship between EMF exposure and health effects has not been scientifically proven. While there are not enough data to determine potential effects of EMFs, the City's General Plan contains the following policies to reduce the impact of EMFs:

SG-1. Ensure implementation of the Electric Department's policy of "prudent action" with respect to EMF issues.

SG-2. Limit public use within electrical power line easements to parking and low-density recreational activities such as undeveloped nature areas, bike or jogging paths.

In the absence of more conclusive information, and with implementation of existing City Policies, the impact of the Proposed Project with respect to EMFs would be less than significant.

4.8.5 MITIGATION MEASURES

None required.

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4.9 TRANSPORTATION AND CIRCULATION

4.9 TRANSPORTATION AND CIRCULATION

4.9.1 INTRODUCTION

This section describes the existing and proposed transportation and circulation system serving the project, including roadways, transit service and bicycle routes. It also presents the standards of significance, evaluation methodology and impacts associated with the Proposed Project. The setting and impacts cover the entire transportation system of Roseville. Impacts of the Proposed Project on roadways outside of Roseville are also addressed.

4.9.2 ENVIRONMENTAL SETTING

The evaluation of the operating characteristics of the existing circulation system in the City of Roseville is the initial task in defining the impacts of the Proposed Project on the circulation system. In order to understand the existing travel patterns and conditions, all major aspects of transportation in Roseville were inventoried and analyzed. The following sections briefly discuss roadway functions, traffic volumes and traffic levels of service, as well as transit, truck and rail services, and bicycle routes.

Streets and Highways

Roadway Functional Classification

The existing street network in the City of Roseville is a product both of roadways that have provided access to the older portions of the City for decades and roadways that were designed to serve the newer specific plan areas. In each of the City's five specific plans and the North Industrial area, arterial and collector roadway classifications have been defined and a number of these roadways have been constructed. In the older portions of the City, roadways were classified as arterial or collector roadways in the 1992 General Plan Update.

The primary function of arterial roadways is to move large volumes of traffic through the City to other sections and beyond. In the specific plan areas, the right-of-way for arterials varies from 76 feet to 100 feet and generally incorporates four to six travel lanes, bike lanes and a landscaped median. On-street parking on arterials in the specific plan areas is prohibited, and access is limited to minimize cross traffic turning movements in order to improve traffic safety and allow more efficient traffic flow. Outside the specific plan areas, some roadways function as arterials due to the current high traffic volumes and their key linkages between one section of the City and another. For these roadways, current right-of-way widths vary, but most contain more than two traffic lanes.

Collector streets generally link local residential streets and the commercial and office parking areas to the arterials. In the specific plan areas, the right of way for these streets varies from 54 feet to 60 feet and contain two traffic lanes and bike lanes. Outside the specific plan areas, a number of roadways function as collector roadways due to moderate traffic volumes and their linkage to the arterial roadway system. The right-of-way widths for these roadways vary, but most contain two traffic lanes.

Table 4.9-1 provides a summary of the existing arterial and collector roadways in the five specific plan areas as well as the Infill and North Industrial areas. Figure 4.9-1 illustrates the arterial/collector roadway system that currently serves the City of Roseville. It should be noted that some roadways in the specific plan areas are not currently constructed and therefore, are not included in Table 4.9-1. As noted in the table, other roadways are only partially complete. Also included on Figure 4.9-1 is the State highway system that serves the Roseville area.

The existing roadways in the vicinity of the Proposed Project are essentially the same as those listed in Table 4.9-1 that also serve the Northwest Specific Plan Area and the North Roseville Industrial Area. They include:

- Blue Oaks Boulevard
- Foothills Boulevard
- Junction Boulevard
- Pleasant Grove Boulevard
- Roseville Parkway (not constructed in vicinity of Proposed Project)
- Woodcreek Oaks Boulevard

The existing State highway and arterial systems within the City of Roseville are described below.

State Highway System

Roseville is served by an interstate highway (I-80) and a State highway (SR-65). I-80 is a transcontinental highway that links Roseville not only to Sacramento and the Bay Area, but to the rest of the United States via its crossing of the Sierras. It carries commute traffic between Placer and Sacramento counties, as well as interregional and interstate business, freight, tourist and recreational travel. Roseville is connected to I-80 by five interchanges: Riverside Avenue, Douglas Boulevard, Eureka Road/Atlantic Street, Taylor Road and SR-65. This freeway has eight lanes west of Riverside Avenue and six lanes through the remainder of Roseville. The traffic volumes range from 130,000 vehicles per day (veh/day) west of Riverside Avenue to 94,000 veh/day west of SR-65.

SR-65 is a north-south State Route that connects Roseville with the cities of Lincoln and Marysville (via Highway 70). This highway is a four-lane freeway between I-80 and Blue Oaks Boulevard and a two-lane conventional highway north of Blue Oaks Boulevard. Access to SR 65 is provided by three interchanges: I-80, Harding Boulevard/Stanford Ranch Road, and Blue Oaks Boulevard. Traffic volumes range from about 27,000 veh/day between I-80 and Harding to 16,800 veh/day north of Blue Oaks.

TABLE 4.9-1

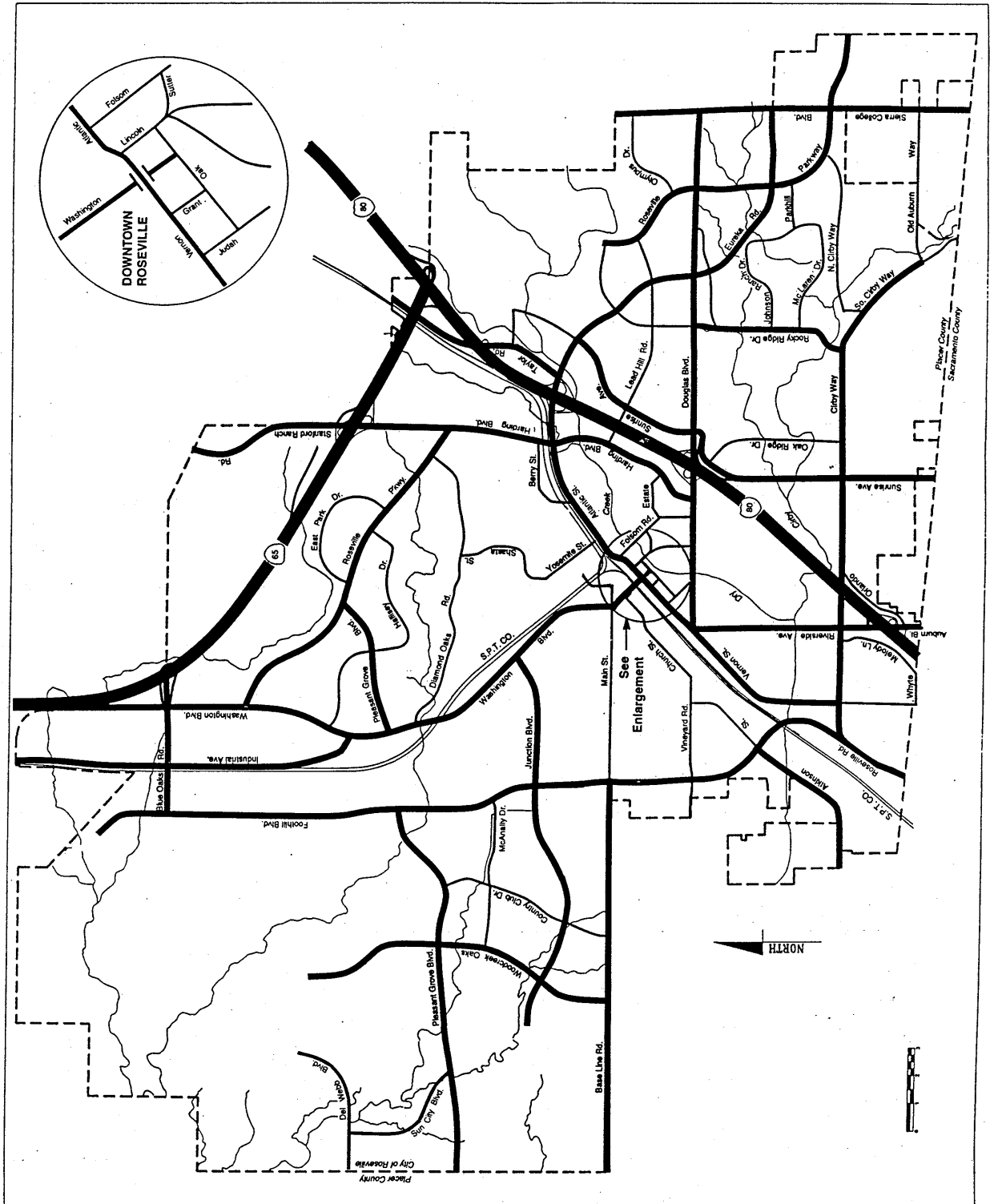
**EXISTING ARTERIAL AND COLLECTOR
SYSTEM IN THE CITY OF ROSEVILLE¹**

Subarea	Arterials	Collectors
Infill	Vernon Street (north of Cirby) Atlantic Street (Vernon to I-80) Cirby Way Riverside Avenue Auburn Boulevard Roseville Road Harding Boulevard (north of Douglas) Douglas Boulevard Atkinson Street (south of Foothills) Rocky Ridge Drive Sunrise Avenue	Main Street Folsom Road Vineyard Road Church Street (west of Washington) Atkinson Street (Foothills to Main) Shasta Street (north of Yosemite) Vernon Street (south of Cirby) Sutter Avenue Lincoln Street (Sierra to Main and Vernon to Sutter) Oak Street (Judah to Lincoln) Grant Street Judah Street Estates Drive Melody Lane West Whyte Avenue Oak Ridge Drive Orlando Avenue Berry Street Yosemite Street Old Auburn Road (South Cirby to Sacramento County Line)
Northwest Roseville Specific Plan	Pleasant Grove Boulevard Foothills Boulevard Woodcreek Oaks Boulevard Junction Boulevard Washington Boulevard Baseline Road	Country Club Drive McAnally Drive
North Central Roseville Specific Plan	Washington Boulevard Harding Boulevard/Stanford Ranch Road Roseville Parkway Pleasant Grove Boulevard ²	Hallisey Drive Diamond Oaks Road East Park Drive
Northeast Roseville Specific Plan	Sunrise Avenue Roseville Parkway ² Eureka Road Douglas Boulevard Sierra College Boulevard Taylor Road	Lead Hill Road Rocky Ridge Drive (north of Douglas Blvd.) Olympus Drive

TABLE 4.9-1**EXISTING ARTERIAL AND COLLECTOR
SYSTEM IN THE CITY OF ROSEVILLE¹**

Subarea	Arterials	Collectors
Southeast Roseville Specific Plan	Douglas Boulevard Roseville Parkway Sierra College Boulevard Eureka Road Rocky Ridge Drive (south of Douglas Blvd.)	Johnson Ranch Drive McLaren Drive Professional Drive Parkhill Road Old Auburn Road (south Cirby to Roseville Parkway) North Cirby Way
Del Webb Specific Plan	Fiddymment Road Blue Oaks Boulevard Pleasant Grove Boulevard	Del Webb Boulevard ² Sun City Boulevard
North Roseville Industrial Area	Washington Boulevard Industrial Avenue Foothills Boulevard Blue Oaks Boulevard ² Roseville Parkway ²	
NOTES: ¹ See Figure 4.9-1. Some roadways in the subareas are not constructed, and have not been reflected on this table or Figure 4.9-1. ² Portions of roadway have not yet been completed.		
SOURCE: City of Roseville, 1992.		

Figure 4.9-1
Existing Arterial/Collector
Roadway System
Hewlett-Packard
Master Plan EIR



DKS Associates

Arterial Street System

The arterial network may be the most important system of roads within the overall street system. It links residential areas to both commercial and employment centers and links all of these uses to the regional freeway system. The existing arterial network in the City of Roseville is described below. The traffic volumes associated with each roadway are based on traffic counts collected between 1993 and 1995. In some instances, traffic volumes are not included because the most recent count data available was collected prior to 1993 and may no longer be an accurate indication of current traffic conditions.

Atkinson Street is a north-south roadway that connects PFE Road to Main Street. South of Foothills Boulevard, it is a two lane arterial that serves 6,600 veh/day (just north of PFE Road). Between Foothills Boulevard and Vineyard Road it is a two-lane collector. North of Vineyard Road it is a local roadway that currently carries 2,900 veh/day.

Atlantic Street connects downtown Roseville to I-80 as well as to the Northeast Specific Plan Area via Eureka Road. It is four lanes wide at I-80 but narrows to two lanes west of Harding Boulevard. It remains two lanes until it changes into Vernon Street in the downtown area. Between Vernon Street and Harding Boulevard, Atlantic Street carries about 16,700 veh/day. Both Eureka Road and Atlantic Street handle moderate daily traffic volumes (21,800 veh/day and 25,000 veh/day, respectively) in the vicinity of the I-80 interchange.

Baseline Road is an east-west arterial that links west Roseville with the Dry Creek Area and SR-99. From the city limits east, Baseline Road is a two-lane road until it becomes Main Street at Foothills Boulevard. Daily volumes on Baseline Road east of Country Club Drive are about 8,700 veh/day.

Blue Oaks Boulevard is a four lane east-west arterial that links SR-65 to Foothills Boulevard. It serves 9,000 veh/day, based on the most recent count data available (1991).

Cirby Way is another major east-west arterial. It is a four-lane road that extends from Roseville Road/Foothills Boulevard, passes over I-80 and terminates at Old Auburn Road. Cirby Way serves its highest daily volumes west of Riverside Avenue (32,500 veh/day) and west of Sunrise Avenue (28,800 veh/day). On Old Auburn Road (south of Cirby Way), daily volumes are significantly less (10,000 veh/day).

Douglas Boulevard carries the highest daily traffic volume of all the arterials in Roseville. It connects east and west Roseville to each other as well as to I-80 and Granite Bay and is bordered on both sides by mostly commercial and office uses. It has six lanes from Sierra College Boulevard to Sunrise Avenue, but narrows to four lanes west of Sunrise Avenue. It remains four lanes through the Douglas Boulevard/I-80 interchange until Park Drive where it further narrows to two lanes, until it ends at Vernon Street. East of Sierra College Boulevard, Douglas Boulevard is four lanes wide. Traffic volumes are heaviest on Douglas Boulevard east of Folsom Road (33,100 veh/day) and west of Sunrise Avenue (51,800 veh/day).

Eureka Road is a major east-west arterial that links southeast to northeast Roseville and provides access to I-80 and downtown Roseville via Atlantic Street. Eureka Road contains four lanes from Sierra College Boulevard to south of Douglas Boulevard. From there it widens to six lanes and continues roughly northwest until it intersects with I-80. Daily traffic volumes on Eureka Road are heaviest between Sunrise Avenue and Rocky Ridge Drive (21,000 veh/day).

Fiddymment Road is a two-lane, north-south arterial that runs along the western city limit of Roseville from Baseline Road north into Placer County. Daily traffic volumes on Fiddymment Road are approximately 5,000 veh/day.

Foothills Boulevard is the major north-south arterial in Roseville west of I-80. It extends as far south as Cirby Way where, it becomes Roseville Road and continues south into Sacramento and north to the northern city limits. This roadway (along with Washington Boulevard, Harding Boulevard, and SR-65) provides one of only four grade-separated crossings of the Southern Pacific mainline. This four-lane arterial serves its highest daily volume south of Atkinson Road (27,700 veh/day in 1991). Significant daily volumes also occur between Baseline Road and Junction Boulevard (18,600 veh/day).

Harding Boulevard is a major north-south arterial that runs from Douglas Boulevard to SR-65. From Douglas Boulevard to Atlantic Street, this four-lane arterial parallels I-80 serving a commercial area and has daily traffic volumes that range from 12,800 veh/day (north of Douglas Boulevard) to 11,700 veh/day (south of Atlantic Street). Harding Boulevard was recently extended through the North Central Specific Project Area to SR-65. Traffic volumes on this section of Harding Boulevard average 8,200 veh/day.

Industrial Avenue extends from Washington Boulevard north, past the north city limit of Roseville, and into the Sunset General Plan Area. It is a two lane arterial that runs north-south and serves 1,900 veh/day (south of Blue Oaks Boulevard).

Junction Boulevard is an east-west arterial in west Roseville that has four lanes east of Foothills Boulevard and four lanes west of Foothills Boulevard. Daily volumes on Junction Boulevard reach 11,300 veh/day between Foothills Boulevard and Washington Boulevard but drop west of Foothills Boulevard to 6,800 veh/day.

Pleasant Grove Boulevard is a four-lane, east-west arterial that extends from Woodcreek Oaks Boulevard to Foothills Boulevard and connects the Northwest Specific Project area to Foothills Boulevard. It has also been constructed as a six-lane facility between Washington Boulevard and Roseville Parkway. Pleasant Grove Boulevard was recently extended west from Woodcreek oaks to Fiddymment Road as a two-lane arterial. Daily traffic volumes on Pleasant Grove Boulevard range from 8,400 veh/day west of Foothills to 3,300 west of Woodcreek Oaks.

Riverside Avenue, extends north from Auburn Boulevard (Sacramento County) as a major north-south arterial. It connects south/central Roseville to I-80 and Sacramento County. Auburn Boulevard is a four-lane arterial that extends from the Sacramento County line north to I-80, where it becomes Riverside Avenue. Riverside Avenue continues north from I-80 to Douglas

Boulevard and Vernon Street. Riverside Avenue has four lanes south of 6th Street and two lanes north of 6th Street. Both Auburn Boulevard and Riverside Avenue serve heavy daily traffic volumes near the I-80 interchange (29,300 veh/day and 42,700 veh/day, respectively).

Rocky Ridge Drive is a four-lane north-south arterial that begins at Cirby Way and extends north to Roseville Parkway. Daily traffic volumes on Rocky Ridge Drive range from 16,600 veh/day north of Cirby Way to 9,600 veh/day between Douglas Boulevard and Lead Hill Road.

Roseville Parkway is an arterial that will eventually link the Southeast, Northeast and North Central Specific plan areas, as well as the North Industrial Area. From Placer County east of Roseville to Sierra College Boulevard it is two lanes wide. From Sierra College Boulevard to Douglas Boulevard, it is four lanes wide and serves an average daily traffic of 1,400 veh/day. North of Douglas Boulevard, until it ends at Rocky Ridge Drive, it is six lanes wide and carries a daily traffic volume of 1,100 veh/day. Roseville Parkway was recently constructed between Harding Boulevard and Pleasant Grove Boulevard with six lanes, and between Pleasant Grove Boulevard and Washington Boulevard with two lanes.

Roseville Road is a north-south arterial that extends south from Foothills Boulevard and runs parallel to I-80 from the end of Cirby Way to the southern city limit of Roseville. This two-lane arterial serves 7,400 veh/day.

Sierra College Boulevard is another major north-south arterial on the eastern border of Roseville. Portions of this roadway have two lanes while other portions have four lanes. This arterial carries between 23,600 veh/day south of Old Auburn Road and 19,500 veh/day south of Douglas Boulevard.

Stanford Ranch Road currently extends from the SR-65/Stanford Ranch interchange north, into the City of Rocklin. It is currently a six-lane arterial that carries 20,900 veh/day.

Sunrise Avenue is a major north-south arterial in Roseville. It links central Roseville to Sacramento County and is the primary arterial linking north and south Roseville east of I-80. Sunrise Avenue has four lanes from the Sacramento County line to Lead Hill Boulevard, where it widens to six lanes until it ends at Roseville Parkway. Daily volumes on Sunrise Avenue are highest between Oak Ridge Drive and Douglas Boulevard (32,200 veh/day) and south of Cirby Way (32,500 veh/day). Volumes are somewhat lower between Cirby Way and Oak Ridge Drive (28,300 veh/day) and decrease significantly north of Douglas Boulevard (14,300 veh/day) south of Eureka Road.

Taylor Road is a north-south arterial which connects Roseville to the City of Rocklin. From Atlantic Street to the Taylor Road/I-80 interchange, it is a four-lane arterial. It narrows to two lanes north of I-80.

Vernon Street is a four lane north-south arterial that connects Douglas Boulevard and Riverside Avenue on the south side of downtown Roseville to Atlantic Street on the north side of downtown. Daily volumes on this segment of Vernon Street reach 12,000 veh/day. South of Douglas Boulevard, Vernon Street is a two-lane arterial that serves 8,100 veh/day.

Washington Boulevard is a major north-south arterial. It connects SR-65 and Blue Oaks Boulevard to Vernon Street and terminates at Oak Street in downtown Roseville. From Blue Oaks Boulevard to north of Junction Boulevard, it is a two-lane road that serves between 4,000 veh/day (south of Blue Oaks Boulevard) to 6,700 veh/day (south of Diamond Oaks Road). From Junction Boulevard to Oak Street, it is a four-lane arterial on which the maximum daily volume is 12,800 veh/day (between Vernon Street and Oak Avenue). Along with Foothills Boulevard, Harding Boulevard, and SR-65, it provides one of four grade-separated crossings of the Southern Pacific mainline tracks.

Woodcreek Oaks Boulevard is a four-lane, north-south arterial that extends from Baseline Road to north of Pleasant Grove Boulevard and connects the Northwest Specific Plan area to Baseline Road.

Traffic Volumes

One of the key evaluation measures of a City's roadway system is a comparison of different land use scenarios based on both daily and peak period traffic volumes to the capacity of the major roadway system. The traffic data used in this existing conditions analysis was provided by the City of Roseville Public Works Department, Traffic Division. Average daily traffic volumes (ADT) represent the total volume passing a point or segment of roadway, in both directions, on an average weekday. ADTs on the functional network are shown on Figure 4.9-2.

Traffic Levels of Service

The evaluation of traffic volumes on the roadway network provides an understanding of the general nature of travel conditions in the City of Roseville. However, traffic volumes do not indicate the quality of service provided by the street facilities nor the ability of the street network to carry additional traffic. To accomplish this, the concept of "level of service" has been developed.

Level of service is a qualitative measure of the effect of a number of factors which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience. Levels of service are designated "A" through "F" from the best to worst, which cover the entire range of traffic operations that might occur. Level of service (LOS) "E" describes conditions approaching and at maximum capacity. Under the General Plan, the City of Roseville has set a standard of LOS "C" for its roadway system. Consequently, LOS "A", "B" and "C" are considered acceptable, while "D", "E" and "F" are unacceptable. The General Plan level of service policy, however, would allow LOS "D" at locations in the City's infill area where the City decides that the impacts and/or costs of the required improvements are not worth the benefits of having LOS "C" for all hours of the day.

Intersections control the traffic flow and capacity of Roseville's arterial/collector system. As in the 1992 General Plan Update, intersection operations were evaluated using the *Transportation Circular 212* (critical movement) method. Table 4.9-2 presents the level of service categories for signalized intersections considered in this analysis and provides a definition of each category with the corresponding volume-to-capacity ratios. The pm peak hour is used in the operational analysis of the City's roadway system since it generally represents the highest hour for overall

[illegible]

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TABLE 4.9-2

LEVEL OF SERVICE DEFINITIONS SIGNALIZED INTERSECTIONS

Level of Service (LOS)	Volume to Capacity Ratio ¹	Description
A	0.00-0.59	Free Flow/Insignificant Delays: No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	0.60-0.69	Stable Operation/Minimal Delays: An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles.
C	0.70-0.81	Stable Operation/Acceptable Delays: Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	0.82-0.89	Approaching Unstable/Tolerable Delays: Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	0.90-0.99	Unstable Operation/Significant Delays: Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
F	≥ 1.00	Forced Flow/Excessive Delays: Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

NOTES:

¹ The ratio of the traffic volume demand at an intersection to the capacity of the intersection.

² The City of Roseville has established a volume-to-capacity ratio of 0.81 as the LOS C threshold.

SOURCE: Transportation Research Board, 1985.

traffic volumes during the day. Table 4.9-3 summarizes the existing levels of service during the pm peak hour at 15 key intersections in the vicinity of the project site. For analysis purposes, it has been assumed that the proposed traffic signalization of the intersection of Foothills Boulevard and Pleasant Grove Boulevard has been implemented.

Transit

Transit service is currently provided to the residents of the City of Roseville by two "fixed route" systems: the Roseville Commuter Service, Roseville Transit, and Placer County Transit. Their current transit routes are shown on Figure 4.9-3. Currently, the project is not served by Roseville Transit, with the closest bus stop at the intersection of Foothills Boulevard and Pleasant Grove Boulevard. Other transit systems in Roseville include Roseville Area Dial-A-Ride (RADAR), taxi cab services, and Greyhound Bus Lines and Amtrak. These existing transit services are described below.

Roseville Commuter Service is a fixed route, scheduled transit system operated by the City of Roseville. It provides commute service between Roseville and downtown Sacramento. There are currently four runs in each direction during both the am (6 am to 8 am) and pm (4 pm to 6 pm) peak periods. Figure 4.9-3 shows the Roseville end of the transit route.

Roseville Transit (formerly RUSH) is a fixed route scheduled transit system operated by the City of Roseville within the city limits. There are currently eight scheduled routes. Six routes are "hubbed" at the Sierra Gardens Transfer Point. Timed transfer between routes take place every 30 minutes. Approximately one half of the Roseville Transit riders are elderly and disabled; at this time few commuters use the system. The Roseville Transit system connects to both Placer County Transit and Sacramento Regional Transit.

Placer County Transit is a fixed-route, scheduled transit system operated by Placer County that principally serves the I-80 and Highway 49 corridors. Some of the routes are "deviated". A "deviated route" means that the buses generally travel on a main route (i.e., I-80) but can deviate from that route up to a certain distance (one-quarter mile in the case of Placer County Transit) to serve the specific needs of transit patrons. Currently, there are eleven runs a day between Auburn and Roseville. This route does not deviate and its buses connect with the RUSH and Sacramento Regional Transit.

Roseville Area Dial-A-Ride (RADAR) is a door-to-door system operated by the City of Roseville within its city limits, seven days a week. As a "dial-a-ride" service, it does not operate on fixed-route schedules; 75 percent of its ridership is elderly and disabled.

Greyhound Bus Lines has a station at the intermodal facility (the Amtrak station) in Roseville. This station is a stop on the Sacramento to Auburn route and offers six to seven trips to Sacramento per day. From Sacramento, passengers can continue to destinations in any direction. ***Amtrak*** provides intercity rail service to Placer County via stations in Roseville and Colfax. The "California Zephyr" provides east-west service between Chicago and Oakland with one stop in each direction daily. Placer County residents can also access the California Zephyr at Truckee in Nevada County. Other Amtrak trains can be accessed at Sacramento, or by using the Amtrak Thruway Bus Connections to Roseville.

TABLE 4.9-3**EXISTING LEVELS OF SERVICE AT SIGNALIZED INTERSECTIONS
(PM PEAK HOUR)**

Intersection	Volume/Capacity Ratio	Level of Service
Washington Boulevard at Blue Oaks Boulevard	0.60	A
Foothills Boulevard at Blue Oaks Boulevard ¹	0.19	A
Foothills Boulevard at Albertson Drive	0.24	A
Foothills Boulevard at HP North Gate	0.37	A
Foothills Boulevard at HP Middle Gate	0.37	A
Foothills Boulevard at NEC/Misty Wood	0.31	A
Foothills Boulevard at Pleasant Grove Boulevard ¹	0.49	A
Foothills Boulevard at Junction Boulevard	0.66	B
Foothills Boulevard at Main Street	0.71	C
Foothills Boulevard at Vineyard Road	0.52	A
Foothills Boulevard at Cirby Way	0.77	C
Riverside Ave at Cirby Way	0.87	D
Woodcreek Oaks at Baseline Road	0.69	B
Woodcreek Oaks at Junction Boulevard	N/A ²	A
Woodcreek Oaks at Pleasant Grove	N/A ²	A

NOTES:

¹ Although not currently signalized, intersection meets signal warrants and is planned for traffic signalization in near future. Therefore, the traffic analysis assumes signalization at this location.

² Stop-controlled intersection. Volume-to-capacity ratio does not apply.

SOURCE: DKS Associates

Capitol Corridor Intercity Rail began operation in December, 1991. This service links the Bay Area with the Sacramento area and Placer County. At present, one round trip train accesses Roseville daily. Additional trains and an extension as far as Rocklin and Bowman are planned.

Taxi service is provided by several private companies.

Roseville is currently not served by Regional Transit's light rail transit (LRT) system, but an extension of LRT to Roseville is proposed in Roseville's "Long Range Master Transit Plan".

Bicycles

Bikeway Classification

Bikeways are defined as specific routes and classes which meet minimum design standards. Roseville generally follows Caltrans' design standards for the following classes of bikeways:

- Class I bikeways, which provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Class I bikeways are a minimum of 8 feet wide if two directional, 5 feet wide if one-way. A 2-foot graded area should parallel the bikeway on both sides, and the bikeway should be a minimum 5 feet from an adjacent roadway.
- Class II bikeways, which provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted. Class II bikeways are typically 6 to 8 feet wide in Roseville are separated from vehicle traffic by a solid white stripe.
- Class III bikeways, which provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

In addition, Roseville has an additional classification for bikeways.

- Class IA facilities are bicycle paths that have been developed as parallel sidewalk routes along major roadways and are separated from the roadway by a landscape strip. Caltrans does not consider sidewalk facilities to be Class I facilities, and does not recommend that they be signed as bicycle routes. However, Class IA facilities are still desirable for bicyclists of lower skill levels, such as children, as well as others who are hesitant to utilize on-street routes.

The City of Roseville recently adopted a Bikeway Master Plan, which provides guidelines for the development of a city-wide network of Class I, II, and III bicycle facilities and design standards (based on Caltrans standards) for new bicycle facilities within Roseville.

Existing Bikeways

Figure 4.9-4 shows the existing bikeways within Roseville city limits and all points that Roseville bikeways connect with Placer County bike routes. Each of the five specific plan areas contain significant bikeway elements within the project areas that are connected to each other. The existing bikeways in the City's Infill area and its specific plan areas are described below:

Infill Area. Existing Class I bike paths include route segments located in the floodways of Dry Creek through Royer Park, Cirby Creek, and Linda Creek, a small route from the end of Sierra Gardens Drive to Meadowlark, and for a portion of Sunrise Avenue between Sandringham and Kensington Drives. Developed Class II bike lanes are located along Harding Boulevard from Lead Hill Road to Atlantic Street and Sierra Gardens Drive between Douglas Boulevard and Santa Clara Drive. A Class III bike route exists along Keehner Avenue from Darling Way to Douglas Boulevard.

The City was just awarded a \$340,000 Congestion Management Air Quality (CMAQ) grant to extend the existing Miner's Ravine bikepath under Royer Park via a combination of class I, II, and III routes.

Folsom Road from Sutter Avenue to Douglas Boulevard was a Class II bike lane, but is not now. The extra road width required for the placement of a left turn lane on Folsom Road at Estates Drive was attained by removing the bike lane. In addition, according to the City's Engineering Department, Nevada, Ben Ezra, and Donner Avenues are no longer Class III bike routes.

Northwest Roseville Specific Plan Area. The specific plan includes Class IA and Class II bikeways along Woodcreek Oaks Boulevard, Country Club Drive, Foothills Boulevard, Junction Boulevard, Wakefield Road, Pleasant Grove Boulevard and portions of Baseline Road. Sections of this system have been developed. The specific plan also describes several recreation bicycling routes, along the power line easements from west of Woodcreek Oaks Boulevard to Washington Boulevard, through the floodway along Pleasant Grove Creek, and through the floodway of the South Branch of Pleasant Grove Creek to Parcel 21 (a ten-acre school site) and then south to connect with the power line easement bike trail. This bikeway system has not yet been fully developed. Class II bicycle facilities on newly constructed roadways are in place.

North Central Roseville Specific Plan Area. The specific plan shows Class IA bike paths and Class II bike lanes along Washington Boulevard north of Pleasant Grove Boulevard, Roseville Parkway, Pleasant Grove Boulevard, Harding Boulevard, Eastpark Drive and Collector D. Class II facilities were included on the recently constructed roadways in this specific plan area. These include Roseville Parkway, Pleasant Grove Boulevard and Harding Boulevard. Additional Class I bike paths are planned along lower watersheds, Antelope Creek, wetland preserves and adjacent to SR-65. Additional Class II bike lanes are planned along residential collectors. Two Class III bike route segments are planned to connect portions of the on-street Class I paths to the lower watershed areas. All local residential streets will be designated as Class III bike routes.

Northeast Roseville Specific Plan Area. The specific plan includes a bike trail along Miners Ravine extending from near the intersection of Taylor and Eureka Roads all the way along the Ravine, with a leg branching off to connect with Lead Hill Road and Roseville Parkway. The plan does not specifically show a bikeway system within the road rights-of-way, but does include an implementation policy to "include on-street bikeways for commuter bike use." Class I and Class II bikeways have been included in or are planned in the development of Eureka Road, Lead Hill Road, East Roseville Parkway, North Sunrise Avenue, Rocky Ridge Drive, Douglas Boulevard, Sierra College Boulevard and portions of Olympus Drive.

Southeast Roseville Specific Plan Area. According to this specific plan, Class IA and II bikeways are included within the rights-of-way of Eureka Road and Roseville Parkway from Douglas Boulevard to Sierra College Boulevard. Field inspection reveals that the section of Douglas Boulevard between Eureka Road and Sierra College Boulevard includes a Class II bike lane.

Del Webb Specific Plan Area. The specific plan includes off-street Class IA and on-street Class II bike lanes proposed as part of the development of Blue Oaks Boulevard, Fiddymment Road, Pleasant Grove Boulevard, Sun City Boulevard and Del Webb Boulevard, some of which have already been constructed. A system of on-street Class II bike lanes will also be provided along the local roads within the project area, and will provide linkages to the proposed Pleasant Grove Creek bicycle trail and Mahany Regional Park (via Pleasant Grove Boulevard).

Trucks

Figure 4.9-5 shows the existing designated truck routes within the Roseville city limits. These include the following:

- I-80
- SR-65
- Baseline Road west of Foothills Boulevard
- Foothills Boulevard south of Baseline Road
- Cirby Way between Foothills Boulevard and Sunrise Avenue
- Roseville Road south of Cirby Way
- Riverside Avenue/Auburn Boulevard south of Cirby Way
- Sunrise Avenue south of Cirby Way
- Douglas Boulevard between Eureka Road and Sierra College Boulevard
- Eureka Road between Douglas Boulevard and I-80
- Sierra College Boulevard

These truck routes link with Sacramento County's designated truck routes on Roseville Road, Auburn Boulevard, Sunrise Boulevard and Hazel Avenue.

Blue Oaks Boulevard from SR-65 to Fiddymment Road will be designated as a truck route as part of the Proposed Project.

Rail

Southern Pacific's transcontinental rail line and its switching yard and maintenance facilities have played a major role in Roseville's history. The railroad facilities in the City have and will continue to have a significant effect on the area's economy. However, the railroad tracks and yard create a substantial barrier to both pedestrian and automobile circulation. They concentrate vehicle traffic into a limited number of crossings and thereby have a large influence on travel patterns through the City.

Figure 4.9-6 shows the major rail lines that serve the City of Roseville, as well as existing crossings of these rail lines (both at-grade and grade-separated crossings).

The main line of the Southern Pacific tracks crosses under SR-65 adjacent to Taylor Road. It then follows I-80 south to Atlantic Street, which it follows into downtown Roseville. It then connects with a northern spur and enters the Roseville switching yard. Adjacent land use in this vicinity is a mixture of commercial, industrial and residential land use. The switching yard then continues south past the city limits. There are only two at-grade crossings in the city limits, at Yosemite Street and Berry Street. The rail line crosses under Harding Boulevard, over Washington Boulevard and under Foothills Boulevard, which together with SR-65 are the only four grade-separated crossings of the Southern Pacific main line tracks (see Figure 4.9-6).

The northern spur of the Southern Pacific rail line crosses under Blue Oaks Boulevard, adjacent to Industrial Avenue. The rail continues south and crosses over Washington Boulevard and under Sierra Boulevard before it joins the main line near the downtown area. There are no at-grade crossings of this spur line. The three grade-separated crossing (at Blue Oaks Boulevard, Washington Boulevard and Sierra Boulevard) are shown on Figure 4.9-6.

Amtrak provides commuter rail service to the City. See discussion under the transit section, above.

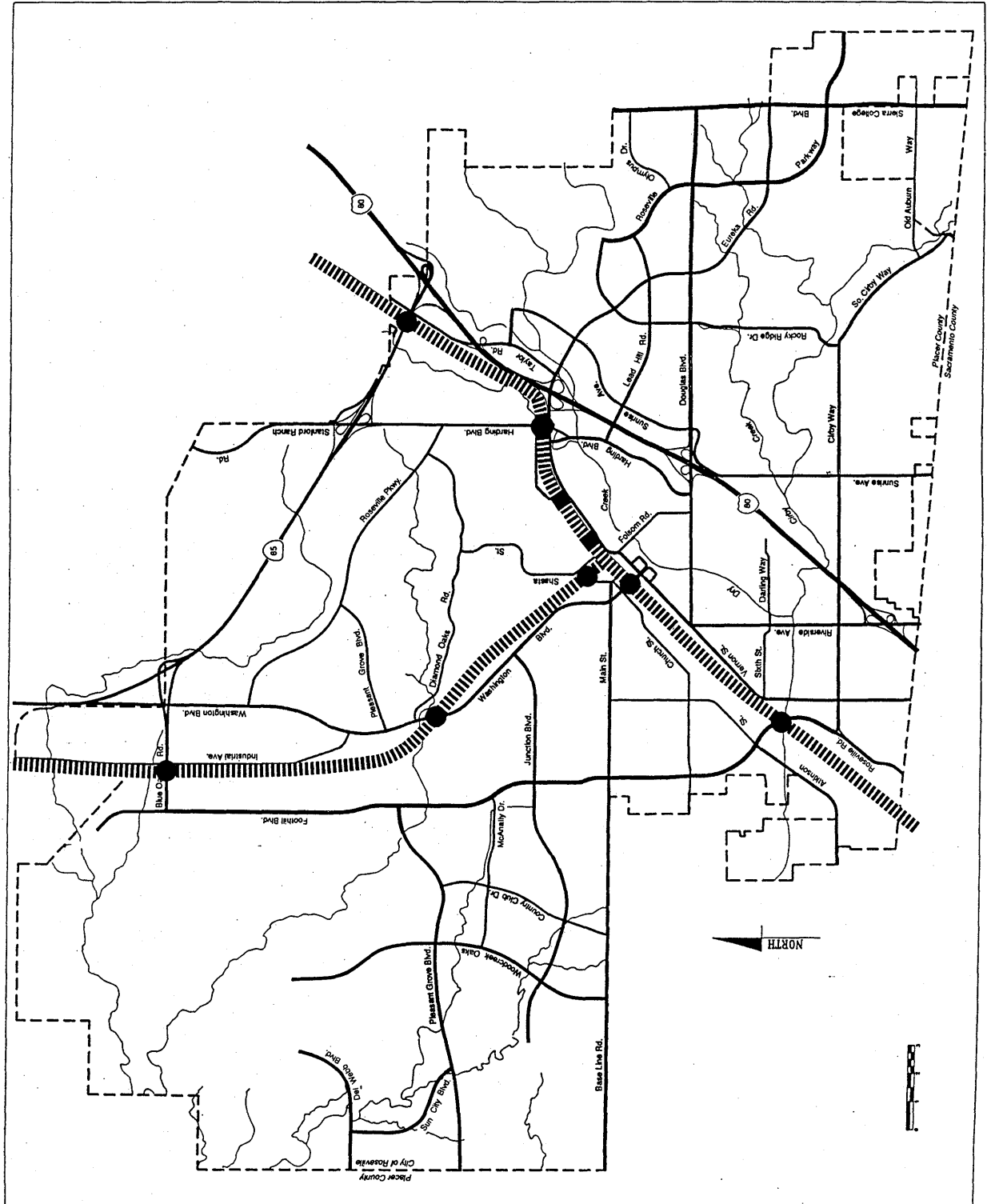
Air

There are no existing aviation facilities within the city limits of Roseville. The nearest general aviation airport is the Lincoln Airport, located roughly 10 miles north of Roseville along SR-65. Other general aviation airports in the vicinity are the Auburn Airport, located 20 miles northeast of Roseville near Highway 49 north of I-80; Natomas Airport, located approximately 14 miles southwest of Roseville; Rio Linda Airport, approximately 11 miles southwest of Roseville; and the Sacramento Metropolitan Airport, located 25 miles southwest of Roseville along I-5 north of I-80. McClellan Air Force Base is also near Roseville. It is located north of I-80 about seven miles southwest of the City.

Figure 4.9-6

Existing Railroad Facilities

Hewlett-Packard
Master Plan EIR



- Southern Pacific Transportation Company Mainline
- At-Grade Crossings
- Grade-Separated Crossings

DKS Associates

4.9.3 REGULATORY SETTING

Local Regulatory Standards

A number of City standards apply to the Proposed Project. The focus of these standards cover every aspect of the transportation system and must be satisfied in order for the project to be approved. These standards include:

- **Level of Service Standard** - Under the General Plan, the City of Roseville has set a standard of level of service "C" or better for its roadway system. Consequently, levels of service "A", "B" and "C" are considered acceptable, while "D", "E" and "F" are unacceptable. The General Plan policies, however, allows level of service "D" at locations within the City's "infill area" where the City decides, based on established criteria, that the improvements are not worth the benefits of having level of service "C" for all hours of the day.
- **City of Roseville Improvement Standards** - Roadway improvements within the City of Roseville must conform to a set of standard plans that detail City's standards for pavement width, lighting, drainage, sewer, and other roadside facilities. Roadway improvements within the Proposed Project are private roads and therefore are not required to conform to City standards, with the exception of the main east/west roadway. Roadway improvements to public roadways need to conform to the City's standards.
- **Capital Improvement Program** - The CIP defines the phasing of roadway improvements over a 20 year period that are needed to meet the City's LOS standards. This program must be updated a minimum of every 5 years or with the approval of a significant development such as the Proposed Project. The City's CIP is currently being updated and is expected to be completed in Fall of 1996.
- **Long Range Transit Master Plan** - The City has developed a plan to guide the development of both inter- and intra-city transit service through the year 2010. The plan was based on the General Plan and did not consider development of the Proposed Project.
- **Bikeway Master Plan** - The General Plan calls for the development of a comprehensive bikeway system that would provide connections between the City's major employment and housing areas and between existing and planned bikeways. The City recently adopted a Bikeway Master Plan which provides guidelines for the development of a city-wide network of bicycle facilities and design standards (based on Caltrans standards) for new bicycle facilities in Roseville.
- **Truck Routes** - A system of roadways through the City of Roseville has been designated as truck routes. Of these routes, Foothills Boulevard (south of Baseline Road) and SR-65 provide access to the vicinity of the Proposed Project.

- **Transportation System Management** - TSM measures are designed to reduce vehicular travel demand and meet air quality goals. Employers of 50 or more employees (such as the Applicant) within the City of Roseville are required to comply with the City's TSM ordinances and include TSM measures where possible.

Regional Regulatory Standards

- **Placer County CMP** - The County's Congestion Management Plan sets standards for the reduction of vehicle trips in Placer County. Baseline Road, Foothills Boulevard and Cirby Way and the existing portion of Blue Oaks Boulevard are part of the designated CMP roadway system. Other major arterials in the vicinity of the Proposed Project (e.g., Fiddymont Road, Pleasant Grove Boulevard, and Woodcreek Oaks Boulevard) are not currently included on the Placer County CMP roadway system.

State Regulatory Standards

- **California Clean Air Act** - This act sets guidelines for air emissions resulting from vehicular travel. Traffic generated by the Proposed Project must not create air quality levels that exceed limits set by this act.

Federal Regulatory Standards

There are no known federal standards that would directly affect the transportation and circulation aspects of this project.

4.9.4 IMPACTS

This section discusses the transportation impacts of the Proposed Project. It includes a detailed description of the methods of analysis, including the development and transportation system assumptions used to prepare travel forecasts, as well as the standards of significance used to identify impacts. Since significant traffic impacts of the Proposed Project are defined as those that would occur beyond the existing General Plan (the No Project Alternative), this section also outlines the traffic impacts from development of the existing General Plan.

Method of Analysis

The development of transportation system needs and impacts is based on the travel demand model which was originally developed by DKS Associates in 1992 for the City of Roseville and Placer County, and has since been updated and recalibrated. The model translates land uses into transit patronage and roadway volume projections. Its inputs are estimates of development (i.e., the number of single-family and multi-family dwelling units, and the amount of square footage of various categories of non-residential uses) and descriptions of the roadway and transit systems. The model covers not only the City of Roseville, but also the entire Sacramento region (including the portions of Placer County west of Colfax) and is consistent with the regional model currently used by the Placer County Transportation Planning Agency (PCTPA) to prepare the Placer

County Congestion Management Program (CMP) and Regional Transportation Plan (RTP). The model also maintains a general consistency with the trip distribution and mode choice estimates from the regional model used by the Sacramento Area Council of Governments (SACOG).

The outputs of the travel demand model include average daily and peak hour traffic volume forecasts on roadway segments as well as turning movements at intersections. The level of service of Roseville's arterial and collector roadway system is primarily dictated by the capacity and operations of its signalized intersections. For this EIR, levels of service were evaluated at 67 existing and 6 future signalized intersections throughout the City, using intersection geometrics identified in the City's 2010 CIP.

Development Assumptions Within Roseville

The Circulation Element of the City's General Plan is intended to accommodate Roseville's anticipated population and employment growth through the year 2010 based on the 2010 Market scenario described in the General Plan Update EIR. The General Plan Update EIR also described a 2010 Market/Specific Plan Buildout scenario. The development assumptions under the existing General Plan for the 2010 Market scenario have been subsequently revised and used to help define the Future Baseline condition (also known as the No Project Alternative). The Future Baseline condition also includes revised levels of development on HP's property, including the addition of retail land use and increased light industrial uses. The development assumptions under the existing General Plan for the 2010 Market/Specific Plan Buildout scenario will be used to define the cumulative condition (see Section 6.0).

Analysis of the 2010 Market scenario in the General Plan EIR identified a number of existing roadways that would require widening or extension in order to maintain a level of service "C" standard under 2010 Market development levels. In addition, several intersection improvements were identified. These roadway and intersection improvements are summarized in Table 4.9-4. Subsequent to the General Plan EIR, the development assumptions for the 2010 Market scenario have been amended twice. The first amendment was a result of the Del Webb Specific Plan EIR, which revised the development levels associated with the 2010 Market scenario to include land uses associated with the Del Webb Specific Project area. The second amendment involved revised assumptions related to the mix of retail and office land uses on both "business professional" and commercial parcels in the specific plan areas of the City. This revised land use was analyzed using the same roadway network identified in the General Plan for the 2010 Market scenario and additional roadway and intersection improvements were identified. These roadway improvements are summarized in Table 4.9-4.

Development Outside of Roseville

Development assumptions outside the City of Roseville, particularly in adjacent communities, also have an important impact on the forecasts of travel patterns within the City. Outside of Placer County, the travel forecasts for the General Plan Update EIR used 2010 land use and trip generation estimates prepared by the Sacramento Area Council of Governments (SACOG) in 1991. These same 2010 estimates were used to estimate the impacts of the No Project Alternative and the Proposed Project in this EIR.

TABLE 4.9-4		
REQUIRED ROADWAY IMPROVEMENTS UNDER THE 2010 MARKET SCENARIOS		
Project	Current 2010 Market Scenario ¹	HP Master Plan No Project Scenario ² (Future Baseline)
Roadway Widenings and Extensions		
Atlantic St. to 4 lanes-Vernon to Harding	X	X
Cirby Way to 5/6 lanes-Foothill to Oak Ridge	X	X
Baseline Rd. to 4 lanes-City limits to Foothill	X	X
Eureka Blvd. to 6 lanes-Douglas to Professional	X	X
Roseville Pkwy. to 4 lanes-City limits to Sierra College Blvd.	X	X
Foothill Blvd. to 6 lanes-Cirby to 500' north of Pleasant Grove Blvd.	X	X*
Sunrise Ave. to 6 lanes-County line to Madden	X	X
Washington Blvd. to 4 lanes-Sawtell to Blue Oaks	X	X
Sierra College Blvd. to 6 lanes-Sac. County line to N. City limit	X	X
South Cirby Way to 4 lanes-Rocky Ridge to Old Auburn	X	X
Rocky Ridge Dr. to 6 lanes-Douglas to north of Target	X	X
Stanford Ranch Rd. to 4 lanes-Fairway to City limits	X	X
Roseville Rd. to 4 lanes-City limits to Cirby	X	X
Taylor Rd. to 4 lanes-I-80 to City limits	X	X
Roseville Pkwy to 4 lanes-Pleasant Grove to Washington	X	X
Extend Old Auburn Rd. to Roseville Pkwy (2 lanes)	X	X
Extend Pleasant Grove Blvd.-Hwy 65 to Rocklin limits (4 lanes)	X	X
Extend Pleasant Grove Blvd.-Washington to Foothill (6 lanes)	X	X
Extend E Roseville Pkwy-Rocky Ridge to Sunrise (6 lanes)	X	X
Extend Roseville Pkwy-Taylor to Harding (6 lanes)	X	X
Extend Roseville Pkwy from Washington to Foothill (2 lanes)	X	X
Extend Woodcreek Oaks to Blue Oaks (2 lanes)	X	X
Extend Blue Oaks Blvd. to Woodcreek Oaks (2 lanes)	X	X*
Extend Junction Blvd-Woodcreek Oaks to Fiddymment Rd (2 lanes)	X	X
Extend Blue Oaks Blvd-Woodcreek Oaks to Fiddymment Rd (2 lanes)	X	X
Riverside Ave to 6 lanes - Cirby to Orlando	X	X

TABLE 4.9-4 (continued)		
REQUIRED ROADWAY IMPROVEMENTS UNDER THE 2010 MARKET SCENARIOS		
Project	Current 2010 Market Scenario ¹	HP Master Plan No Project Scenario ² (Future Baseline)
Add Turn Lanes		
- Sunrise Ave/Douglas Blvd	X	X
- Eureka Rd/Douglas Blvd	X	X
- Sierra College Blvd/Douglas Blvd	X	X
- Harding Blvd/Atlantic St	X	X
- Roseville Rd/Cirby Way	X	X
- Riverside Ave/Cirby Way	X	X
- Rocky Ridge Rd/Cirby Way	X	X
- Vernon St/Cirby Way	X	X
- Santa Clara Dr/Douglas Blvd	X	X
- Sierra Gardens Dr/Douglas Blvd	X	X
- Foothills Blvd/Main St	X	X
- Foothills Blvd/Pleasant Grove Blvd	X	X*
- Washington St/Pleasant Grove Blvd	X	X
- Roseville Pkwy/Pleasant Grove Blvd	X	X
- Fiddymment Rd/Walerga Rd/Baseline Rd	X	X
- Taylor Rd/Eureka Rd	X	X
Grade Separation		
- Sunrise Ave/Douglas Blvd	X	X
- Riverside Ave/Cirby Way	X	X
- Harding Blvd/Roseville Pkwy	X	X
- Foothills Blvd/Pleasant Grove Blvd		X
Unmitigated Intersections Operating at Level of Service D or E - Within Roseville		
- Sunrise Ave/Cirby Way	E	D
Unmitigated Intersections Operating at Level of Service D or E - Outside Roseville		
- Sierra College Blvd/Douglas Blvd	D	D
NOTES:		
¹ See Figure 4.9-7		
² See Figure 4.9-10		
* Requires additional improvements beyond 2010 Market		
SOURCE: DKS Associates, 1994.		

TABLE 4.9-5				
2010 DEVELOPMENT ASSUMPTIONS IN SOUTH PLACER COUNTY OUTSIDE OF CITY OF ROSEVILLE				
Area ¹	Dwelling Units	Non-Residential Square Footage (1,000 sq.ft.)		
		Retail	Office	Industrial
Rocklin City	18,817	3,774	1,400	3,477
Lincoln City	5,900	392	144	1,430
Dry Creek/West Placer CPA	1,300	153	13	237
Granite Bay CPA	8,600	723	157	130
Sunset CPA	0	52	26	3,850
Placer Central/Placer West	3,400	59	0	252
Total	38,017	5,153	1,740	9,376
NOTES:				
¹ Areas represent Sphere of Influence areas of Cities, Community Plan Areas (CPA) and the Placer Central/Placer West area of unincorporated South Placer County as defined in the Placer County General Plan Update.				
SOURCE: DKS Associates, 1994.				

Within Placer County, the 2010 development and buildout estimates in Roseville's General Plan Update EIR were prepared by Angus McDonald and Associates (1992); including estimates of population, dwelling units, employment, and floor area (for non-residential development) in each city and community project area in Placer County. In preparing their countywide estimates, Angus McDonald and Associates evaluated forecasts of population and households by SACOG and the State Department of Finance. Their land use forecasts were subsequently used by the Placer County Transportation Planning Agency (PCTPA) to prepare Placer County's Congestion Management Program (CMP) and Regional Transportation Plan (RTP). These development assumptions in South Placer County are listed in Table 4.9-5.

The assumed residential growth in this EIR under the No Project Alternative for Placer County as a whole is essentially the same as the 2010 countywide forecasts used by the City of Rocklin to evaluate 2010 conditions for the recent update of their circulation element. The countywide employment estimates under the No Project Alternative are essentially the same as the 2010 forecasts used by the City of Rocklin, as well as Placer County's 2010 growth scenarios presented in the "Issues and Options Report" for their General Plan Update. The Placer County General Plan EIR did assume a more aggressive employment growth by 2010, but the EIR indicated that it may take longer than 2010 for this employment growth to occur.

The principal difference between the 2010 development forecasts prepared for recent updates of the general plans for Roseville, Rocklin and Placer County concerns how land use is allocated within Placer County. The EIRs on these updates all recognized that the supply of land for housing and, in particular, non-residential uses in South Placer County would greatly exceed the demand for these uses through the year 2010. With this ample supply, a range of alternative land use allocations could be prepared. The growth scenarios used in this EIR were prepared for the purpose of analyzing the City's Comprehensive Land Use Element Update. They represent one possible and reasonable outcome for the amount and distribution of growth and development in Placer County. They are consistent with those used in Roseville's General Plan Update EIR, and those used by the Placer County Transportation Planning Agency.

To develop the land use assumptions for Rocklin under the No Project Alternative and the Proposed Project, this EIR used the residential buildout assumptions developed by the City of Rocklin in their recent Circulation Element Update.

Transportation System Assumptions Under Future Baseline (No Project)

The transportation system assumed under the No Project Alternative is described in this section. The additional transportation system improvements assumed under the Proposed Project are described in the following section.

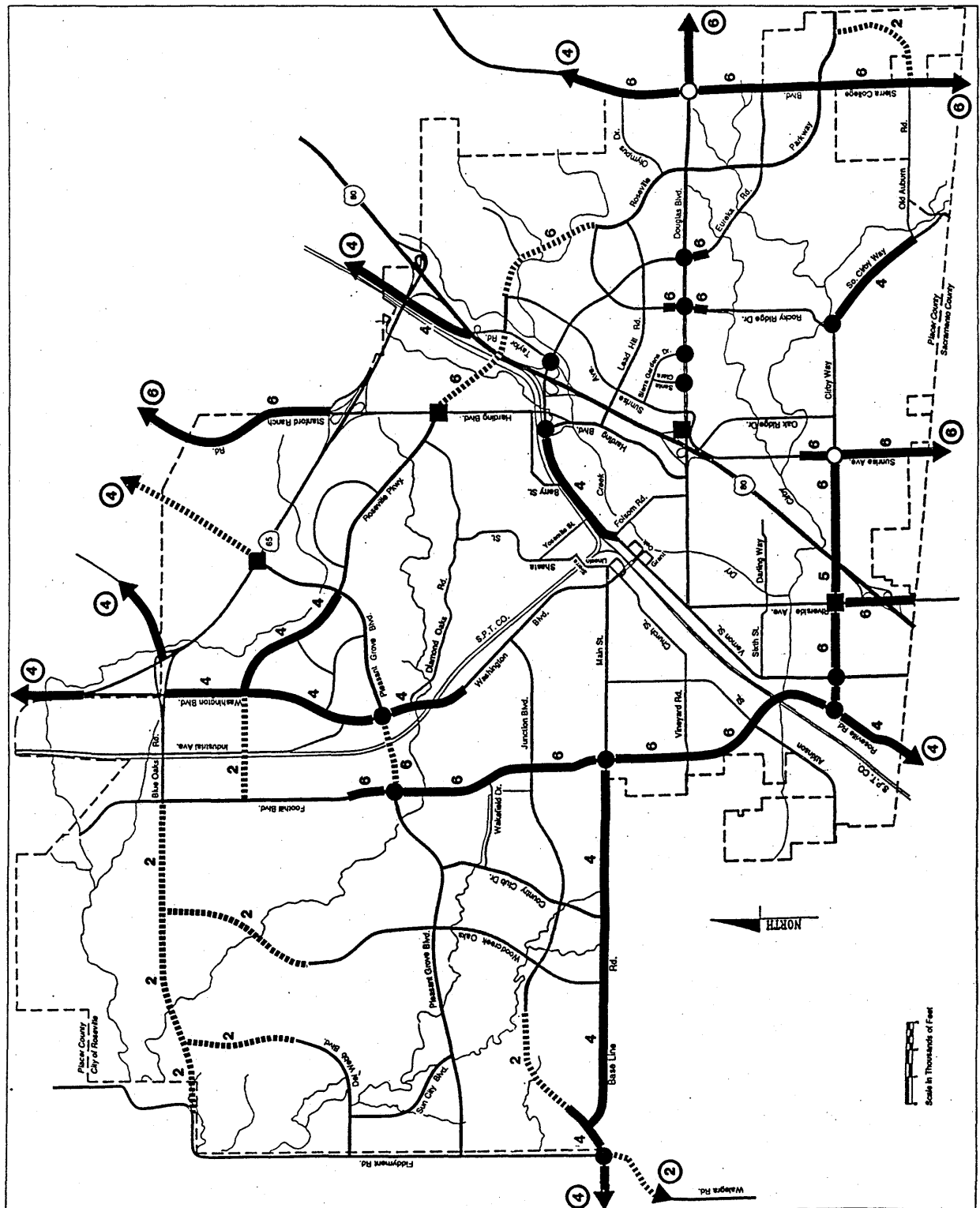
Outside the City of Roseville, the same transportation improvements used in the 2010 Market analysis for the Roseville General Plan Update EIR (City of Roseville, 1992) were assumed for the No Project Alternative. These included the extension of light rail to Roseville with a substantial "feeder" bus system to the light rail stations plus expansion of the Capitol Corridor intercity rail line to include service between Colfax and the Bay Area. The assumed roadway improvements are generally consistent with PCTPA's Regional Transportation Plan (RTP). That roadway system includes improvements to a number of major arterial roadways in South Placer County, and some improvements to the State's freeway system. It includes the widening of I-80 to include high occupancy vehicle (HOV) lanes between Sacramento and Rocklin, the widening of SR-65 between Roseville and Lincoln and the SR-65 Lincoln bypass. The extension of light rail from Antelope to Roseville and the widening of I-80 to accommodate HOV lanes represent "unfunded" improvements in the RTP; however, their inclusion is consistent with the assumptions used for the 2010 Market scenario in the General Plan Update EIR.

The light rail extension to Roseville from Antelope is estimated to cost about \$111 million to construct plus an additional \$3 million annually to operate. This extension was included by SACOG in their 1993 Metropolitan Transportation Plan (MTP) "even though Placer County officials haven't endorsed any new revenue-raising measures." SACOG further states that "the Sacramento Regional Transit District has stated it could finance this project based on the expected funding generated for the District by the statewide and Sacramento County tax initiatives recommended in this plan" (the MTP).

Within the City, the roadway needs in the Future Baseline condition (No Project Alternative) are shown in Table 4.9-4 and Figure 4.9-7. These needs reflect the City's 2010 CIP and were assumed to be fully implemented.

Figure 4.9-7

Required Roadway Improvements Under 2010 Market Scenario

Hewlett-Packard
Master Plan EIR

DKS Associates

Impacts From Development of Existing General Plan

The following information is intended to summarize impacts associated with the development of land uses as allocated by the existing (pre-project) Roseville General Plan under the 2010 Market scenario. A discussion of the impacts using the most recent development and transportation assumptions for this scenario is described below. This summary information will be helpful to the reader when reviewing the following section on impacts associated with the Proposed Project. Since the project impacts focus on the increment of growth between the Future Baseline condition (No Project Alternative) and the Proposed Project. Analysis of the 2010 Market scenario in the Comprehensive Land Use Element Update Project EIR identified a number of existing roadways that would require widening or extension in order to maintain a level of service "C" standard under 2010 Market development levels. In addition, a number of intersection improvements were identified. These roadway and intersection improvements are summarized in Table 4.9-4 and shown in Figure 4.9-7.

The Sunrise Avenue/Cirby Way intersection would operate at LOS "E" conditions with the maximum feasible at-grade improvements under the 2010 Market scenario. The City's level of service policy allows LOS "D" operations in Infill areas under certain conditions. Since other mitigation measures were determined to be infeasible, the existing General Plan EIR found that the LOS "E" condition at that intersection represents a significant and unavoidable impact of the 2010 Market scenario under the existing General Plan.

The analysis of the 2010 Market scenario also indicates that the Douglas Boulevard/Sierra College Boulevard intersection would operate at LOS "D" conditions with the maximum feasible at-grade improvements. The City of Roseville only controls the western leg of this intersection. The remaining three legs are located in unincorporated Placer County. Placer County, which has assumed the same level of improvements for this intersection by 2010 in their recent General Plan Update, also has an LOS "C" standard for roadways not near State highways. Consequently, this represents a significant and unavoidable impact of the revised 2010 Market scenario under the existing General Plan.

Standards of Significance

The Proposed Project is a large mixed-use development that would take many years to build out. Also, the travel patterns from this project would vary depending on development assumptions in the remainder of Roseville, and the rest of the Sacramento region. For these reasons, traffic impacts from the Proposed Project have not been compared to existing traffic conditions. Rather, traffic impacts are based on a comparison to the traffic impacts from a future scenario of growth under the existing General Plan: the Future Baseline condition (No Project Alternative) which is based on the 2010 Market scenario of the existing General Plan.

A traffic impact would be indicated by exceedance of the General Plan's level of service policy. The Proposed Project is considered to have a significant impact on those roadways or intersections that would operate at an acceptable level of service (LOS "C" or better) under the No Project Alternative, but would operate at LOS "D" or worse under the Proposed Project and thus require additional mitigation.

The Proposed Project would also have a significant impact if:

- Planned transit services do not meet the needs of the project, which includes helping the City meet its level of service standard, transportation system management standards and air quality goals.
- Planned bicycle facilities do not meet the needs of the project, and the policies and guidelines in the Bikeway Master Plan.

Additional Impacts Resulting From The Proposed Project

This section identifies and discusses the transportation-related impacts that would result from the Proposed Project. Mitigation measures to reduce the level of these impacts are identified in this section, and are discussed in more detail in Section 4.9.5. The impact analysis evaluates the required improvements needed to achieve the level of service standard in the General Plan. It also outlines the need to expand the City's transit service to achieve its level of service and transportation systems management (TSM) standards, and expand the City's planned bikeway system to serve the project area.

The amount of development assumed on the HP campus under both the Future Baseline and Proposed Project exceed the forecasts of the General Plan under 2010 Market conditions. Therefore both the Future Baseline and Proposed Project represent post-2010 levels of development that have been analyzed based on their impacts on the 2010 transportation system. An analysis was conducted that assumed an amount of development on the project site that was considered a more likely estimate of 2010 conditions. This analysis is discussed in Chapter 6 as the Reduced Development Alternative.

Trip Generation and Mode Choice

The trip generation characteristics of the existing HP campus are somewhat different from the standard trip rates for industrial development used by the City of Roseville due to a higher employee density per square foot of building area. Therefore, it was necessary to develop a trip generation rate unique for the Proposed Project. The Proposed Project's trip generation was based on traffic count data collected in April of 1995, which was provided by the City of Roseville, and gross square footage data for the same time period, which was provided by Hewlett-Packard; the data is shown in Table 4.9-6. The trips generated by the industrial land uses on the site would average 10.5 daily vehicle trips per thousand square feet (trips/ksf). This is a higher rate than the standard trip generation rate for Light Industrial land uses (7.6 trips/ksf) which is typically used by the City to estimate trip generation of industrial land uses.

The Proposed Project includes two commercial centers consisting of 22-acres in the northwest portion of the site and 6.5-acres in the northeast corner of the site. These parcels are assumed to have the same trip generation characteristics (35.0 trips/ksf) that are generally assumed for the Commercial land use category used for the rest of the City. The expected trip generation of the Proposed Project is shown in Table 4.9-7.

TABLE 4.9-6						
TRIP GENERATION RATES FOR INDUSTRIAL USES WITHIN THE PROPOSED PROJECT						
Square Footage (as of April 1995)	Existing Traffic Volumes (veh)			Trip Rates (veh/ksf)		
	Daily (ADT)	Peak Inbound	Peak Outbound	Daily	PM Peak Inbound	AM Peak Outbound
1,182,500	12,500	100	1,250	10.5	0.08	1.06
SOURCE: DKS Associates, 1996.						

TABLE 4.9-7				
TRIP GENERATION OF THE PROPOSED PROJECT				
Land Use Category	Quantity (square feet)	Average Daily Vehicle Trips	P.M. Peak Hour Vehicle Trips	
			Inbound	Outbound
Industrial	4,002,000	42,000	320	4,200
Commercial	248,000	8,700	240	400
Total	4,250,000	50,700	560	4,600
SOURCE: DKS Associates, 1996.				

Based on the calculated trip generation rate of the existing HP campus (10.5 trips/ksf), and the estimated, gross square footage of the campus as of August 1995 (1.33 million square feet), the current trip generation of the HP campus is approximately 14,000 daily vehicle trips. The Proposed Project would generate approximately 50,700 daily vehicle trips, which represents an increase of 36,700 vehicle trips over the trip generation of the existing HP campus. Figure 4.9-8 shows the projected daily traffic volumes under existing conditions with the Proposed Project.

The current 2010 Market forecast (from the 1992 General Plan Update EIR) estimated that HP would have approximately 1.76 million square feet developed by the year 2010; the General Plan also assumed it would generate trips at the standard Light Industrial trip rate of 7.6 trips/ksf, which would result in a total of approximately 13,400 daily vehicle trips. Consequently, the existing campus is already producing 4 percent more daily vehicle trips (14,000) than were originally forecast under the 2010 Market scenario (13,400).

The Future Baseline condition (No Project alternative) assumes that an additional 296 acres of Light Industrial land would be developed on HP, beyond the 1.33 million square feet already developed. While the 296 acres would represent an additional 3.23 million square feet of industrial development, it is assumed to generate trips at the standard Light Industrial rate of 7.6

This map illustrates the Delta Cross-Tie Canal project area, showing the proposed canal route and its connection to existing waterways. The map includes the following details:

- Canal and Waterways:** The proposed Delta Cross-Tie Canal is shown as a solid line, connecting to the Sacramento River, San Joaquin River, and various local canals and creeks.
- Place Names:** Numerous locations are labeled, including Sacramento, Colusa, Yuba City, Marysville, and various smaller communities and ranches.
- Roads:** Major roads such as Highway 99, Highway 49, and various local roads are depicted.
- Topography:** The map shows the Delta's characteristic levee system and various water bodies.
- Legend:** A north arrow and a scale bar are provided for orientation and measurement.
- Data Points:** Numerous numerical values are scattered across the map, likely representing water levels, elevations, or other hydrological data.

Projected Daily Traffic Volumes under Existing Conditions with the Project

Hewlett-Packard
Master Plan EIR

Key:

20,000	Existing Plus Project
(10,000)	Existing without Project

DKS Associates

trips/ksf, while the existing campus would continue to generate trips at its actual rate of 10.5 trips/ksf. While the No Project alternative actually assumes a higher amount of developed square footage than the Proposed Project, the resulting trip generation is approximately 37,100 daily vehicle trips, which represents an increase of 23,100 vehicle trips over existing conditions but is 13,600 fewer trips than the Proposed Project. Table 4.9-8 compares the trips generated by the existing campus, Proposed Project, No Project and the 2010 Market scenario of the 1992 General Plan Update EIR.

Roadway Assumptions in Project Vicinity

In the vicinity of the HP campus it was assumed that, for the Proposed Project, certain roadway improvements would be implemented within the 20-year horizon of the Proposed Project. Some improvements that are assumed under both the Future Baseline condition and the Proposed Project are:

- The extension of Blue Oaks Boulevard from Foothills Boulevard west, toward Fiddymont Road. The Proposed Project includes the portion between Foothills Boulevard and the extension of Woodcreek Oaks Boulevard.
- The extension of Woodcreek Oaks Boulevard from its current end (north of Pleasant Grove Boulevard) to the extension of Blue Oaks Boulevard. The Proposed Project includes this entire roadway segment.
- The existing south entrance to HP along Foothills Boulevard, which is currently only open to traffic between 5:30 and 9:30 A.M., is assumed to be a primary access point for the Proposed Project. As such, it is assumed to be signalized and security-controlled.
- A grade-separated overcrossing of the SPRR tracks at Pleasant Grove Boulevard. The overcrossing would link the two existing segments of Pleasant Grove Boulevard, which currently end at Foothills Boulevard and Washington Boulevard.

The extensions of Blue Oaks Boulevard and Woodcreek Oaks Boulevard, as well as the Pleasant Grove Boulevard overcrossing, are included in the City's Capital Improvement Program (CIP).

It has been assumed that all major access points linking the Proposed Project to the surrounding transportation system will be signalized intersections, and that roadways entering the Proposed Project are private roads controlled by security gates. The only exceptions are the two commercial centers located in the northwest and northeast corners of the Proposed Project. Driveway access to these sites is assumed to be restricted to right-turn-in/right-turn-out access only. The commercial sites do not allow direct access to the main campus. Intersection geometries at signalized intersections in the vicinity of the Proposed Project have been assumed and are consistent with the City's typical intersection geometric policies.

TABLE 4.9-8				
TRIP GENERATION COMPARISON				
Scenario	Gross Square Footage (ksf)	Estimated Daily Vehicle Trips	Increase Over Existing	
			Vehicle Trips	Percent
Existing (1995)	1,330	14,000	--	--
2010 Market (1992 General Plan Update EIR)	1,757	13,400	-600	-4%
No Project (Future Baseline)	4,556	37,100	23,100	165%
Proposed Project ¹	4,250	50,700	36,700	262%
NOTES:				
¹ Includes 248 ksf of commercial land use (35 trips/ksf).				
SOURCE: DKS Associates, 1996.				

Roadway Impacts Within Roseville

The City's travel demand model was used to forecast traffic demand on the City's roadway systems under the Proposed Project. Daily traffic volumes associated with this analysis are shown in Figure 4.9-9. An analysis of p.m. peak hour traffic conditions was conducted, and it identified the impacts outline below.

The improvements needed to mitigate the Future Baseline condition would also be required under the Proposed Project. Some intersections were not fully mitigated under the Future Baseline condition; these intersections are listed below, along with their Levels of Service under the Proposed Project:

- Sunrise Avenue at Cirby Way (LOS E)
- Sierra College Boulevard at Douglas Boulevard (LOS D)
- Foothills Boulevard at Pleasant Grove Boulevard (LOS D)

All of these intersections would operate at LOS D under the Future Baseline condition. The intersection of Sierra College Boulevard and Douglas Boulevard is on the boundary between the City and Placer County. The City of Roseville only has jurisdiction over the western leg of this intersection. The intersection of Sunrise Avenue and Cirby Way is a significant and unavoidable impact under the Future Baseline condition and consequently remains a significant and unavoidable impact under the Proposed Project.

This map illustrates the Sacramento-San Joaquin River Delta area, showing property boundaries, roads, and waterways. The map includes numerous numerical values, likely representing land area or value, and labels for various locations and roads. A north arrow and a scale bar are also present.

Key Features:

- Waterways:** Sacramento River, San Joaquin River, Delta River, and various smaller creeks and channels.
- Roads:** Major roads like Highway 99, Highway 41, and various local roads (e.g., Main St, 1st St, 2nd St, etc.).
- Property Boundaries:** Delineated by solid and dashed lines, often accompanied by numerical values.
- Locations:** Labeled areas include "City of Roseville", "City of Sacramento", "City of Yuba", "City of Colusa", "City of Sutter", "City of Glenn", "City of Butte", "City of Colusa", "City of Sutter", "City of Glenn", "City of Butte", "City of Colusa", "City of Sutter", "City of Glenn", "City of Butte".
- Scale:** Scale in Thousands of Feet.
- North Arrow:** Indicated by a north arrow pointing towards the top of the map.

The map is a detailed cadastral or planning map, showing the intricate network of roads and waterways in the Delta region. The numerical values are distributed across the map, often along road segments or within specific property parcels, suggesting they represent land area or value. The map is oriented with North at the top, as indicated by the north arrow.

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Key:

20,000	Proposed Project
(10,000)	No Project Alternative

DKS Associates

The intersection of Foothills Boulevard and Pleasant Grove Boulevard operates at LOS D under the Future Baseline condition assuming the maximum, feasible at-grade geometry. Because this intersection is not in the City's Infill area, LOS D cannot be considered acceptable under any circumstance according to the City's current LOS policy. Therefore, based on the City's current policy, this intersection would require improvements such as grade separation in order to provide LOS C or better conditions.

All three intersections identified as not being fully mitigated under the Future Baseline conditions would also be unmitigated under the Proposed Project. Should the LOS policy amendment discussed in Chapter 5 be implemented, the intersection of Foothills Boulevard and Pleasant Grove Boulevard could be allowed to operate at LOS D without additional improvements. In any event, the above intersections operate at an unacceptable level of service under the Future Baseline condition and the Proposed Project would not result in a worse traffic impact at any of the three locations, no further analysis of these intersections was conducted for this EIR.

The implementation measures for the Circulation Element of the General Plan calls for a continued updating of the City's Capital Improvement Program (CIP) to implement the City's level of service policy. For the development of the CIP, the Public Works Department shall define "normally accepted maximum" improvements for roadways and intersections. If "normally accepted maximum" improvements cannot maintain LOS "C", the City Council may consider additional "extraordinary" improvements, such as grade separations. The improvements needed to provide LOS "C" under the development of the existing General Plan for the Future Baseline condition would include three grade separations (with one or possibly two additional grade separations required under the Proposed Project). Implementation of these grade separations has generally been considered "feasible" by the City. If some of these grade separations are judged not to be feasible or acceptable, then additional impacts would result under both the Future Baseline condition and the Proposed Project. Table 4.9-9 indicates the level of service at these intersections if grade separations are not provided and the maximum feasible at-grade improvements are implemented.

Other "extraordinary" measures that could be considered to mitigate the impacts of the Proposed Project would include new "parallel" roadways that could provide alternative routes to affected roadways and intersections, or changes in the City's level of service policy. For those locations where "normally accepted maximum" improvements would not provide LOS "C" conditions and grade separations were not considered to be feasible, new parallel roadways were considered as potential mitigation. However, outside the urban reserve and proposed annexation areas of the City, new roadways were not determined to be feasible due to the potential significant impacts on existing or planned development in the existing General Plan.

Another mitigation measure that was considered involved a stronger transportation system management (TSM) ordinance than the City's current ordinance. While a more aggressive TSM ordinance may lessen some impacts under the Proposed Project, it is unlikely that by itself such an ordinance would fully mitigate any of the Proposed Project's impacts. Questions also exist about the feasibility of implementing stronger TSM provisions.

TABLE 4.9-9			
LEVELS OF SERVICE WITHOUT PROPOSED GRADE SEPARATIONS			
Intersection	Existing General Plan 2010 Market	No Project (Future Baseline)	Proposed Project
Douglas Blvd/Sunrise Blvd	F	F	F
Riverside Ave/Cirby Way	F	F	F
Taylor Rd/Roseville Pkwy	C	C	D
Harding Blvd/Roseville Pkwy	E	F	F
Foothill Blvd/Pleasant Grove Boulevard	C	D	D
SOURCE: DKS Associates, 1995.			

Based on the above, no feasible at-grade mitigation has been identified for the two additional intersections that would operate at LOS D or worse under the Proposed Project. Figure 4.9-9 shows the full impacts under the Proposed Project, including all the required improvements and unmitigated intersections.

The City cannot approve a project inconsistent with its General Plan policies. In order to mitigate any intersection that would not operate at the City's level of service policy (LOS "C" or better), the City would need to consider some combination of the following measures:

- Modify the General Plan policy to allow conditions worse the LOS "C". This could be done Citywide (i.e., allow LOS "D" or "E" throughout the City) or the modified policy could target specific intersections or specific areas (e.g. within a mile of the freeway).
- Modify the Proposed Project to a level that would reduce or eliminate the inconsistencies with the General Plan policy on roadway level of service.

The following roadway improvements would be required by the Proposed Project which are beyond the improvements assumed for the Future Baseline condition:

- A six-lane section of Foothills Boulevard from Pleasant Grove Boulevard to the South entrance to HP. The current, 2010 CIP includes a six-lane section of Foothills Boulevard from Pleasant Grove to 500' north of Pleasant Grove; this section would need to be extended to HP's South entrance.
- A four-lane section of Blue Oaks Boulevard from HP's collector "B" (refer to Project Site Plan in Section 2.3) to Foothills Boulevard. The current, 2010 CIP assumes Blue Oaks Boulevard to be only two lanes wide for the entire segment between the proposed Woodcreek Oaks extension and Foothills Boulevard.

- A six-lane section of Blue Oaks Boulevard from Foothills Boulevard to Washington Boulevard, including a five-lane overcrossing of the SPRR tracks and Industrial Boulevard consisting of three eastbound lanes and two westbound. Currently, Blue Oaks Boulevard is four lanes wide over this segment, including a four-lane overcrossing of Industrial Avenue.

These improvements are shown in Figure 4.9-10. The possibility of fitting five travel lanes on the existing Blue Oaks Boulevard overcrossing has been discussed with City Public Works Staff, but was determined to be infeasible.

The Proposed Project would also cause level of service impacts beyond those impacts identified under the Future Baseline condition.

Each of the impacts on roadways within the City of Roseville that would result from the Proposed Project are discussed below in detail:

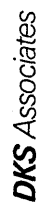
Impacts of the Proposed Project on the Existing Transportation System

An analysis was conducted that determined what impact the Proposed Project would have on the existing transportation system. Currently, the HP campus is composed of approximately 1.3 million square feet of industrial development. Access to the existing campus is provided by two signalized intersections along Foothills Boulevard (a third entrance gate is open to traffic between 5:30 and 9:30 A.M. only). Daily traffic volumes generated by the existing campus average 14,000 vehicles.

Under the Proposed Project, an additional 2.7 million square feet of industrial development and 250 ksf of commercial development will be added to the HP campus, resulting in an additional 36,500 daily vehicle trips. Daily traffic volumes associated with this scenario are shown in Figure 4.9-8. It was assumed that the extensions of Blue Oaks Boulevard and Woodcreek Oaks Boulevard (described under "Roadway Assumptions in Project Vicinity") would be implemented under this scenario. It was assumed that the south entrance along Foothills Boulevard would be open 24 hours a day under this scenario. No traffic signals were assumed at entrances to HP along Blue Oaks Boulevard or Woodcreek Oaks Boulevard and analysis indicates that signals are not required at these locations under this scenario. It was also assumed that the proposed signalization of the following intersections would be implemented under this scenario:

- Foothills Boulevard at Blue Oaks Boulevard
- Foothills Boulevard at HP South Gate
- Foothills Boulevard at Pleasant Grove Boulevard

Additional Roadway Improvements Required Under the Proposed Project

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IMPACT 4.9-1:**Level of Service "D" at the intersection of Blue Oaks Boulevard and Washington Boulevard**

Applicable City

Policies and Regulations:

Action Proposed by Applicants:

General Plan Policies CB-1, CB-2, and CD-1

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.9-1 (Add a second eastbound through lane on Blue Oaks Boulevard)

Residual Significance:

Less than significant

Under this scenario, the only impact to the existing transportation system would occur at the intersection of Blue Oaks Boulevard and Washington Boulevard. The additional traffic generated by the project would create LOS "D" conditions at this location, assuming its existing geometry. The addition of a second eastbound through lane at this intersection would create LOS "C" or better conditions. This second through lane would taper back down to one lane after the intersection and before the on-ramp to southbound SR-65. With the above improvements, the impacts of the Proposed Project would be reduced to a less than significant level. In addition, implementation of the following General Plan policies will assist in maintaining an acceptable LOS.

- Policy CB-1: Maintain a level of service (LOS) "C" standard for all intersections and roadway segments in the City. An exception to that standard may be considered for intersections within the infill area where the City finds that the required improvements are unacceptable based on established criteria.
- Policy CB-2: Strive to meet the level of service standards through a balanced transportation systems that provides alternatives to the automobile,
- Policy CB-4: Secure adequate funding for all components of the City's transportation system to ensure that the level of service policy is maintained.
- Policy CD-1: Continue to enforce the City's TSM ordinance and monitor its effectiveness.

With the above improvements, the impacts of the Proposed project would be reduced to a less than significant level.

Impacts of the Proposed Project on Future Conditions

IMPACT 4.9-2:

Need for additional lanes on Foothills Boulevard

Applicable City

Policies and Regulations:

Action Proposed by Applicants:

General Plan Policies CB-1, CB-2, and CD-1

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.9-2 (Construct additional lanes on Foothills Boulevard)

Residual Significance:

Less than significant

A six-lane section of Foothills Boulevard from Pleasant Grove Boulevard to the south entrance to the HP campus would be required to accommodate the projected traffic demands of the Proposed Project. The No Project alternative requires a six-lane section from Pleasant Grove Boulevard to 500 feet north of Foothills/Pleasant Grove intersection; this section would need to be extended to the HP south entrance (see Impact 4.9-1 for the General Plan Policies that would apply). With these improvements, these roadway segments would operate at an acceptable LOS and the impacts of the Proposed Project would be reduced to less-than-significant levels.

IMPACT 4.9-3:

Need for additional lanes on Blue Oaks Boulevard

Applicable City

Policies and Regulations:

Action Proposed by Applicants:

General Plan policies CB-1, CB-2, and CD-1

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.9-3 (Construct additional lanes on Blue Oaks Boulevard)

Residual Significance:

Less than significant

A four lane section of Blue Oaks Boulevard from HP's Collector "B" to Foothills Boulevard, and a six lane section from Foothills Boulevard to Washington Boulevard. The Future Baseline condition requires only two lanes west of Foothills Boulevard and four lanes east of Foothills Boulevard. Included in the recommended six-lane section is a five lane overcrossing of the SPRR

tracks, with three eastbound and two westbound lanes. This five lane configuration would require widening of the existing overcrossing by ten feet. With these improvements (see Impact 4.9-1 for applicable General Plan Policies), these roadway segments would operate at an acceptable LOS and the impacts of the Proposed Project would be reduced to less-than-significant levels.

IMPACT 4.9-4
Level of Service "D" at the intersection of Foothills Boulevard and Pleasant Grove Boulevard

Applicable City

Policies and Regulations:

Action Proposed by Applicants:

General Plan policies CB-1, CB-2 and CD-1

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.9-4(a) (Grade Separation) or 4.9-4(b) (Amend Level of Service Policy)

Residual Significance:

Less than significant

The current 2010 CIP (the Future Baseline condition) assumes that this intersection will be built to the "normally accepted maximum" at-grade intersection geometry. An analysis of assumed 2010 development levels (see Chapter 6, Reduced Development Alternative) indicated that this intersection would operate at LOS "D" under 2010 traffic conditions. It would also operate at LOS "D" under development levels assumed under the Future Baseline condition, which is considered to be a post-2010 level of development. The additional traffic generated by the Proposed Project, which is also considered a post-2010 level of development, would still result in LOS "D" operation at this location (see Impact 4.9-1 for applicable General Plan policies).

A revision of the current 2010 CIP to include a grade separated interchange at this location would provide LOS "C" or better conditions, but further analysis of the cost and environmental impact of such an improvement is recommended. One quadrant of the intersection (the northeast) falls within the Infill area of the City; intersections in the Infill area can be accepted as operating at LOS "D" or worse, based on conditions outline in the General Plan EIR. However, this requires a discretionary action of the City Council, which cannot be assumed as a mitigation. Since this intersection would operate at LOS "D" under forecasted 2010 conditions, it is subject to the LOS policies of the General Plan. Should the current LOS policy be amended to allow LOS "D" at intersections outside the Infill area (see discussion in Chapter 5), then this intersection may be allowed to function at LOS "D".

The grade separation of this intersection would allow it to operate at an acceptable LOS and the impacts of the Proposed Project would become less than significant; the implementation of the LOS policy amendment could also make the impacts of the Proposed Project less than significant.

IMPACT 4.9-5:**Level of Service "D" at the intersection of Roseville Parkway and Taylor Road**

Applicable City

Policies and Regulations:

Action Proposed by Applicants:

General Plan policies CB-1, CB-2, and CD-1

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The analysis of this intersection under the Future Baseline condition determined that it would operate at LOS "C" with the improvements indicated in the existing 2010 CIP. An analysis of 2010 levels of development assumed on the project site (see Chapter 7, Reduced Development Alternative) indicated that this intersection would operate at LOS "C" in the year 2010 (see Impact 4.9-1 for applicable General Plan policies). With the addition of the Proposed Project, resulting traffic volumes would cause the level of service at this intersection to decrease to LOS "D". While improvements were identified that could mitigate this impact, no improvements are required because the Proposed Project represents a level of development that is considered post-2010. The General Plan and its policies regarding Level of Service are based upon year 2010 conditions; therefore, the traffic impacts of the Proposed Project at this intersection can be considered less than significant because they are expected to occur beyond the horizon of the General Plan.

Roadway Impacts Outside of Roseville**IMPACT 4.9-6:****Increased traffic on roadways outside the City of Roseville**

Applicable City

Policies and Regulations:

Action Proposed by Applicants:

None

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Roseville's travel demand model covers the entire Sacramento Region, including all of South Placer County. The model was used to forecast traffic demand on roadways and intersections outside of Roseville and a level of service analysis (consistent with methods used by adjacent jurisdictions) was conducted to identify impacts of the Proposed Project. The assumed transportation system for evaluating the Future Baseline condition with and without the Proposed Project included projects in the Regional Transportation Plan (RTP) prepared by the Placer County Transportation Planning Agency (PCTPA), as described earlier in this section under "methods of analysis".

In Rocklin, the RTP included many of the improvement projects contained in Rocklin's Circulation Element for the year 2010. The City of Rocklin's level of service policy states that Rocklin will plan for a LOS "C" standard except within one-half mile of a freeway (on roadways that have direct access to the freeway) where LOS "D" would be allowed. An analysis of the Future Baseline condition found that all of the major intersections in Rocklin would operate at LOS "C" or better under the assumed improvements in PCTPA's RTP and the EIR on Rocklin's Circulation Element Update. An analysis of the impacts of the Proposed Project assuming these same roadway improvements found no level of service impacts resulting from the additional traffic generated by the Proposed Project on Rocklin's transportation system.

A level of service analysis was also conducted on roadways in the adjacent areas of unincorporated Placer County using the same roadway segment analysis methods as in Placer County's General Plan Update EIR. This level of service analysis is based on the roadway capacity classes and evaluation criteria shown in Tables 4.9-10 and 4.9-11, respectively.

Placer County's level of service policy calls for LOS "C" conditions except for streets within one-half mile and with direct access to a state highway, where LOS "D" is allowed. Under Future Baseline conditions, the analysis indicated that all the roadway segments in unincorporated Placer County would operate at LOS "C" or better except for the following:

- Baseline Road from the Sutter County Line to Watt Avenue (LOS "D")
- Douglas Boulevard from Barton Road to Auburn-Folsom Road (LOS "D")
- Auburn-Folsom Road from Douglas Boulevard to Laird Road (LOS "D")

The EIR on the Placer County General Plan Update found that Douglas Boulevard between Sierra College Boulevard and Auburn-Folsom Road would operate at LOS "D" to LOS "E" conditions as a four-lane roadway under the 2010 development levels assumed in that EIR. Therefore, the 2010 "mitigated" transportation system for the County's Circulation Element included six lanes for this roadway segment. With this improvement, Douglas Boulevard between Barton Road and Auburn-Folsom Road would operate at LOS "C" or better conditions under the Future Baseline condition with and without the Proposed Project. The roadway segments listed above would continue to operate at LOS "D" under the Proposed Project. The analysis of the Proposed Project thus indicates that it would not cause additional level of service impacts on unincorporated Placer County roadways.

TABLE 4.9-10

ROADWAY CAPACITY CLASSES

Roadway Capacity Class	General Criteria			
	Stops/Mile	Driveways	Freeflow Speed Range	Lanes
1. Freeway - Level Terrain	0	None	55 - 65	4+
2. Freeway - Rolling Terrain	0	None	55 - 65	4+
3. Freeway - Mountain Terrain	0	None	55 - 60	4+
4. Arterial - High Access Control	1 - 2	Limited	35 - 50	2+
5. Arterial - Moderate Access Control	2 - 4	Moderate	30 - 35	2+
6. Arterial - Low Access Control	4+	High	25 - 35	2+
7. Rural 2-lane Highway - Level Terrain	-	Limited	55 - 65	2
8. Rural 2-lane Highway - Rolling Terrain	<1	Limited	55 - 65	2

SOURCE: Highway Capacity Manual, Transportation Research Board, 1985.

TABLE 4.9-11

EVALUATION CRITERIA FOR LEVEL OF SERVICE

Roadway Capacity Class	Maximum Daily Traffic Volume Level of Service				
	A	B	C	D	E
1. Freeway - Level Terrain	6,300	10,620	13,680	16,740	18,000
2. Freeway - Rolling Terrain	5,290	8,920	11,650	14,070	15,120
3. Freeway - Mountain Terrain	3,400	5,740	7,490	9,040	9,720
4. Arterial - High Access Control	6,000	7,000	8,000	9,000	10,000
5. Arterial - Moderate Access Control	5,400	6,300	7,200	8,100	9,000
6. Arterial - Low Access Control	4,500	5,250	6,000	6,870	7,500
7. Rural 2-lane Highway - Level Terrain	1,500	2,950	4,800	7,750	12,500
8. Rural 2-lane Highway - Rolling Terrain	800	2,100	3,800	5,700	10,500

SOURCE: DKS Associates, based on Highway Capacity Manual, Transportation Research Board, 1985.

The level of service policy for the state highway system in Placer County was based on the Placer County Congestion Management Program (CMP) which calls for LOS "E" conditions to be maintained on state highways in Placer County. The analysis of the Future Baseline condition indicates that I-80 would operate at LOS "F" conditions between Riverside Drive and Eureka Road/Atlantic Street and between the SR-65 junction and Sierra College Boulevard in Rocklin, assuming both sections to be composed of three mixed-flow lanes per direction with no HOV lanes. Highway 65 through Roseville would meet the CMP level of service standard under this scenario with LOS "B" or "C" conditions through Roseville. The analysis of the Proposed Project indicates that it would not cause additional portions of the State highway system to exceed the CMP level of service standard. While traffic volumes would increase compared to the Future Baseline condition, the levels of service on I-80 and SR-65 under the Proposed Project would remain unchanged.

Transit Impacts

The City has limited transit services. As discussed earlier in this section under "methods of analysis" the travel demand forecasts in the General Plan Update EIR included extension of light rail transit to Roseville, as well as a substantial increase in the local bus system with the City. The bus system assumed for that analysis was the same as that used by Sacramento Regional Transit for its long-range Systems Planning Study. In 1992, a Long-Range Transit Master Plan was developed for the City to guide the development of intra-city and inter-city transit service through the year 2010. This plan did not consider bus service to the area of the Proposed Project.

The most likely demand for transit service from the Proposed Project would be in the form of commuters seeking an alternative mode of transportation. As a large-scale employer in the City of Roseville, HP is subject to the City's transportation system management standards and is required to promote such alternative modes of transportation in order to reduce the number of vehicle trips generated by their business. Providing transit service to the Proposed Project would require the extension of existing transit routes or the establishment of a new route that would provide regular, daily service to the Proposed Project.

Improvements to the City's transit service will be needed to help achieve its roadway level of service standard and transportation systems management standards, as well as the trip reduction standards in both the Placer County Congestion Management Plan and the Placer County Air Quality Attainment Plan to achieve air quality goals. However, capital and operating funding sources for major expansions in transit services have not been identified. For this reason, the evaluation of the Proposed Project did not include increases in transit service beyond those included in the Future Baseline condition.

IMPACT 4.9-7:	Increased demand for transit service (both bus and light rail)
Applicable City Policies and Regulations:	General Plan Policies CC-1 through CC-5
Action Proposed by Applicant:	None
Significance:	<i>Significant</i>
Additional Mitigation:	Mitigation Measure 4.9-7 (Update Long-Range Transit Master Plan)
Residual Significance:	<i>Less than significant</i>

General Plan Policies CC-1 through CC-5 contain the following transit policies:

- Policy CC-1: Pursue and support transit service within the community and regions, and shall pursue land use, design and other mechanisms which promote the use of such services.
- Policy CC-2: Pursue all available sources of funding for transit services.
- Policy CC-3: Support and actively pursue the extension of light rail service to Roseville.
- Policy CC-4: Support and remain actively involved in the implementation of commuter rail services between Colfax and Davis, as well as other regional linkages.
- Policy CC-5: Consider the transit needs of senior, disabled, minority, low-income, and transit dependant persons when making decisions regarding transit service.

While the Applicant is already included in the City's Long-Range Transit Master Plan, the increased intensity and rate of development under the Proposed Project may warrant a revision of the Plan.

Light rail transit has been proposed along Roseville Parkway northwest of Harding Boulevard to Foothills Boulevard. This potential long-range rail extension would provide direct access to the Proposed Project. However, such an extension must be considered to be a "post 2010" improvement since funding has not been identified. More realistically, bus service could be provided to the Proposed Project along Foothills Boulevard, Blue Oaks Boulevard and/or Woodcreek Oaks Boulevard. Roseville Transit provides regularly scheduled fixed-route service, and RADAR provides on-call service throughout the City. The draft Master Plan does not propose to have transit service expanded to the project area and it is unlikely that such an expansion will occur by the year 2010 until a funding source is identified.

Bicycle Facility Impacts

The Bikeway Master Plan specifies that Class II bike lanes will be included on Foothills Boulevard, Blue Oaks Boulevard and Woodcreek Oaks Boulevard. Additionally, Foothills Boulevard has been identified as a bicycle commuter route. The Proposed Project could result in a substantial demand for safe and convenient pedestrian/bicycle facilities by employees of the Proposed Project for primarily transportation-related purposes.

IMPACT 4.9-8:

Increase demand for transportation-related bicycle trips

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan policies CE-1 through CE-3

Construct on-site bicycle facilities and provide linkage to City's Bikeway System

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The Bikeway Master Plan includes bicycle facilities on all major roadways in the vicinity of the Proposed Project. Adequate linkage between these facilities and bikeway facilities are included as part of the Proposed Project. The General Plan contains the following policies on bicycles:

Policy CE-1: Develop a comprehensive and safe system of recreational and commuter bicycle routes and trails that provides connections between the City's major employment and housing areas and between its existing and planned bikeways.

Policy CE-2: Coordinate its bikeway and trail system with those of neighborhood jurisdictions.

Policy CE-3: Pursue all available sources of funding for bikeways and trails.

The applicant should continue to encourage the use of bicycles as an alternative mode of transportation by expanding such existing support services as bicycle lockers, showers, and locker room facilities.

4.9.5 MITIGATION MEASURES

4.9-1: ADDITIONAL LANES ON BLUE OAKS BOULEVARD

Mitigation Measure 4.9-1: Add a second eastbound through lane on Blue Oaks Boulevard.

Amend the current CIP to include the addition of a second eastbound through lane at this intersection would create LOS "C" or better conditions. This second through lane would taper back down to one lane after the intersection and before the on-ramp to southbound SR-65.

4.9-2: ADDITIONAL LANES ON FOOTHILLS BOULEVARD

Mitigation Measure 4.9-2: Construct Additional Lanes on Foothills Boulevard

To accommodate the project traffic demands from the Proposed Project, the current CIP should be amended to include the two additional lanes that would be required on Foothills Boulevard from 500 feet north of Pleasant Grove Boulevard to HP's south entrance. These lanes are beyond those required for the Future Baseline condition, which required four lanes.

4.9-3 ADDITIONAL LANES ON BLUE OAKS BOULEVARD

Mitigation Measure 4.9-3: Construct additional lanes on Blue Oaks Boulevard

To accommodate the projected traffic demands from the Proposed Project, the current CIP should be amended to include a four lane section of Blue Oaks Boulevard is required between Foothills Boulevard and to HP's collector "B" and a six lane section between Foothills Boulevard and Washington Boulevard, including a five lane overcrossing of the SPRR tracks. The Future Baseline condition requires only two lanes west of Foothills Boulevard and four lanes east.

The Proposed Project should contribute its fair share to implementation of the full improvements needed on these roadways under a revised traffic fee program that includes the Proposed Project.

4.9-4: FOOTHILLS BOULEVARD/PLEASANT GROVE BOULEVARD

Mitigation Measure 4.9-4(a): Grade separation.

The grade separation of this intersection would provide LOS "C" or better conditions with the Proposed Project. The Proposed Project should contribute its fair share to implementation of the full improvements needed at this intersection under a revised traffic fee program that includes the Proposed Project.

-OR-

Mitigation Measure 4.9-4(b): Amend City's level of service policy to allow LOS "D" at intersections in specific plan areas.

The City's current LOS policy provides City Council the opportunity to allow LOS "D" conditions at intersections in the City's infill area if improvements that would provide LOS "C" or better are deemed infeasible. If this policy is expanded to include intersections in the specific plan areas, Council may opt to accept LOS "D" at the intersection of Foothills Boulevard and Pleasant Grove Boulevard instead of grade separation. See discussion of policy in Chapter 5.

4.9-7: TRANSIT DEMAND

Mitigation Measure 4.9-7: Update Long Range Transit Master Plan

Development of the Proposed Project should be included as part of the Long Range Transit Master Plan and should be consistent with the applicable General Plan transit policies in the Circulation Element.

4.10 AIR QUALITY

4.10 AIR QUALITY

4.10.1 INTRODUCTION

This section evaluates the potential impacts on air quality resulting from the implementation of the Proposed Project. Where appropriate, mitigation measures are suggested that would minimize or eliminate potential significant air quality impacts. Supplemental technical information concerning air pollutant monitoring data and modeling assumptions are provided in Appendix F of this Draft EIR.

4.10.2 ENVIRONMENTAL SETTING

Ambient air quality is commonly determined by climatological conditions, the area's topography, and the quantity and type of pollutants released. The Roseville area is subject to a combination of topographical and climatic factors that create the potential for increases in regional and local air pollutants. The following section describes pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant buildup and dispersion in Roseville. The environmental setting also discusses the sources, types, and health effects of air pollutants.

Climate and Topography

The project area is located in the Sacramento Valley Air Basin (SVAB), within western Placer County. Weather patterns throughout the SVAB, including Roseville, are affected by geography. Mountain ranges tend to buffer the SVAB from the marine weather systems that originate over the Pacific and are drawn inland by the jet stream. The SVAB, which extends from south of Sacramento to north of Redding, is bounded by the Sierra Nevada on the east, the Coast Range on the west, and the Cascade Range on the north. The only westerly breach in this barrier is the Carquinez Strait which exposes the midsection of the Valley to the Pacific Coast marine weather regime. Western Placer County is noticeably affected by this marine influence, which moderates climatic extremes and transports air pollutants into the area from distant sources such as the San Francisco Bay Area and the Sacramento region. Temperature moderation is especially evident on summer evenings when cooling occurs as a result of the penetration of sea breezes.

Weather in Roseville is characterized by summers that are typically hot and dry, and winters that are mild and wet. Summer temperatures range from an average low of 70°F to an average high of 90°F with temperatures in excess of 100°F being fairly common. This high average summer temperature, combined with very low relative humidity, produces hot, dry summers which contribute to ozone buildup. The winter season is characterized by overcast days and lengthy

periods of rain and drizzle. Winter temperatures range from an average low of 40°F to an average high of 57°F, with occasional overnight freezing temperatures. During winter months carbon monoxide (CO) accumulation is of concern. Annual precipitation averages 25 inches, and 90 percent falls from November through April. Prevailing winds are from the southwest with a secondary concentration from the northwest.

Surface or elevated temperature inversions are common in the late summer and fall. Surface inversions are formed when the air close to the surface cools more rapidly than the warm layer of air above it. Elevated inversions occur when a layer of cool air is suspended between warm air layers above and below it. Inversions result in air stagnation. Air pollutants accumulate under and within inversions, subjecting people in the region to elevated pollution levels and ensuing health concerns.

Criteria Air Quality Standards and Existing Concentrations

Currently, most of the effort to improve air quality in the United States and California is directed toward the control of five pollutants, called "criteria" air pollutants: photochemical oxidants (ozone), CO, particulate matter less than ten microns in diameter (PM₁₀), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Fifteen years ago, suspended particulate lead would have been included in this list, but the widespread availability and use of unleaded gasoline has effectively eliminated lead as an air quality concern. Pollutants subject to federal ambient standards are referred to as "criteria" pollutants because the EPA publishes criteria documents to justify the choice of standards. The federal and state standards for the criteria pollutants and other state regulated air pollutants are given in Table 4.10-1. Specific air quality regulations are discussed below.

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors". The term sensitive receptors refers to specific population groups as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. Areas sensitive to air pollutants near the project area include residential areas and schools to the south and southwest. Other sensitive areas include the nearest right-of-way where the children and the elderly have continuous access such as sidewalks. Table 4.10-2 presents the health effects for ozone, CO, PM₁₀, NO₂, and SO₂.

To determine whether the ambient air pollutant concentrations in the project area can cause health effects, ambient air pollutant concentrations must be measured. Two ambient air pollutant stations are in the vicinity of the project area. The North Highlands monitoring station is approximately 5.5 miles southwest of the project area. The 151 North Sunrise Avenue Roseville station is the nearest monitoring station. The Roseville station is about five miles east-southeast of the project area. The station started operation in March 1993.¹ Data from these two stations are presented in Appendix F.

TABLE 4.10-1
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS¹

Pollutant	Averaging Time	California Standard ²	Federal Standards ³	
			Primary ⁴	Secondary ⁵
Criteria Pollutants				
Ozone	1-hour	0.09 ppm	0.12 ppm	0.12 ppm
Carbon Monoxide	1-hour	20.00 ppm	35.00 ppm	35.00 ppm
	8-hour	9.00 ppm	9.00 ppm	9.00 ppm
Nitrogen Dioxide	1-hour	0.25 ppm	---	---
	Annual Average	---	0.053 ppm	0.053 ppm
Sulfur Dioxide	1-hour	0.25 ppm	---	---
	3-hour	---	---	1300 µg/m ³
	24-hour	0.04 ppm	365 µg/m ³	---
	Annual Average	---	80 µg/m ³	---
Suspended Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual Geometric Mean	30 µg/m ³	---	---
	Annual Arithmetic Mean	---	50 µg/m ³	50 µg/m ³
Lead	30 Day Average	1.5 µg/m ³	---	---
	Calendar Quarter	---	1.5 µg/m ³	1.5 µg/m ³
State Only Regulated Pollutants				
Sulfates	24-hour	25 µg/m ³	---	---
Hydrogen Sulfide	1-hour	0.03 ppm	---	---
Vinyl Chloride	24-hour	0.010 ppm	---	---
Visibility Reducing Particles ⁶	8 hour (10 A.M. to 6 P.M., PST)	--- ⁷	---	---
NOTES:				
¹ Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas; µg/m ³ in this table refers to micrograms per cubic meter.				
² California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM ₁₀ , and visibility reducing particles, are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded.				
³ National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentration above the standard is equal to or less than one.				
⁴ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the Environmental Protection Agency.				
⁵ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the implementation plan is approved by the EPA.				
⁶ This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range when relative humidity is less than 70 percent.				
⁷ In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.				
SOURCE: California Air Resources Board, 1994.				

TABLE 4.10-2 HEALTH EFFECTS SUMMARY OF THE MAJOR CRITERIA AIR POLLUTANTS	
Air Pollutant	Adverse Effects
Ozone	Eye irritation Respiratory function impairment
Carbon Monoxide	Impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin Aggravation of cardiovascular disease Impairment of central nervous system function Fatigue, headache, confusion, dizziness Can be fatal in the case of very high concentrations in enclosed places
Sulfur Dioxide	Aggravation of chronic obstructive lung disease Increased risk of acute and chronic respiratory disease
Nitrogen Dioxide	Risk of acute and chronic respiratory disease
Particulate Matter Less Than Ten Microns	Increased risk of chronic respiratory disease with long exposure Altered lung function in children With SO ₂ , may produce acute illness Particulate matter 10 microns or less in size (PM ₁₀) may lodge in and/or irritate the lungs
SOURCE: Bay Area Air Quality Management District, 1985.	

After air pollutant concentration data are collected, criteria air pollutants are classified in each air basin, county, or in some cases within a specific urbanized area. The classification is determined by comparing actual monitoring data with state and federal standards. If a pollutant concentration is lower than the standard, the pollutant is classified as "attainment" in that area. If an area exceeds the standard, the pollutant is classified as "non-attainment". If there are not enough data available to determine whether an area is exceeding the standard or not, the area is designated "unclassified".

Criteria pollutants, including their formation, health effects, ambient air pollutant concentrations, and classifications are discussed below.

Ozone

Ozone is a colorless gas with a pungent odor. Ozone causes eye irritation and respiratory function impairment. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO_x). ROG is composed of nonmethane hydrocarbons, and NO_x is made of different chemical combinations of nitrogen and oxygen, mainly NO and NO_2 . Motor vehicles are the primary source of ROG and NO_x . A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because of these reactions occur on a regional scale, ozone is considered a regional pollutant.

Ambient ozone data were collected at the Roseville and North Highlands stations. As shown in Table F-1 in Appendix F, the 1-hour ozone concentration reached 0.13 ppm at the North Highlands station in 1991 and 0.15 ppm at the Roseville station in 1993, constituting violations of the federal 0.12 ppm standard and the state 0.09 ppm standard. The federal ozone standard has been exceeded once in the last three years in North Highlands and seven times in 1993 in Roseville. The Sacramento Valley Air Basin was designated as a severe non-attainment area for state ozone standards. Under federal air quality standards, Placer County is designated as non-attainment.

Carbon Monoxide

Carbon Monoxide (CO) is an odorless, colorless, gas. CO causes a number of health problems including fatigue, headache, confusion, and dizziness (see Table 4.10-2). The incomplete combustion of petroleum fuels in on-road vehicles is a major cause of CO. CO is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the CO state standard are generally limited to major intersections during peak hour traffic conditions.

Ambient CO data have been collected at the Roseville and North Highlands stations. The CO 1-hour maximum in Roseville for the past two years was 5.0 ppm and the 8-hour maximum was 3.0 ppm. However, the North Highlands station had a CO 1-hour maximum of 7.0 ppm and the 8-hour maximum of 6.3 ppm (see Table F-2 in Appendix F). CO levels recorded at the North Highlands air monitoring station were considered worst-case background conditions for this project and were used as ambient level for the CALINE4 modeling in this report. The federal 8-hour standard for CO has not been exceeded since 1988. Placer County is designated an unclassified area for state CO standards. Placer County is designated a non-attainment area for federal CO standards.²

Particulate Matter Less Than Ten Microns (PM_{10})

PM_{10} are atmospheric particles resulting from fume-producing industrial and agricultural operations, and natural activities. Health impacts from breathing the particulates resulted in revision of the Total Suspended Particulate (TSP) standard to reflect particulates that are small

enough to be considered "inhalable", i.e., 10 microns or less in size. Current standards define acceptable concentrations of particulates that are smaller than 10 microns in diameter, referred to as the PM_{10} . PM_{10} includes materials such as sulfates and nitrates, which can cause lung damage.

Ambient PM_{10} data have been collected at both stations and are presented in Table F-3 in Appendix F. The recorded PM_{10} levels have exceeded the California 24-hour and annual geometric mean standards at both stations. Table F-3 shows that the state PM_{10} standard has been exceeded eighteen times in the last three years in North Highlands and four times in the last two years in Roseville. Placer County is designated a non-attainment area for state PM_{10} standards. Placer County is designated an unclassified area for federal PM_{10} standards.

Nitrogen Dioxide

Nitrous Dioxide (NO_2) is an indirect product of fuel combustion in industrial sources, motor vehicles, and other mobile sources (e.g., off-road vehicles, trains, aircraft, mobile equipment, and utility equipment). NO_2 causes a number of health problems including risk of acute and chronic respiratory disease. NO_2 concentrations in Placer County are below state and federal standards. Placer County is designated an attainment area for state and federal NO_2 standards.

Sulfur Dioxide

The major source of Sulfur Dioxide (SO_2) emissions is fuel-burning equipment in which fuel oil and/or coal are consumed. SO_2 causes a number of health problems including aggravation of chronic obstructive lung disease (see Table 4.10-2). SO_2 concentrations in Placer County are below state and federal standards. Placer County is designated a attainment area for state and federal SO_2 standards.

Toxic Air Contaminant Standards and Existing Concentrations

In addition to the criteria pollutants, another group of substances, called Toxic Air Contaminants (TACs), are known to be highly injurious, even in small quantities. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness). There are hundreds of substances that can be toxic when inhaled, but air quality standards have not been set for most of them.

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations and painting operations. Natural source emissions include windblown dust and wildfires. Farms, construction sites, and residential areas can add to air toxic emissions as well as research facilities. TACs include both organic and inorganic chemical substances. Examples include certain chlorinated hydrocarbons, such as solvents, certain metals, and asbestos.

The California Air Resources Board has prepared an air toxics emission inventory of mobile, area, and natural sources. The inventory identifies air toxics emissions from sources in each California air district and quantifies these emissions where feasible. Because of the difficulty in quantifying emissions from many air toxics sources, this inventory is not comprehensive and does not provide any information specific to the project area.

Health effects resulting from air toxics exposure can be categorized as either carcinogenic (cancer-causing) or non-carcinogenic. Health effects from carcinogenic air toxics are usually assessed in terms of cancer risk. Cancer risk from a project is normally expressed as the additional number of potential cancer cases per one-million people exposed to emissions from the project over their lifetimes. When exposure to more than one potential carcinogen is evaluated, the risks posed by the various individual air toxics are summed; this sum is the overall cancer risk estimate.

Non-carcinogenic health effects associated with air toxics exposure vary depending on the types and quantities of air toxics exposure. Adverse effects on health, as well as the potential for nuisance and other forms of irritation, depend largely on an individual's susceptibility. Non-cancer health effects of air toxics are usually considered by comparing estimated exposure levels to known or estimated thresholds for health effects. Often a safety factor, to account for sensitive populations, is included in the threshold level used in the comparison.

In the U.S., about 300,000 of each one-million people will develop cancer in their lifetimes. One EPA study provides a general idea of the relative importance of community air toxics sources in terms of health risk. This study, which considered cancer-related health risk due to air toxics in five cities, evaluated the relative contribution to cancer incidence of a number of common city sources of air toxics. Road vehicles were found to cause more than one-half the air toxics related health risk in the cities studied. Industrial sources such as chrome plating businesses, solvent users, and other manufacturers were responsible for more than one-fifth of the identified risk. Other common community sources, such as fireplaces, gasoline stations and hospital sterilizers, made up about 10 percent of the risk.

Existing Emission Sources and Concentrations

There are many types of air pollutant sources in the SVAB portion of Placer County. Basically, these sources are divided into two categories, mobile and stationary sources. The California Air Resources Board (CARB) maintains an emission inventory to determine the origin of air pollutants within the state's air basins and counties inside those air basins. Table 4.10-3 presents the latest Total Organic Gases (TOG), ROG, NO_x, CO, SO₂, TSP, and PM₁₀ emission inventory for the SVAB portion of Placer County.

Mobile sources are the primary source of Total Organic Gases (TOG), ROG, NO_x, CO, and SO₂. Mobile sources account for approximately 61 percent of the TOG, 62 percent of the ROG, 93 percent of the NO_x, 83 percent of the CO, and 92 percent of the SO₂ emissions in the SVAB portion of Placer County. Because of the direct link between vehicular emissions and the formation of the non-attainment pollutant ozone, air quality programs focus on reduction of

TABLE 4.10-3							
EMISSIONS SUMMARY FOR THE SACRAMENTO VALLEY AIR BASIN PORTION OF PLACER COUNTY							
Source Category	Pollutant Emissions (Tons per Day)						
	TOG	ROG	CO	NO _x	SO ₂	TSP	PM ₁₀
Stationary Sources							
Fuel Combustion	0.7	0.3	4.7	1.6	0.1	1.1	1.1
Waste Burning	1.0	0.7	14	0.0	0.0	1.1	0.9
Solvent Use	5.4	5.1	0.0	0.0	0.0	0.0	0.0
Petroleum Process, Storage and Transfer	0.6	0.6	0.0	0.0	0.0	0.0	0.0
Industrial Processes	1.6	1.2	0.0	0.0	0.0	1.3	0.7
Miscellaneous Processes ¹	0.4	0.4	0.2	0.0	0.0	40	21
Total Stationary Sources	9.9	8.4	19	1.6	0.1	44	23
Mobile Sources							
On-Road Vehicles	12	11	82	13	1.2	2.0	1.3
Other Mobile	4.3	4.1	21	14	1.3	0.7	0.7
Total Mobile Sources	16	15	100	27	2.4	2.7	1.9
TOTAL	26	24	120	29	2.6	46	25
NOTES: ¹ Miscellaneous Processes includes farming operations, construction and demolition, entrained road dust, unplanned fires, fugitive windblown dust, waste disposal, and natural sources. TOG = Total Organic Gases (ROG + methane or all hydrocarbons). TSP = Total Suspended Particulates (all dust). SOURCE: California Environmental Protection Agency Air Resources Board, 1993.							

mobile source emissions, and significant reductions have been achieved, most notably through the mandated state automobile inspection and maintenance program. Unfortunately, reductions in air pollutants from mobile sources have not resulted in a corresponding decline in air pollutant violations in the Placer County. This is likely due to the transport of pollutants from the Bay Area and the Sacramento area.

Mobile sources account for high CO concentrations at intersections. Existing CO concentrations were calculated at four intersections. A detailed discussion of the methods used are presented in the Method of Analysis, below. Modeling results are presented in Table 4.10-4. None of the analyzed intersections exceed the 1-hour state CO standard of 20.0 ppm; however, all four intersections exceed the 8-hour state CO standard of 9.0 ppm. The greatest 1-hour concentration occurs at the intersection of Foothills Blvd. and Roseville Parkway. The greatest 8-hour concentration occurs at the intersection of Woodcreek Oaks and Baseline Road.

Stationary sources are the primary source of TSP and PM_{10} . Stationary sources account for approximately 96 percent of the TSP and 92 percent of the PM_{10} emissions in the SVAB portion of Placer County. TSP and PM_{10} are produced from many kinds of fume-producing industrial and agricultural operations such as motor vehicle tires, combustion, atmospheric photochemical reactions, the burning of agriculture waste from woodstoves, construction activities, and non-agricultural burning. Natural activities also introduce TSP and PM_{10} into the atmosphere; wind-raised dust is one such source.

There are several permitted stationary sources within, adjacent to, and in the vicinity of the Proposed Project. These sources are permitted by the Placer County Air Pollution Control District (APCD). Hewlett-Packard has permits for a surface mount process, a sample test bum hood, a maintenance cleaning hood, two emergency generators, and a convection oven³. For the most part, these sources emit the same types of pollutants associated with automobiles. In 1993, total facility emissions included 10,500 pounds of volatile organic compounds (VOCs). Adjacent to the project area, NEC has APCD-permitted sources.⁴ Near the project area, Reynolds Metals, H.B. Fuller, the Roseville Area Peaking Facility (a power plant), Herman Miller, various gas stations, and several other facilities have their sources permitted with the APCD.⁵ Any new sources planning to locate in the vicinity would have to comply with all APCD rules and regulations, and California Clean Air Act and Air Toxics Hotspot Act requirements, and would have to obtain an "Authority to Construct/Permit to Operate."

4.10.3 REGULATORY SETTING

Air quality is regulated by several agencies including the EPA, CARB, and the Placer County APCD. Each of these agencies develop rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. In general, air quality evaluations are based upon air quality standards developed by the federal government and several state agencies. Emissions limitations are then imposed upon individual sources of air pollutants by local agencies. Mobile sources of air pollutants are largely controlled through federal and state agencies, while most stationary sources are regulated by the local APCDs or air quality management districts.

**TABLE 4.10-4
CALCULATED EXISTING MAXIMUM 1-HOUR AND 8-HOUR
CARBON MONOXIDE CONCENTRATIONS (IN PPM)**

Location	Averaging Time	Existing
1. Foothill Blvd. & NEC/Misty Wood	1-hr. 8-hr.	17.7 12.3
2. Woodcreek Oaks & Junction Blvd.	1-hr. 8-hr.	11.9 9.5
3. Hewlett-Packard north entrance	1-hr. 8-hr.	18.6 12.4
4. Woodcreek Oaks & Baseline Rd.	1-hr. 8-hr.	17.7 13.1
Backgrounds	1-hr. 8-hr.	7.0 6.3
California Standards	1-hr. 8-hr.	20.0 9.0
NOTE: The tabulated concentrations are the sums of a background component, which includes the cumulative effects of all CO sources in the project vicinity, and a local component, which reflects the effects of vehicular traffic on roadways. Local CO components were derived from the CALINE4 computer program, assuming worst-case conditions at the intersections. The location of the 1-hour receptor is at the curbside and the 8-hour receptor is 10 meters from the curb. Traffic data was provided by DKS Associates. Bold values exceed the California standards. SOURCE: EIP Associates, 1995.		

Placer County spans three air basins in California: the southwestern third of the county, which includes the project area, is within the SVAB; the northeastern portion is within the Lake Tahoe Air Basin; and, the remainder is within the Mountain Counties Air Basin. Because air quality is sometimes regulated on a county-by-county basis and sometimes on a regional basis (or within an air basin), air quality regulations and planning efforts in Placer County are intricate. For instance, under federal law, a large region called the Sacramento Air Quality Maintenance Area (SAQMA), which includes Sacramento, and parts of Yolo, Solano, and Placer Counties (including Roseville), has been designated non-attainment for the federal ozone and CO standards. Consequently, the jurisdictions in this region must solve the ozone and CO problem jointly. Under state law, pollutants are addressed on a county-by-county basis.

Federal

The Federal Clean Air Act of 1970, as amended, established air quality standards for several pollutants. These standards are divided into primary standards and secondary standards. Primary standards are designed to protect the public health, and secondary standards are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. In addition, the State of California has adopted its own standards. The State and federal standards are presented in Table 4.10-1.

In 1977, the EPA designated the Sacramento Air Quality Maintenance Area a non-attainment area for ozone and carbon monoxide. This non-attainment status was based on continued violations of the federal primary standards for these pollutants. Improvement in levels of these pollutants has occurred in the past several years, but the standards have not been met.

The Federal Clean Air Act required that regional plans be prepared for non-attainment areas illustrating how the federal air quality standards could be met by December 31, 1987. The Sacramento Area Council of Governments (SACOG) and member government agencies prepared programs designed to reduce emissions in the region through stationary source controls, transportation control measures, and mobile source controls.

Roseville is one of many urban areas that failed to attain the National Ambient Air Quality Standards by 1987. The 1982 Sacramento Air Quality Plan was disapproved by the EPA because it did not demonstrate attainment of the standards as required by the Clean Air Act. A construction ban on all new sources emitting more than 100 tons per year or expansion of existing sources by more than 40 tons per year of any primary pollutant has been imposed upon the Sacramento Air Quality Maintenance Area.

The EPA has adopted interim policies regarding post-1987 non-attainment areas. These policies gave non-attainment areas until the end of 1990 to revise the State Implementation Plan (SIP) to demonstrate attainment and maintenance of the standards. After submittal of the revised SIP, the EPA would classify non-attainment areas as near term (three to five years) or long term (more than five years). For near-term, non-attainment areas, pollutant reductions of three percent per year would have to occur until standards are attained, and maintenance of the standard for a period of 10 years would have to be demonstrated.

CARB approved the State Implementation Plan (SIP) on November 15, 1994, and submitted the SIP to the EPA. The SIP is a list of nitrogen oxides and reactive organic gases control measures for demonstrating attainment of ozone. The 1994 SIP was determined by the EPA to be inadequate and is currently in the process of being re-submitted to the EPA for approval. Final approval is anticipated to occur within the next few months. The SIP is to achieve attainment of the standards by 1999 or possibly 2005, depending upon the SAQMA's classification as serious or severe nonattainment. The Placer County APCD has the option to select a higher level of non-attainment (severe) and gain a longer time frame to achieve attainment. The steps to achieve attainment have not been determined, but will likely require significant emissions

reductions in both stationary and mobile sources. It is possible that the EPA will place an emissions cap (bubble) over transportation centers and require emission reductions. The sources within the bubble would have flexibility in deciding how the reductions would be best achieved.

State of California

The State of California has had its own ambient air quality standards for many years. These ambient standards are, in general, more stringent than the federal standards for the criteria air pollutants. Until recently, however, these standards were not required to be attained by any specific date.

The California Clean Air Act was signed into law on January 2, 1989. This legislation requires areas that exceed the California ambient air quality standards to plan for the eventual attainment of the standards. Areas have been designated as attainment or nonattainment with respect to the ambient air quality standards. The time given to various areas would depend upon the severity of air quality problems. The California Health and Safety Code Section 40914(a) requires that districts design a plan to achieve an annual reduction in district-wide emissions of five percent or more for each nonattainment criteria pollutant or its precursor, averaged every consecutive three-year period, beginning at base year 1987.

California's state air quality management agency, CARB, regulates mobile emissions sources, and oversees the activities of County APCDs and regional AQMDs. The CARB regulates local air quality indirectly by establishing vehicle emission standards, by conducting research activities, and through its planning and coordinating activities.

Placer County Air Pollution Control District

The project area is within the jurisdiction of the Placer County APCD. The Placer County APCD regulates air quality through its permit authority and through its planning and review activities over most types of stationary emission sources. The Placer County APCD is responsible for implementing emissions standards and other requirements of federal and state laws.

The project area is also part of the SAQMA. Each county adopted individual programs to reduce air pollution. These locally adopted programs, along with the programs of county APCDs and requirements for restrictions on automobiles by the CARB, formed the Air Quality Plan for the Air Basin required by the CAA Amendments of 1977. The Plan established air pollution control strategies intended to attain federal air quality standards by the December 31, 1987 deadline. The EPA disapproved the 1982 Air Quality Maintenance Plan on December 1, 1988, based on the inability of the Sacramento Plan to demonstrate attainment of federal ozone standards in the near future.

As required by the California Clean Air Act (CCAA), Placer County APCD has published its *Air Quality Attainment Plan*. The Plan addresses the CCAA requirement to attempt to bring the District into compliance with the State ambient air quality standards. The Plan focuses on O₃ and

CO. The Plan includes carefully planned strategies for progressive reduction of air pollutants by promoting active public involvement, by encouraging compliance through positive influence and behavior, and through public education in both the public and private sectors.

TACs are considered separately from the criteria pollutants in the regulatory process. Few regulatory standards have been set for TACs. Due to the lack of specific emission standards for TACs and the variety of substances that could be considered TACs, a health risk assessment is generally performed to estimate the potential for health risks associated with emission of TACs from proposed projects.

City of Roseville

The City of Roseville's General Plan contains an Air Quality Element with seven goals and eleven policies to improve the air quality in Roseville and comply and coordinate with the Placer County APCD's plans and concerns. The City has general, transportation, land use, energy-conservation, and hazardous material related policies to improve air quality in Roseville.

4.10.4 IMPACTS

Method of Analysis

Carbon monoxide concentrations were predicted at ten intersections for the Year 2010 scenarios using CALINE4, the fourth generation California Line Source Dispersion Model, developed by Caltrans. Concentrations were predicted at four intersections for existing conditions and six intersections for existing conditions plus project. Input data for this model include meteorology, street network geometries, traffic information, and emission generation rates. Required meteorological data include temperature, sigma theta (standard deviation of wind direction change), wind direction, and wind speed. Street network geometries require use of an x,y coordinate system onto which the modeled roadway can be overlaid in order to identify the relative locations of the traffic lane(s) and nearby receptor(s). Required traffic information generally includes peak hour traffic volumes, speed limit, level of service, and when modelling an intersection, signal cycle times. Emission factors were calculated using the Caltrans model CT-EMFAC which uses the California Air Resources Board EMFAC7F version 1.1 emission factors.⁶ Table F-4 from Appendix F presents the assumptions for inputs into the CALINE4 model used in this EIR.

Output from the model includes 1-hour CO concentrations in parts per million (ppm) at selected receptor location(s). To reflect total concentrations, the ambient CO concentration of the vicinity must be added to the CO concentration predicted by CALINE4. The ambient concentration is calculated as the second highest annual 1-hour and highest annual 8-hour observation at the nearest representative monitoring station over the past three years. The predicted CALINE4 concentration is calculated for the 1-hour averaging time. The 1-hour CO concentrations predicted by CALINE4 must be multiplied by 0.7 to convert to the predicted 8-hour CO concentrations.

The modeled intersections were selected based on the availability of traffic data, the magnitude of the traffic volume, the level of service, and the difference between the no project and with project levels of service.

Project regional emissions from vehicles, electricity, and natural gas usage were analyzed. Motor vehicle emission calculations were made for NO_x , CO, TOG, and PM_{10} using the California Air Resources Board (CARB) vehicular emissions rates generated by the Caltrans EMFAC7F (version 1.1) model, and vehicle miles travelled provided by the traffic consultant. Project electricity and natural gas usage emissions were calculated using South Coast Air Quality Management District emission rates.¹ Conservative office emissions rates were used for the project light industrial and employment commercial services areas since specific uses for those areas are unknown.

Construction PM_{10} , NO_x , ROG, and CO emissions are qualitatively discussed. Construction PM_{10} emissions have been estimated for projects using similar EPA measurements taken at apartment and shopping center construction in the southwestern United States. These measurements, which provide a rough indication of the maximum emission rate, indicate that approximately 1.2 tons of dust are emitted per acre per month of construction activity.⁷ These emissions probably included the very minor contributions of exhaust of construction vehicles.⁸ About 45 percent of this dust is composed of large particles which would settle out rapidly on nearby horizontal surfaces. Large diameter particulates generated by construction are, therefore, of concern more as a soiling nuisance than for unhealthful impacts. The remaining fraction of small suspended particulates or PM_{10} , could aggravate respiratory problems of new residents inhabiting the project site before all construction is complete.

Standards of Significance

Air quality impacts will be considered significant if one of the following criteria is exceeded.

- For CO CALINE4 modeling, concentrations of 20 ppm for the 1-hour concentrations and 9 ppm for the 8-hour concentrations are significant if the project increases concentrations at the intersection.
- For CO regional emissions, levels above 82 pounds per day.
- For ozone precursors and PM_{10} , any increase is considered significant. Any project that generates ozone precursors or PM_{10} emissions will inhibit the State's ability to attain state standards; therefore it would have a significant impact on air quality. Ozone precursors (ROG and NO_x) are required, within an air basin, to have a cumulative five percent per year net reduction until State standards are attained. PM_{10} is required, within an air basin, to have an annual net reduction until State standards are attained.
- Potential exposure of sensitive receptors to odors or substantial levels of toxic air emissions from industrial plant facilities.
- Inconsistency with the goals of the 1991 Placer County Air Quality Management Plan.

IMPACT 4.10-1:**Short-term emissions of PM₁₀**

Applicable City Policies
and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Short-term significant

Additional Mitigation:

Implement Mitigation Measure 4.10-1 (Provide dust controls)

Residual Significance:

Less than significant

Construction equipment and vehicles would temporarily increase PM₁₀ concentrations during clearing of vegetation, excavation, and grading. In addition, construction vehicles traveling on unpaved surfaces generate dust, as does wind blowing over exposed earth. These activities could affect residents of existing nearby and adjacent homes and future planned commercial and industrial land uses within the project area. Specifically, existing residences south and southwest of the project area would be affected. Project commercial and industrial land uses would be affected as subsequent phases of the project are constructed.

The PM₁₀ emissions produced would limit the ability of the Placer County APCD to meet the state PM₁₀ standards within the County.

The Roseville General Plan states that air quality should be improved, and that mitigation measures should be developed to minimize emissions. Mitigation Measure 4.10-1 provides for dust control plan to reduce PM₁₀ construction emissions. This measure would reduce the amount of PM₁₀ created by the project to a less-than-significant level.

IMPACT 4.10-2:**Short-term emissions of NO_x, ROG, SO₂ and CO**

Applicable City Policies
and Regulations:

None

Mitigation Proposed by Applicant:

None

Significance:

Short-term significant

Additional Mitigation:

Mitigation Measure 4.10-2(a) (Maintain construction equipment and vehicles), Mitigation Measure 4.10-2(b) (Develop and implement a Construction Employee Trip Reduction Plan)

Residual Significance:

Short-term potentially significant

Construction activities for the Proposed Project would temporarily increase NO_x, ROG, SO₂, and CO concentrations in the project vicinity. Equipment and vehicles would generate NO_x, ROG, SO₂, and CO during clearing of vegetation, excavation, grading, and other operations. These activities could affect residents of existing nearby and adjacent homes and planned commercial and industrial land uses within the project area. Specifically, existing residences south and southwest of the project area near Woodcreek Oaks Golf Course, could be affected by potentially high NO_x, ROG, SO₂, and CO concentrations. Commercial and industrial land uses within the project area could be affected during subsequent phases of the project.

The primary sources of construction-related NO_x, ROG, SO₂, and CO emissions are gasoline and diesel-powered heavy duty mobile construction equipment, such as scrapers and motor graders. In addition, construction employees would be traveling to and from the project site. Calculation of construction NO_x, ROG, SO₂, and CO emissions are not possible at this time because the specific equipment that will be used and the number of construction employees are not known. Nevertheless, the Placer County APCD significance standard of any increase of ROG or NO_x would be exceeded even assuming minimal construction activities, (e.g., one wheeled dozer, one scraper, and one off-highway truck were operating for eight hours during one day within the project area). This is considered a short-term significant impact.

Mitigation Measure 4.10-2(a) is recommended to reduce NO_x, ROG, SO₂, and CO construction emissions through maintenance of construction equipment and vehicles. Mitigation Measure 4.10-2(b) would reduce the number of construction employee trips. These measures, however, would not reduce the impact to the less-than-significant level.

IMPACT 4.10-3:**Increases of CO concentrations at intersections**

Applicable City Policies
and Regulations:

Action Proposed by Applicant:

Transportation System Management Ordinance
None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.10-3 (Provide regional emissions controls).

Residual Significance:

Significant

Carbon monoxide impacts were modelled for both Existing Plus Project conditions, as required by CEQA, and Year 2010 Plus Project, because the Proposed Project would be constructed over time, and will not be built out until 2010 or later.

The computer model CALINE4 was used to calculate CO concentrations at four intersections for existing conditions and six intersections for existing conditions with the Proposed Project, along with ten intersection for the Year 2010 (Future Baseline) and the Year 1010 Plus Project scenarios. Assumptions for the modeling are listed in Appendix F, Table F-4. Results of the modeling are shown in Table 4.10-5.

Project development would result in increased localized CO concentrations at intersections compared to conditions without the Proposed Project. The increased concentrations can be attributed to increased traffic resulting from implementation of the Proposed Project. The greatest increase occurs at the existing Hewlett-Packard north entrance. At this intersection, the 1-hour concentration increases by 4.3 ppm, while the 8-hour concentration increases by 3.2 ppm.

As shown in Table 4.10-5, all of the modeled intersections exceed the California 8-hour standard for both the Existing and Existing Plus Project scenarios. The California 1-hour standard is not exceeded for any of the intersections analyzed under existing conditions, but is exceeded at three of the Existing Plus Project intersections. Because both the 1-hour and 8-hour CO standards are exceeded, this impact is considered significant. Hewlett-Packard will accommodate Light Electric Vehicles (LEV) dedicating off-street routes along the north side of Roseville Parkway and in other location. This would help to offset long-term CO emissions, but would not reduce them to less-than-significant levels.

Project development would result in increased localized CO concentrations at intersections compared to Year 2010 without project conditions. The increased concentrations can be attributed to increased traffic associated with implementation of the Proposed Project. The greatest 1-hour increase, 1.8 ppm, occurs at the intersection of Woodcreek Oaks and Junction Blvd. The greatest 8-hour increase, 0.9 ppm, also occurs at this intersection.

As shown in Table 4.10-5, the Year 2010 CO concentrations are significantly lower than modeled existing concentrations. The reduction in emissions are primarily due to anticipated advancements in technology over the next 15 years, rather than from a decrease in traffic levels or traffic congestion. The reduced concentrations can also be attributed to an anticipated reduction in the background CO levels; while the 1-hour averaged background level in the City or Roseville is currently 7.0 ppm, the future level is anticipated to be 3.5 ppm. Similarly, the existing 8-hour averaged background concentrations is 6.3 ppm while the Year 2010 level is anticipated to be 2.5 ppm.

TABLE 4.10-5

**PREDICTED MAXIMUM 1-HOUR AND 8-HOUR
CARBON MONOXIDE CONCENTRATIONS (IN PPM)**

Location	Averaging Time	Existing	Existing & Plus Project	2010 w/o Project	2010 Project
1. Foothills & NEC/Misty Wood	1-hr.	17.7	20.7	7.9	8.1
	8-hr.	12.3	14.6	5.5	5.4
2. Woodcreek Oaks & Junction	1-hr.	11.9	12.8	5.9	7.7
	8-hr.	9.5	9.7	3.9	4.8
3. Foothills & Pleasant Grove	1-hr.	NA	17.6	7.9	8.6
	8-hr.	NA	13.7	5.2	5.5
4. Foothills & Blue Oaks	1-hr.	NA	22.9	7.5	8.2
	8-hr.	NA	14.9	4.9	5.0
5. Washington & Pleasant Grove	1-hr.	NA	NA	8.4	7.8
	8-hr.	NA	NA	5.6	5.4
6. Hewlett-Packard north entrance	1-hr.	18.6	22.9	6.5	6.8
	8-hr.	12.4	15.5	4.6	4.7
7. Washington & Roseville Pkwy.	1-hr.	NA	NA	5.6	5.8
	8-hr.	NA	NA	3.9	3.9
8. Industrial & Blue Oaks	1-hr.	NA	NA	6.9	7.1
	8-hr.	NA	NA	4.1	4.2
9. Fiddymment & Baseline	1-hr.	NA	NA	7.8	8.2
	8-hr.	NA	NA	4.8	5.1
10. Woodcreek Oaks & Baseline	1-hr.	17.7	18.6	6.6	6.6
	8-hr.	13.1	13.6	3.8	3.8
Backgrounds	1-hr.	7.0	7.0	3.5	3.5
	8-hr.	3.9	3.9	2.5	2.5
California Standards	1-hr.	20.0	20.0	20.0	20.0
	8-hr.	9.0	9.0	9.0	9.0

NOTE: The tabulated concentrations are the sums of a background component, which includes the cumulative effects of all CO sources in the project vicinity, and a local component, which reflects the effects of vehicular traffic on roadways. Local CO components were derived from the CALINE4 computer program, assuming worst-case conditions at the intersections. The location of the 1-hour receptor is at the curbside and the 8-hour receptor is 10 meters from the curb. Traffic data was provided by DKS Associates.

Bold values exceed the California standards.

SOURCE: EIP Associates, 1995.

Although CO concentrations are greater under the Year 2010 With Project scenario than under Year 2010 without the project, due to the low background CO levels and cleaner vehicle fleets emissions, the California 1-hour and 8-hour CO standards are not exceeded for either scenario.

Mitigation Measure 4.10-3 is recommended to reduce CO concentrations near intersections for Existing Plus Project conditions. Even with this mitigation, however, the impact would remain significant under the Existing Plus Project scenario.

IMPACT 4.10-4:

Increased air pollution in both the Hewlett Packard Master Plan Area and Sacramento Valley Air Basin

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.10-4 (Implement Mitigation Measure 4.10-3)

Residual Significance:

Significant

Project development would result in air pollutant emissions from vehicles, electricity, and natural gas usage. This analysis examines both the Existing Plus Project and Year 2010 Plus Project scenarios, because the Proposed Project may not be built out before 2010.

Table 4.10-6 presents emission totals expected from the three emission source groups for the existing conditions and the existing plus project scenario. Emissions from motor vehicle operation are anticipated to represent the greatest long-term air quality impact associated with development of the project area. Vehicle emissions would result in approximately 99 percent of all regional CO and TOG project emissions and 86 to 90 percent of all regional NO_x and PM₁₀ emissions. Project development would add approximately 31,222 daily vehicle trips to the project area. Using vehicular emissions rates generated by the Caltrans EMFAC7F (version 1.1) model, trips produced within the project area are estimated to generate approximately 9.43 tons per day of carbon monoxide, 0.96 tons per day of TOG, 0.76 tons per day of nitric oxides, and 0.03 tons per day of PM₁₀ emissions. These figures represent a roughly 230 percent increase over existing conditions.

TABLE 4.10-6**OPERATIONAL EMISSIONS EXISTING PLUS PROJECT CONDITIONS**

Emission Source	Emissions Generated (Tons/day)			
	CO	TOG	NO _x	PM ₁₀
Vehicles	9.43	0.960	0.755	0.031
Electrical and Natural Gas Usage	0.02	0.002	0.118	0.003
TOTAL	9.45	0.962	0.873	0.034

NOTE: Totals may not equal sum due to rounding.

SOURCE: Vehicle emissions were calculated using vehicular emissions rates generated by the Caltrans EMFAC7F (version 1.1) model. Electricity and natural gas emissions were estimated from the SCAQMD Air Quality Handbook, 1993. EIP Associates, 1995.

TABLE 4.10-7**OPERATIONAL EMISSIONS YEAR 2010 PLUS PROJECT CONDITIONS**

Emission Source	Emissions Generated (Tons/day)			
	CO	TOG	NO _x	PM ₁₀
Vehicles	2.61	0.202	0.378	0.017
Electrical and Natural Gas Usage	0.02	0.002	0.118	0.003
TOTAL	2.63	0.204	0.496	0.021

NOTE: Totals may not equal sum due to rounding.

SOURCE: Vehicle emissions were calculated using vehicular emissions rates generated by the Caltrans EMFAC7F (version 1.1) model. Electricity and natural gas emissions were estimated from the SCAQMD Air Quality Handbook, 1993. EIP Associates, 1995.

Commercial and light industrial electrical and natural gas usage could result in additional emissions. Electrical emissions are produced indirectly through increased electrical usage by air conditioners, electrical space heating, lighting and electrical appliances. Natural gas emissions are produced directly with the burning of natural gas by water heaters, space heating and gas appliances. Electricity generation produces very few hydrocarbon and particulate emissions. Natural gas combustion produces no sulfur oxides and very few particulate emissions. Electricity generation and natural gas usage could result in an estimated 0.02 tons per day of CO, 0.002 tons per day of TOG, 0.118 tons per day of nitric oxides and 0.003 tons per day of particulate emissions.

Total emissions produced by all three quantitative sources would be 9.45 tons per day of CO, 0.96 tons per day of TOG, 0.87 ton per day of nitric oxides, and 0.03 tons per day of particulate emissions. As discussed above, the Placer County APCD is required to achieve a five percent reduction in ozone precursor emissions (ROG and NO_x). The new growth anticipated with the project would immediately reduce the ability of the Placer County APCD to comply with the California Clean Air Act requirements.

Table 4.10-7 presents emission totals expected from the three emission source groups for the Year 2010 Without Project and Year 2010 With Project scenarios.

Vehicle emissions would result in approximately 99 percent of all regional CO and TOG project emissions and 76 to 84 percent of all regional NO_x and PM₁₀ emissions. Project development would add approximately 12,263 more daily vehicle trips to the project area than Year 2010 Without Project conditions. Using vehicular emissions rates generated by the Caltrans EMFAC7F (version 1.1) model, trips produced within the project area are estimated to generate approximately 2.6 tons per day of carbon monoxide, 0.2 tons per day of TOG, 0.38 tons per day of nitric oxides, and 0.02 tons per day of PM₁₀ emissions. These figures represent a 35 percent increase over Year 2010 without the project conditions.

Commercial and light industrial electrical and natural gas usage could result in additional emissions. Electrical emissions are produced indirectly through increased electrical usage by air conditioners, electrical space heating, lighting and electrical appliances. Natural gas emissions are produced directly with the burning of natural gas by water heaters, space heating and gas appliances. Electricity generation produces very few hydrocarbon and particulate emissions. Natural gas combustion produces no sulfur oxides and very few particulate emissions. Electricity generation and natural gas usage could result in an estimated 0.02 tons per day of CO, 0.002 tons per day of TOG, 0.118 tons per day of nitric oxides and 0.003 tons per day of particulate emissions.

Total emissions produced by all three quantitative sources would be 2.63 tons per day of CO, 0.20 tons per day of TOG, 0.5 tons per day of nitric oxides, and 0.02 tons per day of particulate emissions. As discussed above, the Placer County APCD is required to achieve a five percent reduction in ozone precursor emissions (ROG and NO_x). The new growth anticipated with the project would immediately reduce the ability of the Placer County APCD to comply with the California Clean Air Act requirements.

Mitigation Measure 4.10-3 is recommended to reduce regional emissions and to provide stationary source emission controls for both the Existing Plus Project and Year 2010 Plus Project scenarios. This mitigation measure would reduce the amount of pollutants emitted by the Proposed Project, but not to a less-than-significant level.

IMPACT 4.10-5:**Exposure of existing residents to minor amounts of odors**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Residents south and southwest of the project area could be exposed to minor amounts of odors generated by the Proposed Project's light industrial areas. Odor impacts on the residential properties would most likely be minor because the City of Roseville stipulates that there be very limited odor, dust, smoke, or other pollutants generated from light industrial designated land uses⁹ and any new stationary sources would need to comply with the Placer County APCD Rules and Regulations. Therefore, this impact is considered less than significant.

IMPACT 4.10-6:**Inconsistency with the Placer County Air Quality Attainment Plan**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Significant

Additional Mitigation:

Mitigation Measure 4.10-6 (Implement Mitigation Measures 4.10-1, 4.10-2 and 4.10-3).

Residual Significance:

Significant

Development of the project area would result in employment growth in excess of growth projections assumed in the 1991 Placer County Air Quality Attainment Plan. Project-related employment growth would result in additional commercial and industrial stationary and mobile source emissions increases which could obstruct attainment of air pollutant standards. As a result, the inconsistency with the 1991 Air Quality Attainment Plan would be considered a significant impact.

Mitigation Measure 4.10-6, which provides dust controls and construction maintenance actions to reduce construction emissions and regional emission controls to lower ozone emissions, is recommended. However, this impact would remain significant.

IMPACT 4.10-7:

Exposure of residents to criteria air pollutants generated by stationary sources

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policy AA-8

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Existing residents south and southwest of the project area would be exposed to criteria air pollutants generated by light industrial stationary sources. The Proposed Project proposes to develop approximately 250 acres of light industrial and commercial land uses in the project area. The light industrial land use area is adjacent to existing residential areas outside of the project area. Air pollutant impacts on the residential properties would most likely be minor because the City of Roseville stipulates that there be very limited odor, dust, smoke, or other pollutants generated from light industrial designated land uses¹⁰ and any new stationary sources would need to comply with the Placer County APCD Rules and Regulations, which would require stationary source emission controls. In addition, the General Plan contains the following policy for stationary sources of air emissions:

AA-8. Separate air pollution-sensitive land uses from sources of air pollution.

Because future uses must comply with federal, State and APCD regulations, the impact is considered less than significant.

IMPACT 4.10-8:**Exposure of residential areas to toxic air contaminants generated by stationary sources**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

General Plan Policy AA-8

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Existing residents south and southwest of the project area could be exposed to TACs generated by stationary sources. On-site sources within the proposed 260 acres of new light industrial land uses could produce TACs. Any new or revised stationary source may need to obtain a permit from the Placer County APCD and complete a health risk assessment before the new or revised source can operate. Air pollutant impacts on the residential properties would most likely be minor because the City of Roseville stipulates that there be very limited odor, dust, smoke, or other pollutants generated from light industrial designated land uses¹¹ and any new stationary sources would need to comply with the Placer County APCD Rules and Regulations.

General Plan Policy AA-8 (see above) would provide stationary source emission controls. Compliance with these measures and APCD Rules and Regulations, would results in a less-than-significant impact.

IMPACT 4.10-9:**Increases in toxic air contaminants during construction**

Applicable City

Policies and Regulations:

Action Proposed by Applicant:

None

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The construction of the Proposed Project can be expected to result in some temporary increases in toxic air contaminants. There would be several chemicals emitted in the construction of the commercial and industrial buildings, roads and parking lots. Specifically, asphalt paving would result in ROG emissions. No control devices are employed to reduce evaporative ROG emissions from cutback asphalt. Asphalt emulsions are typically used in place of cutback asphalt to eliminate ROG emissions. Project plans are not yet specific enough to accurately approximate the various construction emissions from potential chemical uses. However, any use of such chemicals would need to be done in compliance with State and federal laws, and APCD regulations. Therefore, this is considered a less-than-significant impact.

4.10.5 MITIGATION MEASURES

4.10-1 PM₁₀ EMISSIONS

Mitigation Measure 4.10-1: Provide dust controls.

In order to reduce construction-generated PM₁₀ emissions, the contractor shall comply with the dust control strategies developed by the Placer County APCD. The developer shall include in construction contracts the following requirements or measures shown to be equally effective:

- (a) The contractor shall water as indicated by City inspectors to keep all earth surfaces moist during clearing, grading, earthmoving and other site preparation activities.
- (b) The contractor shall use tarpaulins or other effective covers for haul trucks that travel on public streets.
- (c) The contractor shall sweep streets within and adjacent to the project as needed or as directed by City inspectors.
- (d) The contractor shall schedule clearing, grading and earthmoving activities during periods of low wind speeds, and restrict those construction activities during high wind conditions with wind speeds greater than 20 mph average during an hour.
- (e) The contractor shall control construction and site vehicle speed to 15 mph on unpaved roads.
- (f) The contractor shall minimize open burning of wood and vegetative waste materials from both construction and operation of the project. No open burning shall occur unless it can be demonstrated to the Placer County APCD that alternatives have been explored. These alternatives may include, but are not limited to, chipping, mulching and conversion to biomass fuel. For any open burning, an APCD permit must be obtained in conformance with APCD Regulation 3 (Open Burning), Rules 301-325.

4.10-2 NO_x, ROG, SO₂, AND CO SHORT-TERM EMISSIONS**Mitigation Measure 4.10-(a): Maintain construction equipment and vehicles.**

The contractor shall reduce NO_x, ROG and CO emissions by complying with the construction vehicle air pollutant control strategies developed by the Placer County APCD.

Mitigation Measure 4.10-2(b): Develop and implement Construction Employee Trip Reduction Plan

Consistent with the City's TSM ordinance, the construction contractor shall develop and implement a trip reduction plan designed to reduce construction-phase employee vehicle trips. Elements of this plan could include the following:

- Providing all construction employees with information relating to public transit facilities serving the site, such as bus routes and schedules;
- Carpooling incentives, including incentives for carpool participants such as preferred on-site parking; and
- Carpool rider matching services.

4.10-3 CO CONCENTRATION INCREASES AT INTERSECTIONS**Mitigation Measure 4.10-3: Provide regional emissions controls.**

The following measures shall be implemented in order to reduce the Proposed Project's contribution to regional air pollution:

- Employers within the project area shall consider employer-sponsored staggered work schedules, flexible work hours, compressed work week, ride matching services, carpool, vanpool, and buspool programs.
- Employers with more than 100 employees within the project area shall create educational programs to inform employees about combining vehicle trips, thereby limiting vehicle miles traveled and air pollutant emissions.
- Employers shall improve the thermal integrity of the buildings and reduce the thermal load with measures such as with automated time clocks or occupant sensors, and in compliance with City guidelines.

The City of Roseville requires all businesses with more than ten employees to comply with the city's transportation Systems Management (TSM) ordinance designed to reduce peak hour traffic on all roadways, encourage alternative transportation modes, and reduce total vehicle emissions. Currently, Hewlett-Packard's TSM Plan meets the city's mandatory requirements by providing an on-site TSM Coordinator, a commuter matching service, class II bicycle facilities, and posting pertinent region-wide transit information. In addition, Hewlett-Packard's TSM Plan meets the

city's optional requirement by providing bicycle storage lockers, on-site bicycles for use throughout the facility, showers and lockers, preferential car parking for rideshare participants, transit subsidy passes and a transit shelter for their employees. Hewlett-Packard is committed to reducing vehicle trips, traffic congestion and improving air quality and will continue to work with the city of Roseville to meet future TSM requirements.

4.10-4 INCREASED AIR POLLUTION IN BOTH THE HEWLETT-PACKARD MASTER PLAN AND SACRAMENTO VALLEY AIR BASIN

Mitigation Measure 4.10-4: Implement Mitigation Measure 4.10-3.

4.10-5 PLACER COUNTY AIR QUALITY ATTAINMENT PLAN

Mitigation Measure 4.10-6: Implement Mitigation Measures 4.10-1, 4.10-2, and 4.10-3.

ENDNOTES

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3. Finnell, John, Air Quality Engineer, Placer County Air Pollution Control District, Personal Communication, December 8, 1995.
4. Hobbs, Ann, Placer County Air Pollution Control District, personal communication, May 23, 1995.
5. Ibid.
6. California Department of Transportation, *CT-EMFAC, Caltrans Version of EMFAC7F (Version 1.1)*. Caltrans Division of New Technology, Materials and Research, Sacramento, July 12, 1994.
7. EPA, *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, NC, September, 1985.
8. Myers, Ron, "Personal communication with Ron Myers of United States Environmental Protection Agency of the Office of Air Quality Policies and Standards, Emission Inventory Branch on whether PM₁₀ from exhaust of construction vehicles is included in AP-42 Chapter 11.2.4.3 emission factor." Research Triangle Park, North Carolina. April 1, 1993.
9. City of Roseville, *General Plan 2010*, 1992.
10. Ibid.
11. Ibid.

4.11 NOISE

4.11 NOISE

4.11.1 INTRODUCTION

This section evaluates the potential increases in noise resulting from construction, traffic and operations associated with the Proposed Project. Where appropriate, mitigation measures are suggested that would reduce project-related noise levels.

4.11.2 ENVIRONMENTAL SETTING

The environmental backdrop for noise is presented with discussions on acoustic fundamentals, characteristics of sound propagation and attenuation, and human response to environmental noise. In addition, the existing noise sources, the measured noise levels, and the existing noise sensitive receptors in and surrounding the project area are addressed.

Acoustic Fundamentals

Noise is often defined as unwanted sound. Sound is a mechanical form of radiant energy transmitted by pressure waves in the air. It is characterized by two parameters: amplitude (loudness) and frequency (tone).

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic rather than a linear scale. As a consequence, the pressure difference in a 10 dB sound is 10 times that of a 0 dB sound, a 20 dB sound is 100 times the pressure difference of a 0 dB sound, and so on. Another feature of the decibel scale is the way in which sound amplitudes from multiple sources add. A 65 dB point source of sound, say a truck, when joined by another similar source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference for the average person.¹

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (abbreviated Hz; one Hz equals one cycle per second). The human ear is not equally sensitive to sound of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of this range

than in the lower. To approximate this sensitivity, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Listed in Table 4.11-1 are several examples of the noise levels associated with common situations.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. Three most commonly used are L_{eq} , L_{dn} , and CNEL. The energy equivalent noise level, L_{eq} , is a measure of the average energy content (intensity) of noise over any given period of time. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, L_{dn} , is the 24-hour average of the noise intensity, with a 10 dBA "penalty" added for nighttime noise (10:00 PM to 7:00 AM) to account for the greater sensitivity to noise during this period.² CNEL, the community equivalent noise level, is similar to L_{dn} , but adds a 5 dBA penalty to evening noise (7:00 PM to 10:00 PM).

Characteristics of Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, industrial operations. Noise generated by mobile sources typically attenuates (drops) at a rate between 3.0 to 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number of objects between the noise source and the receiver. Hard and flat surfaces such as concrete or asphalt have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces such as uneven or vegetated terrain have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuate at a rate between 6.0 to about 7.5 dBA per doubling of distance.

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the line of sight between the source and the receiver. Buildings, walls, berms, and dense foliage can all act as noise barriers. Buildings, concrete walls, and berms are a great deal more effective at reducing noise levels than wooden walls or dense foliage.

Human Response to Noise

The human response to environmental noise, such as planes, trains and automobiles, is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation, tasks demanding concentration or coordination, and at the highest intensity levels, to hearing loss. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels. Table 4.11-2 has a summary of the public health effects of community noise and the noise levels at which they can occur.

TABLE 4.11-1			
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY			
At a Given Distance From Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
	140		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110	Rock Music Concert	
Pile Driver (50')	100		Very Loud
Ambulance Siren (100')			
	90	Boiler Room	
Freight Cars (50')		Printing Press Plant	
Pneumatic Drill (50')	80	In Kitchen With Garbage Disposal Running	
Freeway (100')			
	70		Moderately Loud
Vacuum Cleaner (10')	60	Data Processing Center	
Department Store			
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')			
	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing
	0		
SOURCE: Arnold Peterson and Ervin Gross, 1963.			

TABLE 4.11-2**SUMMARY OF THE PUBLIC HEALTH EFFECTS OF COMMUNITY NOISE AND THE NOISE LEVELS AT WHICH THEY CAN OCCUR**

Effect	Level
I. Noise as a Stressor Increase incidence of high blood pressure that leads to increased risk of cardiovascular disease Vasoconstriction begins that can lead to high blood pressure	85 dBA (long term) 70 dBA
II. Adverse Effect on Task Performance Steady noise Irregular noise	90 dBA All levels
III. Prenatal and Childhood Effects Increased incidence of low birth weight High frequency hearing loss in fetuses Increased blood pressure in children Decreased reading ability, auditory discrimination or language development	70 dBA 85 dBA 75 dBA 65 dBA (all long term)
IV. Social Behavior and Mental Health Decreased helpfulness and social interaction Increased incidence of mental disorders	80 dBA 90 dBA
V. Sleep Disturbance	35 dBA
VI. Speech Interference Less than 5 feet between conversants 5 to 12 feet between conversants Over 12 feet between conversants	65 dBA 60 dBA 55 dBA
VII. Recreational Hearing Loss	85 dBA (long term)
SOURCE: "The Public Health Effects of Community Noise" by Carol S. Pennenga and Raymond M. Manganelli. Rutgers University, New Brunswick, New Jersey. Presented at the 81st Annual Meeting of the Air Pollution Control Association, Dallas, Texas, June 19-24, 1988.	

Existing Noise Sources, Measured Noise Levels, and Noise Sensitive Receptors

The major noise source contributing to the existing environment is motor vehicle traffic. Adjacent to the eastern edge of the project area is one major arterial roadway, Foothill Boulevard. Existing L_{dn} noise levels were calculated using the model SOUND32 for 12 roadway links. The traffic data were taken from traffic information provided by DKS Associates. Discussion of the model assumptions appears in Section 4.11.4. Table 4.11-3 presents the L_{dn} at 100 feet from the centerline of roadways and the distances from the centerline to the L_{dn} noise levels for the 60, 65, and 70 contours. The existing L_{dn} noise levels range from 57 L_{dn} along Pleasant Grove Boulevard west of Woodcreek Oaks Boulevard to 68 L_{dn} along Foothill Boulevard north of Pleasant Grove Boulevard.

Railroad noise in the project area is minor and is created by the Southern Pacific Railroad, which is approximately 1,600 feet east of the eastern edge of the project area. Noise levels generated by trains on the Southern Pacific line are expected to remain relatively constant through future years.³ The 70 L_{dn} noise contour for the Southern Pacific Railroad occurs 160 feet from the tracks, while the 65 L_{dn} and 60 L_{dn} contours occur at 320 and 580 feet from the track, respectively. The eastern edge of the project area is exposed to railroad noise levels in the low 50s L_{dn} .

The project area is also exposed to minor aircraft, agricultural, lawn maintenance, and residential noise. Aircraft noise is generated by aircraft traveling to and from McClellan Air Force Base, Lincoln Municipal Airport, and other airports in the vicinity. No airport 60 dBA noise contour extends within the project area. Portions of the project area are adjacent to properties to the north and west which are used for grazing. Minor noise is produced by farm equipment and animals. The Woodcreek Oaks Golf Club produces minor grass cutting and lawn maintenance noise along the southern edge of the project. The only existing nearby residential areas are near the southeast and the southwest corners of the project area. Minor noise would be produced by residential activities such as mowing, listening to music, children playing, and other activities.

There are several industrial noise sources adjacent to and within the project area. Hewlett-Packard produces minor vehicle noise. Adjacent to the eastern perimeter, the Albertson's Distribution Center produces automobile and truck noise. Near the project area to the northeast are several industrial firms which produce varying amounts of noise due to their manufacturing and vehicle activity.

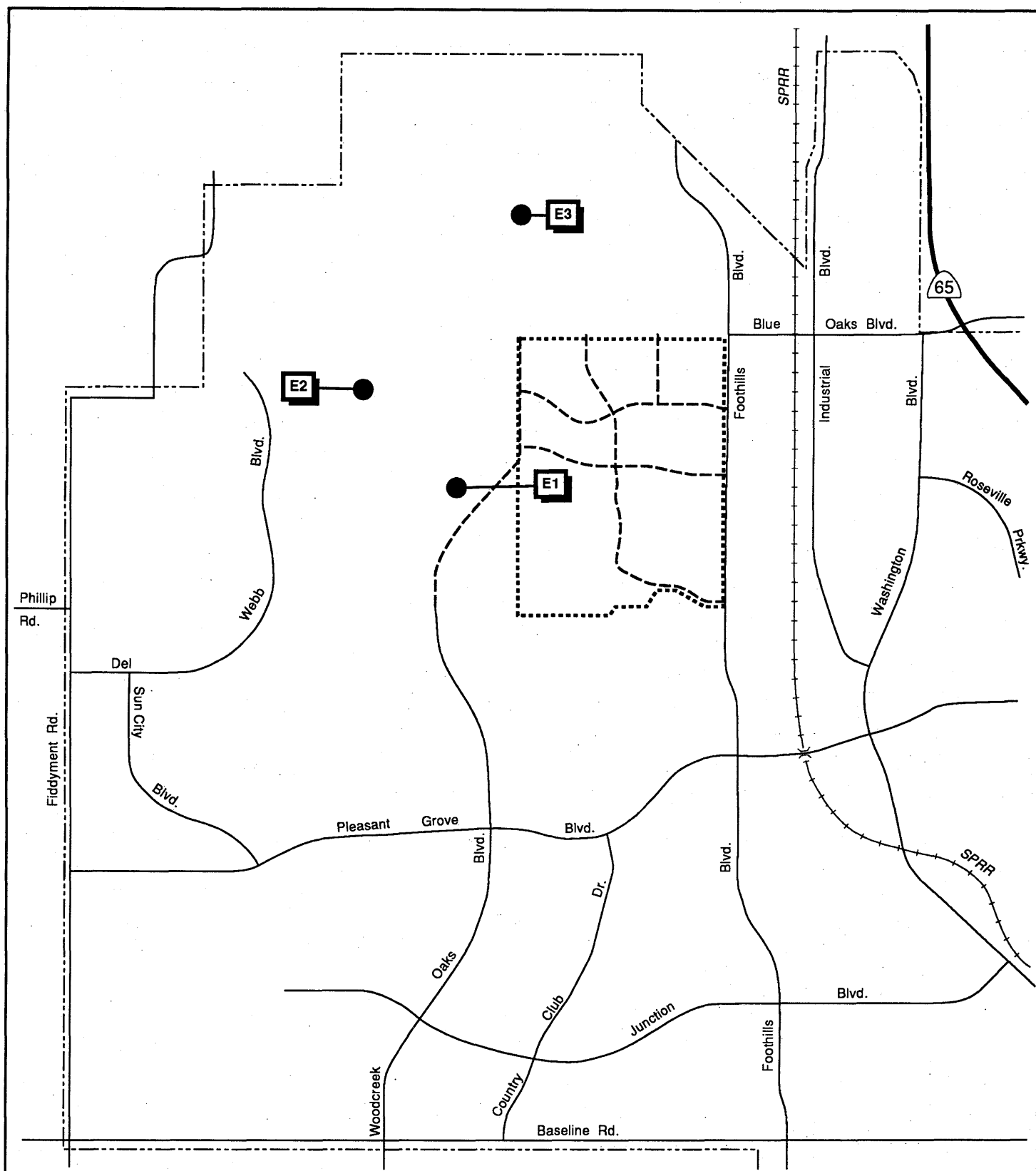
Noise was measured at three locations near the project area. These noise monitoring locations (E1, E2, and E3) are presented in Figure 4.11-1. The measurements were taken with Quest Electronics M-28 Noise Logging Dosimeters. The meters were calibrated before and checked after with a Quest Model CA-12B Sound Calibrator. Measurement E1 was taken near the western edge of the project area close to where the proposed Woodcreek Oaks Boulevard would cross the Pleasant Grove Creek South Branch. A two-minute measurement starting at 12:15 P.M. on April 25, 1995, resulted in an L_{eq} of 47.6. Measurement E2 was also taken on April 25, 1995, at 12:47 P.M. near the Pleasant Grove Creek South Branch west of the northwestern corner of

TABLE 4.11-3
MODELED EXISTING CONDITIONS L_{dn} NOISE LEVELS AT RECEPTORS 100
FEET FROM THE CENTERLINE OF THE ROADWAY AND DISTANCE TO 60, 65
AND 70 L_{dn} NOISE CONTOUR IN FEET

Location	L_{dn} at 100 feet	Distance to Noise Contour (feet)		
		70 L_{dn}	60 L_{dn}	60 L_{dn}
Foothills Blvd. N of Pleasant Grove	68	68	146	309
Foothills Blvd. S of Pleasant Grove	67	62	132	280
Foothills Blvd. N of Wakefield	67	67	142	304
Foothills Blvd. S of Junction	67	61	132	279
Foothills Blvd. of Baseline	67	66	140	300
Wood Creek Oaks S of Pleasant Grove	60	17	44	96
Pleasant Grove Blvd. W of Wood Creek Oaks	57	0	28	62
Pleasant Grove Blvd. E of Wood Creek Oaks	58	11	34	73
Pleasant Grove Blvd. W of Foothills	60	16	43	93
Baseline Blvd. E of Fiddymont	62	30	67	142
Baseline Blvd. W of Wood Creek Oaks	63	32	70	150
Baseline Blvd. E of Wood Creek	63	34	73	158
SOURCE: EIP Associates, 1995.				

the project area. This five-minute measurement resulted in an L_{eq} of 48.2. Spot check measurements were taken at the fence line of the wastewater pump station south of the Pleasant Grove Creek north of the northwestern corner of the project area. The highest measured noise level at E3 was 57.5 dBA along the western perimeter of the pump station.

Currently, two areas are sensitive to noise in the vicinity of the project area. Residential areas on Misty Wood Drive are near the southeast corner of the project area. Residential areas on Jonquil Drive are near the southwest corner of the project area. These residences are sensitive to both indoor and outdoor noise levels 24 hours per day.



- Hewlett-Packard Master Plan Area
- Roseville City Limits
- Existing and Approved Roads
- Proposed Roads

E1 ● Noise Monitoring Locations

SOURCE: EIP Associates, January 1996.

Figure 4.11-1

Noise Monitoring Locations

0 1/4 1/2
Scale in Miles

N
95190
Base

eip

4.11.3 REGULATORY SETTING

Responsibility for noise control varies among federal, state, and local levels of government depending on the type of source. Federal and state regulations mitigate transportation noise impacts on adjacent and nearby residential areas. In addition, federal agencies also regulate health-based maximum noise exposure levels. Local jurisdictions have the responsibility for determining what land uses are suitable in a given noise environment.

Federal

In the mid-1970s, the then Department of Health, Education and Welfare (DHEW) recommended maximum suggested non-occupational noise exposure levels designed to protect the general population from excessive noise levels. Table 4.11-4 presents these recommended noise levels and exposure periods. Although not official regulations, these noise levels are used as guidelines for short-term maximum noise exposure in the absence of quantitative local construction noise regulation.

State of California

In order to limit population exposure to physically and/or psychologically damaging noise levels, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. The California Department of Health Services' (DHS) Office of Noise Control has studied the correlation of noise levels and their effects on different land uses. As a result, the DHS has established four categories as guidelines for judging the severity of noise intrusion on specified land uses. These categories are represented in Figure 4.11-2, "Land Use Compatibility for Community Noise Environments". Noise in the "normally acceptable" category places no undue burden on affected receptors and would need no mitigation. As noise rises into the "conditionally acceptable" range, some mitigation of exposure, as established by an acoustic study, would be warranted. At the next level, noise intrusion is so severe that it is classified "normally unacceptable", and would require extraordinary noise reduction measures to avoid disruption. Finally, noise in the "clearly unacceptable" category is so severe that it can not be mitigated.

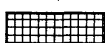
Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new multifamily residential units in California. These standards require that acoustical studies be performed prior to construction at building locations where the existing L_{dn} exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} levels to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted an L_{dn} of 45 as an upper limit on interior noise in all residential units. The U.S. Department of Housing and Urban Development (HUD) has set an L_{dn} of 45 as its goal for interior noise in residential units built with HUD funding. Standard residential construction for single family units typically attenuate noise by 20 decibels; therefore, the exterior L_{dn} should not exceed 65 in order for the California interior standards to be met.

TABLE 4.11-4
MAXIMUM SUGGESTED NON-OCCUPATIONAL NOISE
EXPOSURE, DHEW

Sound Level (dBA)	Daily Exposure Time
70	16 to 24 hours
75	8 hours
80	4 hours
85	2 hours
90	1 hour
95	0.5 hours
100	0.25 hours
105	8 minutes
110	4 minutes
115	2 minutes
SOURCE: City of Roseville, 1993.	

**Figure 4.11-2
Land Use Compatibility
For Community Noise Environments**

Land Use Category	Community Noise Exposure Ldn or CNEL, dB							
	50	55	60	65	70	75	80	85
Residential: Low-Density Single Family, Duplex, Mobile Homes								
Residential: Multiple Family								
Transient Lodging: Motels, Hotels								
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Auditoriums, Concert Halls, Amphitheaters								
Sports Arena, Outdoor Spectator Sports								
Playgrounds, Neighborhood Parks								
Golf Courses, Riding Stables, Water Recreation, Cemeteries								
Office Buildings, Business Commercial and Professional								
Industrial, Manufacturing, Utilities, Agriculture								

- | | | |
|---|---------------------------------|---|
|  | 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 included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. |
|  | GENERALLY UNACCEPTABLE | New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. |
|  | LAND USE DISCOURAGED | New construction or development should generally not be undertaken. |

Source: State of California General Plan Guidelines, 1990.

City of Roseville

The Noise Element of the Roseville General Plan has two noise goals to protect residents from health hazards and annoyance associated with excessive noise levels and to protect the economic base from incompatible land uses. These two goals are executed through the application of ten policies for transportation and fixed-noise sources, and through the execution of general noise policies. Specifically, the noise transportation policies set maximum noise level exposure for different land uses (see Table 4.11-5). Fixed noise source policies also set maximum noise levels for non-transportation noise sources (see Table 4.11-6).

The City of Roseville Municipal Code of Ordinances initiates noise standards for construction noise on public property. The Roseville Noise Ordinance limits construction activity to between 7:00 A.M. to 7:00 P.M. weekdays and between 8:00 A.M. to 8:00 P.M. on weekends. The ordinance also limits noise of an individual piece of equipment to 83 dBA at 25 feet and all construction noise to 86 dBA off the property site.

4.11.4 IMPACTS

Method of Analysis

The computer model SOUND32 was used to calculate noise levels along 12 existing, 16 Year 2010 Without Project, and 16 Year 2010 Plus Project roadways. SOUND32 is a version of the model STAMINA, a Federal Highway Administration Level 2 Noise Prediction model, with the addition of California vehicle emission levels. Average Daily Traffic (ADT) volume data provided by the transportation consultant, DKS Associates, were used for the calculation of vehicle volumes for modeling runs. The mix of cars, medium trucks and heavy trucks was taken from Caltrans data. Free flow speed limits provided by the transportation consultant were used. For modeling, a simplified flat terrain with a soft surface (4.5 decibel reduction per doubling of distance) was used.

From the output, the L_{dn} at 100 feet from the centerline of the roadway was calculated. Also the distances from the centerline to the L_{dn} noise levels for the 60, 65 and 70 contours were calculated. The L_{dn} at 100 feet from the centerline was used to determine the increase in noise due to the project. The distance to L_{dn} was used to locate where the impacts will occur and how far the setbacks would need to be in order to achieve the noise standards.

Typical noise levels for a common construction site were estimated from several types of heavy duty mobile and stationary construction equipment with the assistance of the highway construction noise computer model HICNOM, which is a Federal Highway Administration sponsored model. For this analysis, noise from one tractor, one grader, one loader, one backhoe and one truck from Table 4.11-7 was assumed.

Potential noise conflicts that could result from the development of light industrial uses in close proximity to existing residential uses were analyzed qualitatively using information from previous studies and measured noise levels from a site visit.

TABLE 4.11-5

**MAXIMUM ALLOWABLE NOISE EXPOSURE
TRANSPORTATION NOISE SOURCES**

Land Uses	Outdoor Activity Areas ¹ $L_{dn}/CNEL$, dB	Interior Spaces	
		$L_{dn}/CNEL$, dB	L_{eq} , dB ²
Residential	60 ³	45	—
Transient Lodging	60 ³	45	—
Hospitals, Nursing Homes	60 ³	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	60 ³	—	40
Office Buildings	65	—	45
Schools, Libraries, Museums	—	—	45
Playgrounds, Neighborhood Parks	70	—	—

¹ Outdoor activity areas for residential developments are considered to be the backyard patios or decks of single family dwellings, and the patios or common areas where people generally congregate for multi-family developments.

Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas and outside lunch facilities.

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.

NOTE: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Planning Department. Commercial and industrial uses have not been listed because such uses are not considered to be particularly sensitive to noise exposure.

SOURCE: Roseville General Plan, November 18, 1992.

TABLE 4.11-6

**PERFORMANCE STANDARDS
FOR NON-TRANSPORTATION NOISE SOURCES OR
PROJECTS AFFECTED BY NON-TRANSPORTATION NOISE SOURCES
(As Measured at the Property Line of Noise Sensitive Uses)**

Noise Level Descriptor	Daytime (7 A.M. to 10 P.M.)	Nighttime (10 P.M. to 7 A.M.)
Hourly L_{eq} , dB	50	45
Maximum level, dB	70	65

Each of the noise levels specified above should be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying, and are a primary source of noise complaints. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

SOURCE: Roseville General Plan, November 18, 1992

TABLE 4.11-7

**CONSTRUCTION EQUIPMENT NOISE LEVELS¹
BEFORE AND AFTER MITIGATION (dBA)**

Equipment Type	Noise Level at 50 Feet	
	Without Noise Control	With Feasible Noise Control ²
Earthmoving		
Front Loaders	79	75
Backhoes	85	75
Dozers	80	75
Tractors	80	75
Scrapers	88	80
Graders	85	75
Trucks	91	75
Pavers	89	80
Materials Handling		
Concrete Mixers	85	75
Concrete Pumps	82	75
Cranes	83	75
Derricks	88	75
Stationary		
Pumps	76	75
Generators	78	75
Compressors	81	75
Impact		
Pile Drivers	101	95
Jack Hammers	88	75
Rock Drills	98	80
Pneumatic Tools	86	80
Other		
Saws	78	75
Vibrators	76	75
¹ SOURCE: Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, prepared by Bolt, Beranek, and Newman for the U.S. Environmental Protection Agency, December 31, 1971.		
² Estimated levels obtainable by selecting quieter procedures or machines and implementing noise control features requiring no major redesign or extreme cost.		

Standards of Significance

Impacts are considered significant if one or more of the following conditions occur during implementation of the Proposed Project:

- Exterior noise levels of 65 L_{dn} or greater at proposed commercial uses due to transportation noise sources.
- Triggering of exterior noise levels of 60 L_{dn} or greater at nearby residences; 65 L_{dn} or greater at existing or proposed office uses; and 70 L_{dn} or greater at nearby playgrounds or neighborhood parks due to transportation noise sources.
- A three dBA increase in exterior noise levels where existing levels are 60 L_{dn} or greater at nearby residential, transient lodging, hospital, nursing home, church, or meeting hall land uses, 65 L_{dn} or greater at nearby office uses, and 70 L_{dn} or greater at nearby playgrounds and neighborhood parks. Three dBA is the minimum noise level that can be detected by the human ear.
- Construction noise outside the allowable City of Roseville Noise Ordinance hours of 7:00 A.M. to 7:00 P.M. weekdays and 8:00 A.M. to 8:00 P.M. weekends.
- Exterior hourly L_{eq} noise level of 50 dBA or maximum noise level of 70 dBA or greater between 7:00 A.M. and 10:00 P.M., or hourly L_{eq} noise level of 45 dBA or maximum noise level of 65 dBA or greater between 10:00 P.M. and 7:00 A.M. at nearby residential, transient lodging, hospital, nursing home, church, or meeting hall land uses due to proposed non-transportation noise sources.

IMPACT 4.11-1:

Temporary increases in noise levels due to earthmoving and general construction activities

Applicable City

Policies and Regulations:

General Plan Noise Level Performance Standards,
City Noise Ordinance

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Construction activities would temporarily increase noise levels in the vicinity of the project area. Earthmoving, materials handling, stationary, and impact equipment and vehicles would generate noise during clearing, excavation, grading, general building, and pipeline construction of the proposed light industrial, commercial, and business areas and the Woodcreek Oaks Boulevard extension. Construction vehicle traffic traveling to the project area would also generate noise. It is anticipated that construction traffic would access the project area from several major roadways such as Blue Oaks Boulevard and Foothills Boulevard. These activities could disturb residents of the Northwest Roseville Plan area.

Actual noise levels experienced at residences would involve several different kinds of equipment. Since the number, type and location of each kind of equipment that will be used is not known, it is not possible to accurately predict the noise level at nearby residences. Nevertheless, noise level estimates were made assuming one tractor, one grader, one loader, one backhoe and one truck all operating at the same time without feasible noise control and within an area of 28,600 square feet. The model HICNOM was used in the area source mode and noise levels were calculated for four locations, 10, 50, 100 and 500 feet from the construction area. Calculated worst-case temporary noise levels of 90 dBA could be expected for receptors 10 feet from the construction area, 86 dBA for receptors 50 feet from the construction area, 83 dBA for receptors 100 feet from the construction area, and 72 dBA for receptors 500 feet from the construction area. The closest residence is approximately 1000 feet from the southern project boundary, where noise levels would be considerably lower. This is assuming that there is direct line-of-sight between the noise sources and the exterior receptor. Noise levels for receptors inside buildings with the windows closed would be 15 to 20 dBA lower. Because compliance with the General Plan Performance Standards and the City Noise Ordinance, which limits the hours of operation from 7:00 A.M. to 7:00 P.M. on weekdays and 8:00 A.M. to 8:00 P.M. on weekends are expected, construction noise is considered a less-than-significant impact.

IMPACT 4.11-2:
**Traffic noise would increase along roadways
near residential areas**
Applicable City
Policies and Regulations:

General Plan Noise Level Performance Standards

Action Proposed by Applicant:

None

Significance:
Less than significant
Additional Mitigation:

None required

Residual Significance:
Less than significant

The Proposed Project would increase traffic volumes, which would result in noise level increases near existing residential areas. Noise impacts were analyzed with full buildout of the project for existing conditions and Year 2010 using the computer model SOUND32. L_{dn} noise levels were calculated for roadway links incorporating data from DKS Associates. Discussion of the model and assumptions are presented in method section, above. Table 4.11-8 presents the L_{dn} at 100 feet from the centerline of the roadway for both Existing conditions and Existing Plus Project and the distances from the centerline to the 60, 65 and 70 L_{dn} noise levels contours for the Existing Plus Project conditions. Table 4.11-9 shows the same information for the Year 2010 with and without the project.

The General Plan contains the following policies to ensure acceptable noise levels from transportation sources:

1. Allow the development of new noise-sensitive land uses (which include but are not limited to residential, schools and hospitals) only in areas exposed to existing or projected levels of noise from transportation noise sources which satisfy the levels specified in Table IX-1 (see Figure 4.11-1, above). Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table IX-1.
2. Require new roadway improvement projects to be mitigated so as not to exceed the noise levels specified in Table IX-1 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.
4. Require an acoustical analysis where:
 - a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the levels specified in Table IX-1;
 - b. Proposed transportation noise source projects are likely to produce noise levels exceeding the levels specified in Table IX-1 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 considered in the project design.

As shown in Table 4.11-8, existing noise levels 100 feet from the roadway centerline are generally higher than those recommended in the City of Roseville General Plan for residential and office land uses. For example, residences along Foothills Boulevard north of Pleasant Grove Boulevard up to 300 feet from the roadway centerline experience noise levels greater than the 60 L_{dn} standard.

As shown in Table 4.11-9, Year 2010 without project noise levels 100 feet from the roadway centerline range from 63 L_{dn} along Woodcreek Oaks Boulevard north of Pleasant Grove to 71 L_{dn} along Foothills Boulevard north of Baseline Road. These levels are higher than those recommended in the City of Roseville General Plan for residential and office land uses. The 60 L_{dn} contour (the residential land use standard) extends as far as 500 feet from the roadway centerline for the links analyzed, while the 65 L_{dn} contour extends as far as 240 feet from the

TABLE 4.11-8

**EXISTING CONDITIONS WITHOUT PROJECT
AND PLUS PROJECT L_{dn} NOISE LEVELS**

Location	Existing Conditions L_{dn} at 100 feet	Existing Conditions Plus Project			
		L_{dn} at 100 feet	Distances to Noise Contour (feet)		
			70 L_{dn}	60 L_{dn}	60 L_{dn}
Foothills Blvd. N of Pleasant Grove	68	69	86	183	388
Foothills Blvd. S of Pleasant Grove	67	68	77	165	350
Foothills Blvd. N of McNally	67	69	80	1702	361
Foothills Blvd. S of Junction	67	68	70	150	317
Foothills Blvd. of Baseline	67	68	73	155	331
Woodcreek Oaks S of Pleasant Grove	60	62	30	65	140
Pleasant Grove Blvd. W of Woodcreek	57	57	NA	28	63
Pleasant Grove Blvd. E of Woodcreek	58	59	16	42	91
Pleasant Grove Blvd. W of Foothills	60	61	21	52	110
Baseline Blvd. E of Fiddymont	62	63	32	70	149
Baseline Blvd. W of Woodcreek	63	63	34	74	160
Baseline Blvd. E of Woodcreek	63	63	36	77	165
NOTE: Contour either does not exist or lies within roadway.					
SOURCE: EIP Associates, 1995.					

TABLE 4.11-9					
YEAR 2010 WITHOUT PROJECT AND PLUS PROJECT L_{dn} NOISE LEVELS					
Location	Year 2010 Without Project L_{dn} at 100 feet	Year 2010 Plus Project			
		L_{dn} at 100 feet	Distances to Noise Contour (feet)		
			70 L_{dn}	60 L_{dn}	60 L_{dn}
Blue Oaks Blvd. W of Foothills	67	67	67	144	305
Foothills Blvd. N of Pleasant Grove	69	69	87	186	394
Foothills Blvd. S of Pleasant Grove	70	70	100	215	450
Foothills Blvd. N of McAnally	70	70	105	222	471
Foothills Blvd. S of Junction	70	70	103	218	464
Foothills Blvd. N of Baseline	71	71	115	246	514
Woodcreek Oaks N of Pleasant Grove	63	64	39	84	180
Woodcreek Oaks S of Pleasant Grove	68	68	72	155	331
Pleasant Grove Blvd. W of Woodcreek	64	64	39	85	183
Pleasant Grove Blvd. E of Woodcreek	68	68	75	160	340
Pleasant Grove Blvd. W of Foothills	69	69	87	186	394
Pleasant Grove Blvd. E of Foothills	71	71	115	243	514
Baseline Blvd. E of Fiddymont	68	68	72	155	329
Baseline Blvd. W of Woodcreek	66	66	51	109	232
Baseline Blvd. E of Woodcreek	65	65	49	106	225
Junction Blvd. W of Woodcreek	64	64	41	89	191
SOURCE: EIP Associates, 1995.					

roadway centerline. All residences and offices built within these contours would experience noise levels greater than the maximum allowable noise exposure as defined by the City of Roseville. For example, proposed residences along Pleasant Grove Boulevard (west of Woodcreek Oaks Boulevard) build up to 330 feet from the roadway centerline would experience noise levels greater than the 60 L_{dn} standard. Similarly, proposed residences along Foothills Boulevard and Woodcreek Oaks Boulevard have the potential of experiencing noise levels greater than the standard.

For both Existing Plus Project and Year 2010 Plus Project noise levels at 100 feet from the roadway would not increase by three decibels or more over No Project conditions at any of the analyzed roadways, so the increased noise would not be discernable to the human ear. Furthermore, implementation of the Proposed Project would not trigger unacceptable exterior noise levels along roadways that meet City noise standards at present. Therefore, this impact is considered to be less than significant.

IMPACT 4.11-3:	Noise generated by non-transportation sources
Applicable City	
Policies and Regulations:	Noise Element Policy 7 and General Plan Noise Level Performance Standards
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

Existing residents near the project area could experience noise from the proposed light industrial land uses within the project area. Light industrial land uses can produce loud noise levels from various machinery, pumps, mobile and stationary sources. The types of sources which would produce noise are unknown at this time; however, it can be assumed that air conditioners would create noise during the summer and automobiles and trucks would produce noise all year long in the parking lots and loading docks. Noise impacts from the industrial properties would most likely be minor because the City of Roseville stipulates that there be very limited noise generated from light industrial designated land uses.⁴ However, the actual noise levels that would be experienced at nearby existing residential areas on and near Misty Wood Drive and Jonquil Drive are unknown.

The City of Roseville's Noise Element Policy 7 addresses noise from non-transportation sources as follows:

7. Require proposed fixed noise sources adjacent to noise-sensitive uses to be mitigated so as not to exceed the noise level performance standards of Table IX-3.

In addition, Noise Policy 7 requires new fixed noise sources near noise-sensitive uses to be mitigated to acceptable levels. The Noise Performance Standards shown in Table 4.11-6 would reduce non-transportation noise impacts to a less-than-significant level.

IMPACT 4.11-4:**Train noise could be heard within the project area**

Applicable City

Policies and Regulations:

None

Mitigation Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Employees and visitors to the project area might hear train noise. Southern Pacific Railroad does not have predictions of future rail line volumes; therefore, existing noise levels were assumed for future train noise impacts. The project area is about 1,600 feet west of the rail line, and would be exposed to train noise levels in the low 50's L_{dn} . Actual train noise levels may be lower depending on future terrain, vegetation, and building attenuation. This noise level is lower than the 65 L_{dn} standard for commercial uses, so this is considered a less-than-significant impact.

4.11.5 MITIGATION MEASURES

None required.

ENDNOTES

1. Federal Highway Administration, 1982. *Report of Field Review - Highway Traffic Noise Impact Identification and Mitigation Decisionmaking Processes*. Office of Environmental Policy. June.
2. Code of California Regulations (CCR), 1988. California Noise Insulation Standards, California State Building Code (Part 2, Title 24, CCR), Appendix Chapter 35, Sound Transmission Control.
3. City of Lincoln. *Lincoln General Plan*, September 1988.
4. City of Roseville, *General Plan 2010*. Adopted November 18, 1992, Resolution #92-231

4.12 PUBLIC SERVICES AND UTILITIES

4.12 PUBLIC SERVICES AND UTILITIES

4.12.1 INTRODUCTION

This section evaluates the provision of public services and utilities available for development of the Master Plan. The public services and utilities analyzed include water, wastewater disposal, police services, fire protection services, solid waste disposal, electricity, natural gas, telephone services, schools and libraries. The section also identifies the anticipated demand for these services resulting from the implementation of the proposed Hewlett-Packard Master Plan. Much of the information presented in this section was drawn from the Comprehensive Land Use Element (CLUE) Draft EIR (February 1995). The information from the CLUE Draft EIR has been supplemented by personnel from the City, service providers and utilities.

4.12.2 ENVIRONMENTAL SETTING

DOMESTIC WATER

The existing domestic water information provided below was chiefly drawn from the City of Roseville Comprehensive Land Use Element Draft EIR, which was released to the public in February 1995.

Water Supply and Demand

Surface Water

The City of Roseville Water Division provides water to about 2,490 commercial and over 19,730 residential connections within the City. Total City-wide use ranges from 11,000 to 19,500 acre-feet per year (af/yr) with an average annual use in 1995 of about 19,300 af/yr¹. The current average daily water demand is about 16.8 million gallons per day (mgd). Peak usage is about 8.5 mgd during the winter and 32 mgd during the summer. The average level of water usage per household is approximately 0.5 af/yr.

Most of the City's water supply is provided from the United States Bureau of Reclamation (USBR) and the Placer County Water Agency (PCWA). The USBR is responsible for the management of the Folsom Reservoir. The Folsom Reservoir is part of the Central Valley Project, which is a federally-operated network of California dams, reservoirs, and canals. Water is discharged from Folsom Reservoir through an 84-inch diameter tunnel through Folsom Dam. USBR restrictions on the velocity of flow through the tunnel limit the rate of water conveyance from the reservoir to 315 cfs; however, normal flows have not yet reached this limit and historic

flows have only reached 136 mgd. Due to this limitation and commitments to other users, the maximum amount of water that can be obtained by the City of Roseville as specified in its USBR contract is 42 mgd.

Table 4.12-1 summarizes the total water entitlement available to the City of Roseville. The City's entitlement for surface water from the USBR includes 32,000 af/yr (approximately 28.5 mgd) from Folsom Reservoir². The City of Roseville has contracted for an additional 30,000 af/yr of water with PCWA, an independent water agency that provides water throughout Placer County. PCWA manages reservoirs located on the American and Yuba Rivers. Several water supply studies have been prepared or are in draft form, including: *Increasing Peak Water Supply Flows from Folsom Dam*³, *PCWA Master Plan*, and *American River Water Resources Investigation*⁴.

TABLE 4.12-1				
CITY OF ROSEVILLE WATER ENTITLEMENT				
Source	Agency	Amount (acre-ft/yr)	Average Daily Amount (mgd)	Present Status
American River at Folsom Lake	United State Bureau of Reclamation	32,000	28.5	Contracted
American River at Folsom Lake	Placer County Water Agency	30,000	17.8	Contracted
TOTAL		62,000	55.2	Contracted
SOURCE: City of Roseville Comprehensive Land Use Element, Draft EIR, P. 4.12-2, February 1995; (The Spink Corporation, 1993).				

There are limitations on the existing distribution system and regulations that prevent delivery of allocated PCWA water to the City of Roseville. These limitations include:

- the current City-PCWA intertie can only accommodate 10 mgd and this water is committed to conveyance from one side of the City to the other (wheeling of water through the City system) and is not intended for use by the City;
- PCWA water can only be distributed to the City through Folsom Lake after a special agreement between the City and the USBR has been executed; and
- even with a special agreement with the USBR, the Folsom Lake outlet works can only discharge a maximum of 42 mgd under the City's current contract⁵.

Therefore, to access the additional PCWA water, the City would need to either increase the intertie capacity or obtain modifications to the Folsom Lake distribution system and obtain USBR permission to distribute PCWA water through Folsom Lake. The City is currently working on an agreement with the USBR to allow PCWA water deliveries through Folsom Lake facilities.

Increases in the rate of water delivery would require changes in the USBR limitations on tunnel delivery rates or modification of the Folsom Reservoir outlet structure to increase conveyance capacity. Alternatives to previous options for increasing Folsom Dam delivery rates include increasing the Roseville/PCWA intertie capacity or constructing an additional water supply facility along the American River. The City is pursuing three options for additional supply, which are discussed below:

- **PCWA Supply Alternative:** This alternative would consist of new raw water conveyance lines, pumping stations, an expanded water treatment facility, and a lengthy treated water line extending from the PCWA treatment facility to the City of Roseville. PCWA's present water rights and entitlements are sufficient to supply this amount of water, which is tentatively planned to be diverted from the American River near Auburn. This alternative could provide 50.4 mgd which with the existing 42 mgd available to the City through the Folsom Dam, would meet the maximum day demands for the project and the City of Roseville.
- **City Supply Alternative (Folsom Lake):** For this alternative, the City would negotiate with the USBR to obtain additional amounts of water through the dam by proposing a modification in the contract allotment. The City's existing water distribution system has been planned with the concept of using Folsom Lake water, so this alternative would require fewer treatment and distribution improvements than the PCWA alternative. This alternative would require the construction of a new water supply pipe from Folsom Dam to the City's water treatment plant.
- **Below Folsom Lake Alternative:** This alternative would consist of a raw water inlet structure on the American River, a raw water pumping station, and a raw water conveyance pipe line leading to the existing water treatment plant. This alternative would also require fewer treatment and distribution improvements than the PCWA alternative, because it would provide raw water to the existing treatment plant and distribution system.

The City is continuing its efforts for both the acquisition of and access to additional water supply which will provide sufficient water to meet the future demand, including the water demand resulting from the development of the Hewlett-Packard Master Plan.

In addition to the water entitlements discussed above, the City can access emergency water from other sources to respond to emergency conditions or to transfer water between jurisdictions or to temporarily supplement the City's water supply. These sources are discussed below.

Wells

Additional water supply sources are provided through five City-owned groundwater wells. Two of the wells are not used because of water quality concerns. The remaining three wells can provide a total of 4.46 mgd. A sixth well will be installed during construction of the Del Webb project, and will provide up to 2,000 to 3,000 gallons per minute (gpm), which equates to 2.88 to 4.32 mgd. Wells are used as back-up water sources and when emergency situations require increased quantity.

Interties With Surrounding Agencies

The City of Roseville maintains interties with four surrounding agencies: PCWA, San Juan Suburban Water (SJSWD), Citizens Utility (CU), and the Citrus Heights Irrigation District (CHID). The interties can be used to transfer water between other jurisdictions or to supplement the City of Roseville's water supply. The CU and CHID supplies are only accessible for emergency zonal use due to low operating pressures in the CU and CHID distributing systems. They cannot be relied upon as a continued source of water.

In the past, the PCWA and SJSWD interties have been used during interruptions of water deliveries from the City water treatment plant. The PCWA intertie which has a maximum capacity of 10 mgd, is being used to deliver water to PCWA customers outside the City of Roseville. The PCWA is entitled to use the full 10 mgd to serve the Dry Creek area. Therefore, the PCWA intertie does not have sufficient capacity to provide a long-term water supply to the City of Roseville.

Drought Conditions

In 1991, the City of Roseville developed and adopted the Roseville Water Conservation and Drought Mitigation Plan. Under this plan, the City has authority to declare water shortage conditions and implement drought related mitigation measures. The City can initiate this process by declaring the drought stage and imposing the appropriate and corresponding drought response measures. The stages and drought response measures are presented in Table 4.12-2. City groundwater wells can be activated to supplement surface water during droughts, but cannot be used to avoid declaration of Stage I or Stage II conditions.

Due to the past drought conditions throughout California, Roseville's water entitlement was reduced by 50 percent in 1990, 75 percent in 1991, 28 percent in 1992, and 44 percent in 1994. The 75 percent reduction in 1991 required the City to exercise water options with PCWA. Even with the PCWA option, the City had a 3,000 af/yr shortfall in 1991, which equated to 2.7 mgd and represented approximately 20 percent of the water demand. Per the Water Conservation and Drought Mitigation Plan, the City of Roseville declared a Stage II drought and imposed the corresponding drought response measures. Although substantial rainfall during the 1992-1993 and 1994-1995 rain seasons has ended the drought, the City's Drought Mitigation Plans would apply during any future droughts.

TABLE 4.12-2

**CITY OF ROSEVILLE
DROUGHT STAGES AND DROUGHT RESPONSE MEASURES**

Stage	Surface Water Supply	Drought Response Measures
Basic Stage	Capable of meeting all projected demands	Landscape standards, drought-tolerant landscape for model homes, water consumption calculations required, site reviews including water reclamation or recycling capabilities.
Stage I	Capable of meeting 90 percent of projected demands	Basic Stage mitigation plus no washing of paved areas, use of buckets and control nozzle for washing vehicles, restaurants serve water only upon request.
Stage II	Capable of meeting 80 percent of projected demands	Stage I mitigation plus irrigation of landscape only from 4 am to 8 am or 8 pm to 10 pm, reduction of nonresidential irrigation by 30 percent over 1990 usage.
Stage III	Capable of meeting 70 percent of projected demands	Stage II mitigation plus allowance of only drought-tolerant varieties for new and expanded landscaping, reduction of nonresidential irrigation by 50 percent over 1990 usage, hand watering of trees and shrubs, no watering of golf course fairways, irrigation of only one-half of City park and median turf areas, drainage of all decorative pools and fountains, augmentation of construction dust control by use of hardened temporary travel routes, covering of swimming pools when not in use and prohibition of refilling drained swimming pools.
Stage IV	Capable of meeting 60 percent of projected demands	Stage III mitigation plus reduction of nonresidential irrigation by 75 percent over 1990 usage, residential irrigation only by hose with control nozzle, no irrigation of City park and median turf, prohibition of using water for dust control.
Stage V	Capable of meeting 50 percent of projected demands	Stage IV mitigation plus no irrigation of turf and grass areas, irrigation of drought tolerant trees and shrubs only by hose control nozzle.

SOURCE: City of Roseville Water Conservation and Drought Mitigation Plan, 1991.

Water Treatment

The City operates the Roseville Water Treatment Plant, a potable water treatment plant that treats potable water from the Folsom Reservoir. The plant is located on Barton Road in the eastern portion of the City. The plant has primary clarification and filtration capabilities. Chemical addition includes polymer addition prior to clarification and chlorination for disinfection after filtration. Other chemical additions, including lime and fluoride, can be added as necessary to the City's water supply.

The plant has recently been expanded to a treatment capacity of 48 mgd. In 1991, the plant operated at an average of 21 mgd, resulting in a surplus capacity of 27 mgd. Although the plant has surplus treatment capacity, the City's surface water supply remains limited by the 42 mgd maximum supply allowed under the USBR contract.

Water Distribution

A 42-inch pipeline and a 63-inch equivalent pipeline will carry water from the treatment plant into the southeast corner of the City. The 63-inch equivalent pipeline is being installed to provide ultimate capacity.⁶ A four-million-gallon City-owned reservoir and a two-million-gallon, City-owned reservoir are located at the treatment plant, water is also stored in a six-million-gallon City-owned reservoir located just west of Sierra College Boulevard in the Cavitt Ranch area. These reservoirs are used for operation, fire flows and emergency storage. Water throughout the City is distributed by pipelines ranging from 12 inches or smaller to as large as 66 inches.⁷ The delivery system, according to the City of Roseville, adequately delivers water throughout the City, maintains acceptable pressure level, and provides back-up delivery in the event of disruption to normal service.⁸ The water distribution system infrastructure and facilities are funded through connection fees from developers on a fair-share basis. Major infrastructure improvements to maintain City facilities are funded by operation and maintenance fees, and are prioritized in the City's capital improvement plan⁹.

Water distribution facilities are provided to the project area in two locations. In the eastern portion of the project area an existing water line is located along Foothills Boulevard. Additionally, the existing water main along Blue Oaks Boulevard is proposed to be extended westward along the northern boundary of the project area.

Water Conservation

The Water and Energy Conservation Component of the City of Roseville General Plan encourages resource conservation and protection. In the interest of promoting water conservation, the City provides an information program to encourage conservation and to help reduce consumption. Title 24 of the California Code of Regulations is the implementation tool for such conservation efforts required by water system policies. The Code requires water conserving standards for new developments, including low-flow shower heads and low-flush toilets. In addition, the Central Valley Project Improvement Act of 1992 mandates, among other measures, that municipalities implement water conservation measures.

Reclaimed Wastewater

The City of Roseville does not use reclaimed water at this time. The facilities have all been completed, but the City is waiting for final approval from the state to begin processing wastewater to be used for irrigation. It is estimated to take a year before the system gets approved and is functioning. All future landscape medians and parks in the western portion of the City will, however, use reclaimed water. The reclaimed water distribution system uses an existing sewer force main that was abandoned after construction of a new force main, which increases sanitary waste conveyance capacity. In addition, the system will utilize a pumping facility with a 6 mgd capacity¹⁰.

Current flows to the treatment plant average between 9 and 10 mgd. The plant has recently been expanded to 18 mgd. The system is capable of supplying 6 mgd of reclaimed wastewater and will be capable of supplying additional water as the rate of inflow increases.

Water Use at the Existing Hewlett-Packard Facility

The City of Roseville Water Division provides water to the existing 200-acre Hewlett-Packard facility. Water is supplied through a 24-inch water main that runs north/south along Foothills Boulevard. The existing campus is supplied through a 12-inch water line and through 8-inch and 6-inch domestic water lines. A new 24-inch water main is proposed along the future extension of Blue Oaks Boulevard to the west. There are no wells on the site. In 1994/95, demand for domestic water averaged 3,454,800 cf/yr and 5,852,900 cf/yr for irrigation.¹¹

Hewlett-Packard complies with the City of Roseville's water conservation program and during periods of drought reduces irrigation needs by 30 percent. Presently, reclaimed water is not being used for irrigation on the site.

WASTEWATER

Wastewater Collection

Wastewater from the City of Roseville is collected in and travels through gravity pipelines and force mains which deliver wastewater to the Roseville Regional Wastewater Treatment Plant. The plant is located in the southwest portion of the City. Major collection lines vary in size, from 15 inches to 66 inches.¹² The City operates 21 wastewater pumping stations.

The wastewater collection and treatment system infrastructure is funded by fees, dedications, and exactions, and is prioritized in the City of Roseville capital improvement plan. The City of Roseville Municipal Code, Section 14.6, mandates that new development participate in the Regional Sewer Connection Fee, used for funding the expansion of the treatment plant, and the Local Sewer Connection Fee, used for expansion of the collection system throughout Roseville. The Special Area Sewer Connection Fee is assessed to properties that are serviced by the wastewater force main entering the treatment plant from the north and wastewater flows that pass through the weir near Oakridge and Coloma Way.¹³ This fee is applied to sewer replacement, sewer enlargement, lift stations, and other improvements for areas of special benefits on a fair-

share basis, as necessary to supply specific areas or developments. In addition to these fees, Sewer Special Benefit Area Number 2 is a financing district established in the north central area as part of the North Roseville-Rocklin Sewer Assessment District. This benefit area provides financing for new or modified pump stations, lift stations, and gravity pipelines.

Wastewater Treatment

The City's wastewater is treated at the Roseville Regional Wastewater Treatment Plant, which is located on Booth Road. The treatment plant also treats wastewater from Rocklin, Loomis, Granite Bay, and several unincorporated portions of Placer County.¹⁴

The plant provides tertiary wastewater treatment. The main components include primary clarification, activated sludge, secondary clarification, filtration, and disinfection. The contact stabilization, which provides for tertiary treatment, has been upgraded to full nitrification. The plant has provisions for chemical additions at various points in the process. The plant can discharge up to 18 million gallons per day (mgd) into Dry Creek under an existing National Pollutant Discharge Elimination System permit. The residual solids are transported to the Western Regional Sanitary Landfill.

The plant's existing capacity is 18 mgd average dry weather flow. Current flows are averaging 10 mgd, of which 5 mgd come from the City of Roseville. Peak flows approach 30 to 36 mgd in wet conditions. The City is planning to expand wastewater treatment capacity to serve its needs through 2010.

The City, in conjunction with other incorporated and unincorporated areas, is preparing a Wastewater Treatment Service Area Master Plan.¹⁵ This plan addresses the feasibility of expanding the existing city treatment plant to provide treatment capacity through 2015. In addition, the feasibility of constructing a second wastewater treatment plant in the Pleasant Grove wastewater shed is being investigated.

Wastewater Collection and Treatment at the Existing Hewlett-Packard Facility

The wastewater stream from Hewlett-Packard is treated at the Roseville Regional Wastewater Treatment Plant, located on Booth Road. There is no on-site sewer treatment system. Adjacent to the southwest corner of the project area there is a city-owned lift station where wastewater is collected from 21-inch and 15-inch sewer lines that feed into the Roseville Regional Wastewater Treatment Plant.

POLICE SERVICES

The Roseville Police Department (RPD) provides police protection services to the City of Roseville. The RPD has a force of 74 sworn officers headquartered at 401 Oak Street. A new headquarter facility is being planned for 1051 Junction Boulevard and is expected to be open in about two years.¹⁶ The RPD is divided into six beats with one or two reporting areas per beat.

The project area is within Beat 6. Beat 6 is considered a large patrol area and extends from Baseline Road on the south, Washington Boulevard on the north and east, and the Roseville City Limits on the west and north.¹⁷

The RPD has indicated that flexibility is a key component in the provision of competent police service, and that standard ratios of police officers to population do not define adequacy of protection. Flexibility in service ratios allows the department to better respond to changes in the frequency and nature of crimes in the city. For this reason, the City has not adopted a police-to-population ratio. The current ratio is approximately 1.17 officers per 1,000 people. RPD has indicated that even without an adopted ratio, they would not want the ratio to fall below one officer per 1,000 people. The RPD's response time is 3 to 5 minutes or less for emergency calls.

The Hewlett-Packard facility currently employs their own security force that oversees security seven days a week, 24-hours a day. In addition, all vehicle traffic access to the site is controlled and a security patrol monitors the site on a regular basis including enforcing parking regulations. On a typical work day there are 23 security officers monitoring the site. The Roseville Police Department is only contacted on an as-needed basis. In addition, the RPD is a member of the regional high-tech crimes task force, formed in December 1995, which responds to major electronic and telecommunications crimes in the Sacramento County and roseville region.

FIRE PROTECTION SERVICES

The Roseville Fire Department (RFD) provides fire protection services within the City of Roseville. The RFD operates four fire stations serving the City of Roseville. The RFD employs 57 firefighters for emergency response and 11 staff members for administrative support.¹⁸

The RFD fire department headquarters (Fire Station No. 1) is located at 401 Oak Street and maintains a maximum staff of 7 firefighters at all time, including an engine company consisting of a captain, engine driver, and a firefighter/paramedic.¹⁹ Fire Station 1 also includes a 100-foot ladder truck staffed with four firefighters, a water tender, a two-person paramedic rescue squad, and a hazardous materials response truck. Other RFD fire stations are located at 1398 Junction Boulevard (Fire Station No. 2), 1300 Cirby Way (Fire Station No. 3), and 1900 Eureka Road (Fire Station No. 4).²⁰ Each of these fire stations maintains a staffing level of three firefighters at all times. Each station is equipped with one fire engine, and Fire Stations 2 and 4 share a type III grassfire engine during the summer months. The RFD has mutual aid agreement with surrounding Placer County and Sacramento County fire departments and districts. The RPD assists the RFD, as needed, in responding and managing hazardous materials incidents. RPD responsibilities in a hazardous materials incident may include traffic control, evacuation, and communications. All RPD sworn officers are trained as first responders to hazardous materials incidents. In addition, an RPD police sergeant has been trained in all aspects of hazardous materials incident investigation, and is a member of the City's hazardous materials response team.

The RFD does not necessarily associate higher population levels with the need for new fire stations. Instead, the RFD uses the location of different population centers in relation to each other and to existing fire stations as the primary criterion when evaluating the need for a new fire station or additional staff. Large infill development can, for example, be adequately served by

an existing, proximate station, while a remote smaller development may require a new facility. To maintain adequate fire protection, the RFD uses four different service standards based on emergency type: (1) provide emergency fire services within four minutes 80 percent of the time; (2) provide basic life support services within four minutes 80 percent of the time; (3) provide advanced life support within four to six minutes 90 percent of the time; and (4) deliver 500 gallons per minute within ten minutes.²¹

The RFD's emergency fire response standards are being met 62 percent of the time and the basic life support response standard is met approximately 83 percent of the time. The advanced life support response standard is being met 97 percent of the time. Fire flow deliveries are being met.²²

The RFD traditionally receives its budget from the City's General Fund. In 1984, to compensate for the City's rapid growth rate, the Fire Service Construction Tax was approved. This tax requires that 0.5 percent of the value of any new construction be collected as part of the building fee and designated for fire suppression and protection. These funds supplement the General Fund and are specifically intended for capital improvements, such as fire stations and fire equipment. None of these funds are allocated to operating expenses, such as salaries or training. The tax will remain in effect until December 2009.

The planned Blue Oaks Station will be a permanent fire station along the south side of Blue Oaks Boulevard, approximately one mile west of the intersection of Blue Oaks Boulevard and Woodcreek Oaks Boulevard. Another station is planned in the NCRSP area, on Roseville Parkway.

All buildings within the project area have sprinklers and smoke detectors. In addition, there is a 100,000 gallon on-site water storage tank and diesel powered pump to respond to emergencies.

SOLID WASTE DISPOSAL

Solid waste generated in the City of Roseville is hauled to the Western Regional Sanitary Landfill (WRSL) located on 320 acres at the southwest corner of Athens Road and Fiddymont Road, approximately ten miles north of the City of Roseville. The landfill is owned and operated by the Western Placer Waste Management Authority, which is comprised of the Cities of Roseville, Rocklin, and Lincoln, and Placer County. The City of Roseville has entered into a joint powers agreement with these other agencies for solid waste management and operates under the County's Solid Waste Management Plan. Collection of solid waste within the area is operated and managed by the City's Environmental Utilities Department.

According to the City's Source Reduction and Recycling Elements (SRRE) the WRSL is a Class III non-hazardous landfill with a remaining capacity of 6,370,000 tons, and a life expectancy of approximately 25 years. Placer County is planning to expand the landfill by 480 acres, which would increase the life of the facility to 35 years. According to the Environmental Utilities Department, the WRSL is adequately accommodating refuse generated by the City. Fees are collected from residential, commercial, and industrial accounts to cover collection costs and disposal methods.

In 1995, the total amount of solid waste generated in the City of Roseville was 70,783 tons, which consisted of 26,876 tons of residential waste, 24,318 tons of commercial waste, 3,976 tons of industrial waste, and 11,452 tons of construction/demolition debris waste. With a population of 45,797, the total waste generation, including that from non-residential sources, equates to 1.54 tons per capita per year.

The SRRE was prepared to implement the state-mandated waste reduction goals specified in Division 30 of the Public Resources Code (Assembly Bill 939). Division 30 requires local agencies to implement source reduction, recycling, and composting activities to reduce solid waste generation by 25 percent by the year 1995, and by 50 percent by the year 2000. To meet these goals, the SRRE specifies three methods: (1) source reduction, which is a net reduction in waste generation at the source; (2) recycling, which is a reuse of materials to produce new similar products, or different products; and (3) composting, which is a process of biological decomposition of solid organic debris, such as leaves, grass clippings, and other organic material commonly found in the municipal wastestream, to create useable material. The City expects to meet the Division 30 reduction goals of 25 percent by 1995, which would extend the remaining landfill life by 25 percent.²³ Division 30 also requires a projection of solid wastes generated within Roseville through 2005, which are shown in Table 4.12-3.

The SRRE addressed plans to construct a Material Recovery Facility (MRF) system to assist in reaching the state-mandated recycling goals. The MRF was constructed at the WRSL, and separates and recovers waste products for recycling or reuse. The MRF is currently accepting waste as part of its 6-month operational testing phase. The MRF is scheduled to be in full operation by mid-1996.

Currently solid waste from the site is removed by D & L Disposal. The waste is disposed at the Western Regional Sanitary Landfill. Hewlett-Packard has an aggressive solid-waste recycling program where approximately 70 percent of total waste, including paper products, plastics, and precious metals, are recycled.

ELECTRICITY

The City of Roseville Electric Department generally provides electrical service to customers within the City limits. The current peak electrical demand for the City is approximately 162 megawatts (MW), with current energy use at approximately 593,856 megawatt/hours. By the year 2010, the City's electrical demand is expected to rise to 269 MW, which will require an additional 132 MW of electricity, including reserves, over the City's current entitlement of approximately 90 MW of electricity, including resources, over the City's current entitlement of 182 MW. The current electrical demand for the Hewlett-Packard facility is 6 to 10 watts per square foot of building space.

The City purchases wholesale electrical power and distributes it through transmission and distribution lines. The City purchases power from both the Western Area Power Administration (WAPA) and from the Northern California Power Agency (NCPA), a joint powers agency. WAPA markets power that is generated by the federal government's Central Valley Project. The

TABLE 4.12-3
CITY OF ROSEVILLE
ESTIMATED SOLID WASTE GENERATION (1990-2005)

Year	Gross Solid Waste Generated (tons)(*)	Anticipated Solid Waste Diversion (tons)	Percent of Solid Waste Diverted	Total Solid Waste Disposed at Landfill (tons)
1990	70,784	5,350	7.6%	65,434
1995	94,381	23,595	25.0%	70,786
2000	117,963	58,981	50.0%	58,981
2005	141,568	70,784	50.0%	70,784

(*) Based on per capita solid waste generation of 1.54 tons per year and general plan population estimates.

SOURCE: Comprehensive Land Use Plan Draft EIR, 1995

City's contract, which is scheduled for renewal in 2004, is for 69 MW. WAPA provides approximately 45 percent of the City's capacity requirements and 53 percent of the City's energy purchases. WAPA is one of the City's lowest-cost resource. However, WAPA is not expected to increase its electrical output. It is anticipated to meet a smaller percentage of the City's total energy needs as electrical demand continues to increase in the City of Roseville.

As a member of the NCPA, the City of Roseville has ownership entitlements to certain electricity generation sources. The City can also purchase electricity from other NCPA members. The City uses approximately 93.2 MW of electricity from NCPA sources, which include:

- 27.6 MW out of 243 MW total from the Calaveras hydroelectric project in Calaveras, Alpine, and Tuolumne Counties;
- an additional 15.0 MW purchased from Palo Alto's Calaveras entitlement (through 2004);
- 3.1 MW out of 94 MW total from Geothermal No. 1, located in the Geysers area of Northern California (the plant capacity will gradually decline as stream field limitations occur);
- 3.9 MW out of 94 MW total from Geothermal No. 2, also located in the Geysers area (plant capacity will gradually decline as stream field limitations occur);
- 9.7 MW out of 50 MW purchased by NCPA from the Washington Water Power Company (purchased under a 20-year agreement which started in 1993);
- 16.1 MW out of 125 MW from five combustion turbines owned by NCPA, of which two are located in Roseville; and
- 18.2 MW out of 60 MW from an electricity exchange agreement with Seattle City Light.

To meet future electrical demands, the City expects to purchase power from other NCPA sources, including:

- 19.7 MW out of 49 MW from a steam-injected combustion turbine being constructed in Lodi and expected to be operational in 1996; and
- pool purchases of available capacity and energy from NCPA.

The City is involved in several projects to increase its entitlement to resources over the next several years. However, the City must pay for surplus power entitlements whether or not they are used. A surplus of entitlements would increase the cost of power, which would be passed along to customers in the form of higher rates. The City continually negotiates contracts for entitlement to additional power sources based on projected demands. Additional power needed in excess of contracted entitlement is acquired through the purchase of short-term power.

Current City policies encourage resource conservation and protection. City projections indicate that conservation and load management programs reduced power demands by approximately 4.4 MW's in 1995. The City provides information, incentives, and educational programs that encourage conservation and reduce the amount of power consumed. Title 24 of the California Code of Regulations also implements conservation efforts by requiring the use of energy-efficient appliances in all new development.

The City of Roseville Electric Master Plan identifies the construction of a 60kV transmission line along Fiddymment Road. Actual location of the lines will be determined by the Roseville Electric Department at the time construction of the lines is necessary. Another 60kV line will be extended along Roseville Parkway and may extend along the north side of the project area to the east. The west extension will connect with the 60kV line along Fiddymment Road. In order to provide back-up service for the Del Webb site in 1995, the City of Roseville Electric Department plans to install a temporary 12kV circuit from Foothills Boulevard along the Blue Oaks Boulevard extension. This back-up circuit will be converted to an underground feeder when Blue Oaks Boulevard is developed. An electrical substation will be located on a 0.60-acre site within the adjacent Del Webb plan area. A major 230/60kV receiving substation is being designed outside of the project area on the southside of Pleasant Grove Boulevard and east of Fiddymment Road.

Near the southern boundary of the project area, there is an existing 60/12kV substation that converts electricity from 60kV to 10-12V which is then transmitted to the site via underground feeders. This substation also services residential areas to the south²⁴.

NATURAL GAS

The Pacific Gas and Electric Company (PG&E), a privately-owned and operated utility company, provides natural gas to the City of Roseville. The peak demand for gas in the City of Roseville is estimated to be approximately 20 million cfd. With a total allocation of gas by PG&E to the

City of approximately 50 million cfd, the City of Roseville has approximately 30 million cfd of natural gas to serve future development in the City. PG&E is currently providing adequate natural gas service throughout the City of Roseville.²⁵

The City's ongoing development review process includes a review and comment opportunity for privately-owned utility companies, including PG&E, to allow for informed input from each utility company on all development proposals. The input facilitates a detailed review of all projects by service purveyors to assess the potential demands for utility services on a project-by-project basis. The ability of PG&E to provide its services concurrently with each project is evaluated during the development review process. Funding for gas service is collected through company billings and developer fees put toward the extension of infrastructure to new development.

The project area is currently serviced by PG&E. In 1994, Hewlett-Packard consumed approximately 306,700 therms of natural gas. This breaks down into approximately 0.25 therms per sf/yr.²⁶

TELEPHONE SERVICES

Telephone service is provided by the Roseville Telephone Company, a privately-owned and operated company. The existing development review process for project proposals includes a review and comment opportunity for privately-owned utility companies Roseville Telephone Company. This review and comment opportunity allows service purveyors to assess potential future demands for utility services and the existing access to potential development sites on a project-by-project basis.

Funding for telephone service is collected through company billings and developer fees applied to the extension of infrastructure to new development.

According to the Roseville Telephone Company, the purchase of materials, labor, and trenching costs associated with infrastructure extensions are paid by the utility company. Trenching costs would most likely be paid by the developer initially but would be reimbursed by Roseville Telephone Company. The utility provides one-inch conduit to each dwelling unit. Interior wiring is the responsibility of the developer or home-owner. Roseville Telephone Company can provide interior wiring service; however, their services would need to be separately contracted and are not included when providing service to new development.

SCHOOLS

The project site is located within the Roseville Joint Union High School District (RJUHS) and the Roseville Elementary School District (RES), and is adjacent to the Dry Creek Joint Elementary School District (DCJES).

The RJUHS encompasses the entire City of Roseville as well as unincorporated areas within the County. Current enrollment in the RJUHS is approximately 4,047 students which exceeds the district's capacity of 3,159 students in five high schools. The RES currently provides both elementary and intermediate school facilities. Current enrollment is approximately 5,300 students,

just below the district's capacity of 5,540 students. The DCJESD encompasses the western portion of the city and includes three schools. Current enrollment is approximately 2,540 students, just below the district's capacity of 2,800 students.

LIBRARIES

The City of Roseville operates two libraries, the Main Library and the Maidu Branch Library. The city's libraries do not meet the service level standard (1 library per 20,000 residents) set forth in the General Plan. Libraries are planned in the NWRSP and the NCRSP.

4.12.3 REGULATORY SETTING

The project area is within the City's water, wastewater and electric service district plans; therefore, it would not need to be added to these service districts.

The City does not require special permits for water distribution, wastewater collection, electrical hook-up, or gas hook-up; however, building permits would be required for these services.

4.12.4 IMPACTS

Method of Analysis

Out of the existing 200 acre site, approximately 165 acres have already been developed for light industrial uses and 3.6 acres will not be developed. It is assumed that the remaining 30 acres will also be developed for light industrial uses. Of the remaining vacant 300 acres, 45.9 acres will be designated Open Space, 22.8 acres will be developed with commercial uses, and 195.5 acres will be designated Light Industrial (30.9 acres are in Right of Way easements and 5.7 acres are designated a detention basin. These won't be developed). This leaves a total of 225.5 developable acres designated Light Industrial and 22.8 acres designated Commercial. The factors identified below are applied to these acreages to determine project demand for each service and utility.

Domestic Water

The following water demand rates have been applied to the land uses proposed for the Proposed Project to estimate the additional water that would be needed to be supplied by the City of Roseville:

- Retail/Commercial: 2,678 gallons per day per acre
- Light Industrial: 2,678 gallons per day per acre

To determine the maximum daily demand, the average daily demand has been multiplied by a peaking factor of 2.0. To determine the peak-hour flow, the maximum daily flow is multiplied by 1.7.

The additional water demand resulting from the development of the project area has been compared to the existing and planned water supply serving the project area to determine impacts.

Wastewater

The following generation rates have been applied to the proposed land uses to estimate the quantity of wastewater that would be added to the City's collection system:

- Retail/Commercial: 1,600 gallons per day per acre
- Light Industrial: 1,600 gallons per day per acre

To determine the peak daily flow in the collection system, the average daily flow is multiplied by a peaking factor of 2.3.

Because of the way in which the wastewater flows through the conveyance system, the wastewater treatment rates are slightly lower than the transmission flows.²⁷ The following generation rates have been applied to the proposed land uses to estimate the quantity of wastewater to be treated at the Roseville Regional Wastewater Plant.

- Retail/Commercial: 1,040 gallons per day per acre
- Light Industrial: 1,040 gallons per day per acre

To determine the peak daily flow to be treated, the average daily flow is multiplied by a peaking factor of 2.5.

The additional wastewater generated is compared to the existing and planned wastewater treatment capacity serving the project site to determine impacts.

Police Services

The demand for police protection services that would be needed to serve the development identified in the Proposed Project is discussed qualitatively. The City of Roseville does not have a specific requirement for the ratio of police protection personnel to population, so the impact analysis is based on the ability of the Roseville Police Department to adequately serve the facility.

Fire Protection Services

The demand for fire protection services that would be needed to serve the development identified in the Proposed Project is discussed qualitatively. The impact analysis is based on the ability of the Roseville Fire Department to provide emergency fire services within four minutes 80 percent

of the time, provide basic life support services within four minutes 80 percent of the time, provide advanced life support within four to six minutes 90 percent of the time, and deliver 500 gallons per minute within ten minutes.

Solid Waste Disposal

The annual solid waste generated by the development identified in the Proposed Project is calculated by applying a standard solid waste generation factor of 1 lb. per 100 square feet per day. This generation factor is assumed to include all sources of solid waste from office and industrial uses. The additional solid waste generated is compared to existing and planned capacity of the landfill to determine impacts.

Electricity

The average electrical demand from the development identified in the Proposed Project is calculated by applying the following electrical demand rates to the proposed land uses. The additional electrical demand is compared to existing and proposed entitlements to electricity.

- Retail/Commercial: 0.0390 MW per year per acre
- Industrial: 0.0490 MW per year per acre

Natural Gas

The average natural gas demand of the development identified in the Proposed Project is calculated by applying the following natural gas demand rates to the proposed land uses. The additional natural gas demand is compared to existing and planned natural gas facilities to determine impacts.

- Retail/Commercial: 63,600 Therms per year per acre
- Industrial: 10,200 Therms per year per acre

Telephone Services

The demand for additional telephone service is anticipated as the development of the project area occurs. For this analysis, because the plan does not define the number of commercial structures that would be developed within the project area, one telephone connection is anticipated per each gross acre of non-residential use, excluding open space. While an estimate of the additional new telephone service is calculated, the impact on the service providers is qualitatively discussed.

Schools and Libraries

Demand for school and library services is based on increases in residential growth due to employees being attracted to the Roseville area due to employment opportunities created by the Proposed Project.

Standard of Significance

Implementation of the Proposed Project will be considered to create a significant impact if any of the following could occur.

- The estimated water demand for the project area would be greater than the anticipated supply, or existing and/or planned treatment, storage or distribution systems would be unable to serve the project.
- The projected quantity of wastewater generated by the project area would exceed the City's collection, treatment and disposal capacities.
- The increased demand for police protection substantially interfered with the ability of the police departments to provide adequate service.
- The increased demand for fire protection services would substantially interfere with the ability of the fire departments to provide adequate service.
- The project area would generate enough solid waste to exceed landfill capacity or substantially shorten the life of the landfill.
- The project area would demand more electricity than the current or planned City entitlements.
- The project area would generate a demand for natural gas that exceeds the existing or planned natural gas transmission facilities.
- The project area would generate a demand for telephone service that exceeds the existing or planned telephone services facilities.
- The Proposed Project would result in substantial increases in other public services, such as schools or libraries, to the point where the provision of such services would be impeded.

IMPACT 4.12-1:**Increased demand for domestic water**

Applicable City

Policies and Regulations:

General Plan Policies FF-1, FF-2, FF-8

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation: None required

Residual Significance: *Less than significant*

The existing City water entitlement is considered sufficient to meet the water demand of the Proposed Project, as well as the full buildout of the Roseville General Plan. The existing rate at which the City can supply water is 42 mgd, and the current peak water demand is approximately 30 mgd. At full buildout, the level of development identified in the Proposed Project would require an estimated average daily water demand of .66 mgd, a maximum daily demand of 1.32 mgd, and a peak-hour demand of 2.25 mgd (see Table 4.12-4).

TABLE 4.12-4					
HEWLETT-PACKARD MASTER PLAN WATER DEMAND					
Land Use Category	Number of units/acres	Water Demand Factor (average gpd) ¹	Estimated Water Demand (average mgd) ²	Maximum Daily Water Demand ³ (mgd)	Peak Hour Water Demand ⁴ (mgd)
Retail/Commercial	22.8 acres	2,678 gpd per acre	0.06 mgd	0.12 mgd	0.21 mgd
Light Industrial	225.5 acres	2,678 gpd per acre	0.60 mgd	1.20 mgd	2.04 mgd
TOTAL GENERATION			.66 mgd	1.32 mgd	2.25⁵ mgd
¹ Gallons per day ² Million gallons per day ³ 2.0 times the average daily flow ⁴ 1.7 times the maximum daily flow ⁵ Discrepancy due to rounding error					
SOURCE: City of Roseville Comprehensive Land Use Plan, 1995; EIP Associates, 1995.					

The Proposed Project could be accommodated within the existing water supply. As new residential and commercial development continues to occur in the City of Roseville, water demand will increase in the City. By 2010, the City-wide peak hourly demand could be accommodated through the use of planned storage facilities; however, the maximum day demand could not be continually met over a series of hot summer days.

The Roseville General Plan contains the following water supply policies:

- FF-1 Secure sufficient sources of water to meet the needs of the existing community and planned growth.
- FF-2 Provide sufficient water treatment capacity and infrastructure to meet projected water demand.
- FF-8 Develop and pursue alternatives to continue delivery of PCWA water to Roseville.

These General Plan Policies will secure sufficient sources of water to meet planned growth and provide adequate treatment capacity and infrastructure. With the implementation of these measures, the impact of the Proposed Project would be considered less than significant.

IMPACT 4.12-2:	Decreased water supply during drought periods
Applicable City Policies and Regulations:	General Plan Policies FF-1, FF-2, FF-8, FI-1, FI-3, FI-5, FI-6, and FI-7
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

The City is continuing its efforts to secure more potable water, as discussed in Section 4.12.2. In addition, the City is implementing reuse of treated wastewater for irrigation, which would allow more potable water to be used for residential and commercial purposes. The City is also promoting the widespread implementation of water conservation techniques through public education programs and the implementation of Title 24 of the California Code of Regulations. The City's Conservation and Drought Mitigation Plan identifies a range of drought conditions and corresponding actions that would be implemented to reduce water use within the City during drought. In addition, the General Plan has the following policies to address water supply and drought conditions:

- FI-1 Develop and implement water conservation measures.
- FI-3 Explore potential uses of treated wastewater.
- FI-5 Develop and adopt a landscape ordinance that provides standards for the use of drought tolerant, xeriscape and water conserving landscape practices for both public and private projects.

- FI-6 Develop and implement public education programs designed to increase public participation in energy and water conservation.
- FI-7 Require large water and electricity users to submit a use and conservation plan concurrent with development review specifying measures to be taken to minimize demand.

These policies, along with the implementation of the Roseville Conservation and Drought Mitigation Plan, would reduce the impact of the Proposed Project on water supply during drought conditions to a less-than-significant level.

IMPACT 4.12-3:
Increased demand for domestic water treatment

Applicable City

Policies and Regulations:

General Plan Policies FF-2, FF-3

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The City of Roseville Water Treatment Plant has recently been expanded and can supply 48 mgd of potable water. The City's current peak daily water demand is 30 mgd. At the time the project area reaches full buildout, the peak daily demand in the City of Roseville is estimated to be 67.4 mgd. The addition of the 1.32 mgd maximum daily water demand from the Proposed Project would increase the City's peak daily demand to 69 mgd. Although slight, it appears that the future project demand would affect the existing treatment plant's capacity to meet the estimated daily water demand.

The City's water treatment capacity could be expanded to meet the required demand, as discussed below. The alternatives for expanding the City's water treatment capacity depend on the City water supply selected. If the Folsom Lake or Below Folsom Lake Supply Alternative is selected, then the additional treatment capacity required would need to be provided by expanding the existing Roseville Wastewater Treatment Plan (WTP). The WTP could be expanded to 96 mgd, which would be enough to meet the Proposed Project's peak day water demand. This would depend on the potential for land acquisition and the placement of additional storage reservoir(s) at the WTP site (Spink, 1993). Raw water conveyance facilities from Folsom Lake would need to be expanded in order to provide an adequate water supply to the WTP.

If the PCWA Supply Alternative is selected, then additional treatment capacity could be provided by PCWA facilities. In order to provide PCWA water to the City, either the existing Foothill WTP would need to be expanded or a new West Placer Water Treatment Plant could be constructed (Spink, 1993). Expanding the Foothill WTP would require the installation of a major

water pipeline to the plant and significant expansion over the plant's existing capacity. Because of site constraints, it is unlikely that both Roseville's and PCWA's future water supply needs could be met by expanding the Foothill WTP (Spink, 1993). Therefore, a new West Placer WTP may be required either in addition to expanding the Foothill WTP or in place of it. The new WTP is part of PCWA's Capital Improvement Plan.

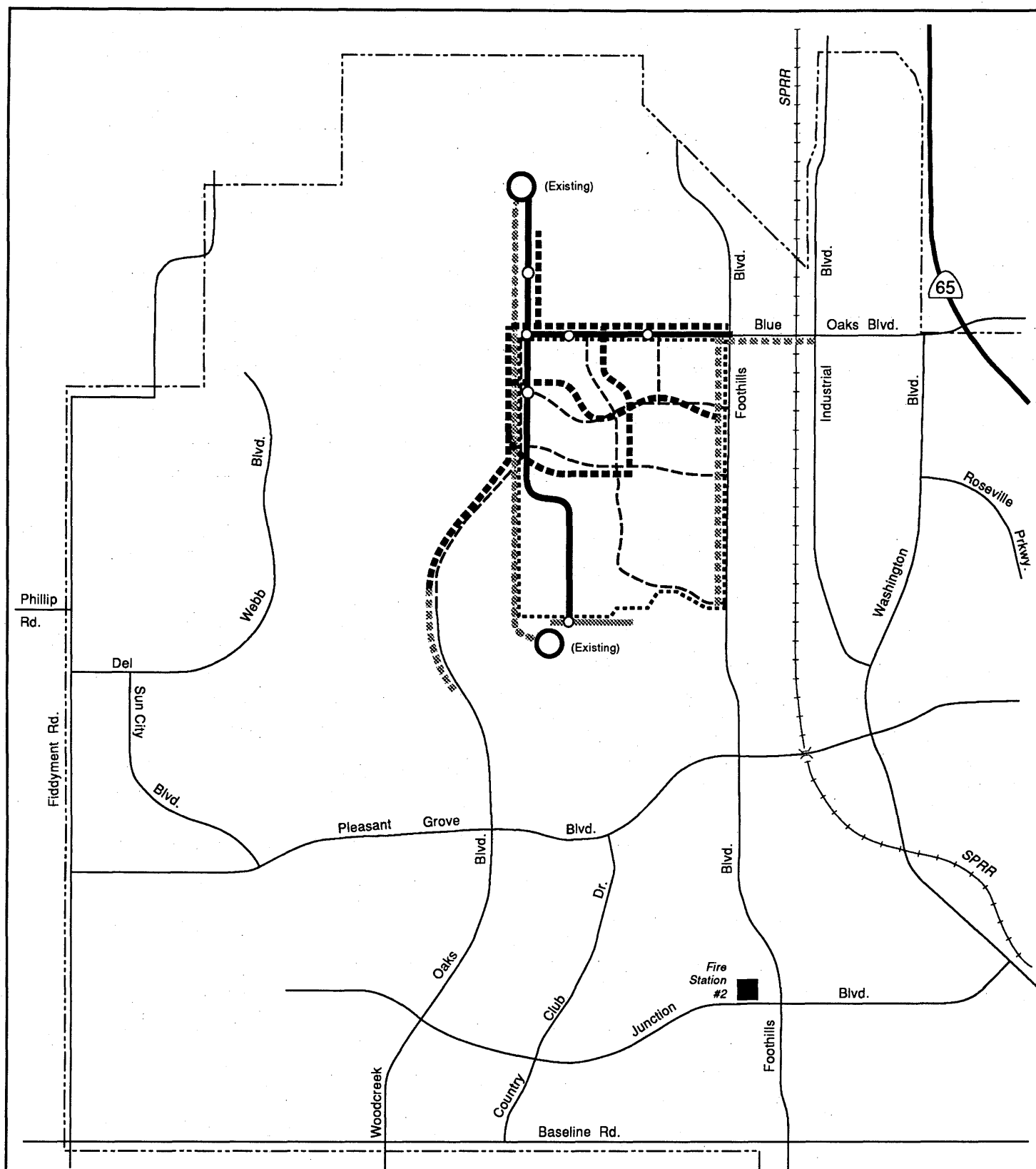
Treatment capacity is addressed by policies FF-2 and FF-3. These policies are aimed at monitoring treatment capacity in relation to future growth to ensure that adequate capacity will be available prior to increased demand. Prior planning will allow time for necessary improvements to be made to the treatment system, so that reserve treatment capacity is always available.

These policies adequately address potential water treatment impacts; therefore, the impacts would be less than significant.

IMPACT 4.12-4:		Increased demand on water distribution system
Applicable City		
Policies and Regulations:		None
Action Proposed by Applicant:		None
Significance:		<i>Less than significant</i>
Additional Mitigation:		None required
Residual Significance:		<i>Less than significant</i>

Although the final design process would determine the sizes of all water mains and pipes in the project area, a preliminary design of the water distribution improvements necessary to serve the project has been prepared. The location of the project site makes it feasible to connect directly into the existing water infrastructure system along Foothills Boulevard to the east. A new 24-inch water main is proposed along the future extension of Blue Oaks Boulevard which would also service new development on the site.

The conceptual water distribution system for the project area, indicating the location of the water lines and the points of connection with the existing system, is shown in Figure 4.12-1. The area in the northwest quadrant of the project area would connect into the existing 24-inch water main in Foothills Boulevard via a 12-inch line. A 16-inch line would connect the proposed 24-inch water main along Blue Oaks Boulevard to the area in the southwest quadrant of the project area. These connections would form a complete loop around the project area.



SOURCE: Wade Associates, North Roseville
 Specific Plan Draft, November 10, 1994;
 EIP Associates, January 1996.

- - - - - Hewlett-Packard Master Plan Area
 - . - . - Roseville City Limits
 - - - Existing and Approved Roads

- - - - - Proposed Sewer Line
 - - - - - Existing Sewer Line
 - - - - - Proposed Water Line
 - - - - - Existing Water Main
 - - - - - Existing Force Main
 ○ Existing Pump Stations

Figure 4.12-1

**Proposed Wastewater
And Water Improvements
And Existing Pump Stations**

0 1/4 1/2
 Scale In Miles

N
 95190
 Base

eip

The City of Roseville has also identified several improvements to its water transmission and distribution system that will be required to deliver water to the future development in the City. With completion of these improvements and the placement of the water mains on the project area as identified above, the Proposed Project is considered to have a less-than-significant impact on the existing water distribution system.

IMPACT 4.12-5:	Increased demand on wastewater collection system
Applicable City Policies and Regulations:	General Plan Policies FG-1, FG-6, FG-9
Action Proposed by Applicant:	None
Significance:	<i>Less than significant</i>
Additional Mitigation:	None required
Residual Significance:	<i>Less than significant</i>

As shown in Table 4.12-5, buildout of the project area would increase average wastewater flows in the collection system by approximately .40 mgd and peak wastewater flows by 0.92 mgd. The project area includes sewer system improvements that would allow the wastewater to be pumped to the existing plant or gravity flow to the west if a regional sewer treatment plant on Pleasant Grove Creek is constructed. All sewer improvements would comply with the Regional Wastewater Master Plan. The proposed sewer and water improvements for the project area are shown in Figure 4.12-1.

The General Plan contains the following policies to ensure that the wastewater collection system is adequate to serve the City:

- FG-1 Ensure that wastewater treatment capacity is available and that wastewater generation is minimized.
- FG-8 Develop, plan, and provide incentives for use of treated wastewater by the public and private sectors.
- FG-9 Prevent hazardous materials from entering the wastewater system.

The final wastewater conveyance system for the Proposed Project will be designed during the final design process. Therefore, the appropriate system size has not been determined. However, with strict adherence to the City of Roseville General Plan Policies, the wastewater improvements will be designed to adequately carry wastewater from the project area. Therefore, the impact on the wastewater conveyance system would be less than significant.

TABLE 4.12-5

**HEWLETT-PACKARD MASTER PLAN
WASTEWATER GENERATION IN CONVEYANCE SYSTEM**

Land Use Category	Number of Units/Acres	Wastewater Generation Factor (average gpd)	Estimated Wastewater Generation (average mgd)	Maximum Daily Wastewater Flow (mgd)¹
Retail/Commercial	22.8 acres	1,600 gpd per acre	.04	.09
Light Industrial	225.5 acres	1,600 gpd per acre	.36	.83
TOTAL GENERATION			.40 mgd	.92 mgd
¹ 2.3 times the average daily flow				
SOURCE: City of Roseville Comprehensive Land Use Plan, 1995; EIP Associates, 1995.				

IMPACT 4.12-6:

Increased demand on wastewater treatment system

Applicable City

Policies and Regulations:

General Plan Policies FG-1, FG-8, FG-9, LH-7

Action Proposed by Applicant:

None

Significance:

Significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The City of Roseville is participating in the development of a Regional Wastewater Treatment Master Plan. The regional plan will evaluate several options for meeting the wastewater treatment demand of the City as well as other incorporated and unincorporated areas through 2010. Options under consideration include expanding the existing Dry Creek treatment plant to meet 2010 demand, construction of a second plant in the Pleasant Grove Creek sewershed, and various combinations of plant capacities.

The current discharge limitation to Dry Creek is 18 mgd. The plant averages approximately 13.4 mgd, but during peak flows, the plant discharges nearly 18 mgd. As shown in Table 4.12-6, development of the project area will add approximately 0.25 mgd to the existing average daily flow into the treatment plant. When added to the current average flows, this increase is not expected to exceed the allowed discharge level. The Proposed Project's peak wet-weather flow, however, is expected to be approximately 0.63 mgd, which is anticipated to exceed the allowable discharge level.

TABLE 4.12-6

**HEWLETT-PACKARD MASTER PLAN
WASTEWATER GENERATION**

Land Use Category	Number of Units/Acres	Wastewater Generation Factor (average gpd)	Estimated Wastewater Generation (average mgd)	Maximum Daily Wastewater Flow ¹ (mgd)
Retail/Commercial	22.8 acres	1,040 gpd per acre	.02	.05
Light Industrial	225.5 acres	1,040 gpd per acre	.23	.58
TOTAL GENERATION			.25 mgd	.63 mgd
¹ 2.5 times the average daily flow				
SOURCE: City of Roseville Comprehensive Land Use Plan, 1995; EIP Associates, 1995.				

Because the Regional Wastewater Treatment Master Plan is being developed, and the timing and nature of the improvements have not been determined, the significant impact on the wastewater treatment capacity would be mitigated by implementing the General Plan Policy that requires it be demonstrated that wastewater treatment capacity is available prior to approval of the urban density residential, commercial, or industrial development in unincorporated areas. With this General Plan Policy, the impact of the Proposed Project on wastewater treatment capacity is considered less than significant.

IMPACT 4.12-7:**Increased demand for police protection services**

Applicable City

Policies and Regulations:

Building Security Ordinance

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The RPD has indicated that development of the project area does not appear to require changes to the existing level of police service already provided within Beat 6; providing police officers and related support services staff are added periodically to keep pace with population growth and increases in service demand. According to the RPD the current level of police service is adequate to service the project area. Although, due to increased traffic volume, including the degradation

of the LOS at major intersections, there may be an increase in the number of traffic accidents which may slow emergency response times. Hewlett-Packard will provide on-site security, and all entries will be designed to accommodate a security gate. All plans will be subject to review by the Police Department's Crime Prevention Staff. Therefore, the increased demand for police protection services is considered less than significant.

IMPACT 4.12-8:**Potential failure to meet RFD standards**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The RFD has indicated that the project area would be served by Station 2 and the planned interim station. According to the RFD all the buildings currently on the site have sprinkler systems; therefore, the existing level of fire protection is adequate and they do not anticipate this changing with the advent of future development. Prior to final approval of the Proposed Project, the RFD will review the circulation plan for conformance with existing emergency access standards. For these reasons, the project would be considered consistent with RFD standards and this impact is considered less than significant.

IMPACT 4.12-9:**Increased demand for solid waste hauling**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Assuming the current demand for solid waste removal is based on the generation factor of 11lb. per 100 square feet/day, then the current facility produces, on average, 13,000 lbs./day or approximately 2,370 tons per year of solid waste. The existing facility currently recycles

approximately 70 percent of all its solid waste; therefore, approximately 700 tons/yr are deposited in the landfill. Development of the Proposed Project would add an additional 1,600 tons per year of solid waste, based on total project buildout with a 70 percent recycle rate.

Presently, Hewlett-Packard contracts with a private hauling company to remove its solid waste and will continue to do so. Therefore, this impact is considered less than significant.

IMPACT 4.12-10:**Increased demand for solid waste disposal**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The projected annual increase from 600 to 1,600 tons of solid waste produced annually in the project area within the next 20 to 25 years is not anticipated to substantially impact or reduce the lifespan of the landfill. The remaining capacity of the WRSL is approximately 6,370,000 tons with a life expectancy of 25 years. In addition, the WRSL has a planned expansion that will extend the life of the landfill to 35 years. Therefore, this is considered a less-than-significant impact.

IMPACT 4.12-11:**Increased demand for electrical supply**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The full build-out of the Proposed Project would increase demand for electrical services. The increased demand for electric services is estimated to be about 11.89 MW per year within the project area (see Table 4.12-7).

TABLE 4.12-7

**HEWLETT-PACKARD MASTER PLAN
ANNUAL ELECTRICAL DEMAND**

Land Use Category	Number of Units/Acres	Electrical Demand Factor	Estimated Electrical Demand (MW)
Retail/Commercial	22.8 acres	0.0390 MW per acre	.89
Light Industrial	225.5 acres	0.0490 MW per acre	11.00
TOTAL DEMAND			11.89
SOURCE: City of Roseville Comprehensive Land Use Plan, 1995; EIP Associates, 1995.			

The City of Roseville has estimated that it will have to secure entitlements of approximately 132 MWs of additional power by 2010. The additional power required to serve the Proposed Project is estimated to be about 12 MWs. The City of Roseville will pursue the most cost effective options to supply power to the Proposed Project. It is not expected that there would be any problems securing additional power supplies. The 20.1 MW of power required to serve final build-out of the project area is not expected to increase the future power needs previously identified by the City. Therefore, the impact is considered less than significant.

IMPACT 4.12-12:**Increased demand for natural gas**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The development of the Proposed Project would increase the demand for natural gas. As shown in Table 4.12-8, the increased demand for natural gas is estimated to average approximately 3.8 million Therms per year.

TABLE 4.12-8 HEWLETT-PACKARD MASTER PLAN ANNUAL NATURAL GAS DEMAND			
Land Use Category	Number of Units/Acres	Natural Gas Demand Factor	Estimated Natural Gas Demand (Therms)
Retail/Commercial	22.8 acres	63,600 Therms per acre	1,450,080
Light Industrial	225.5 acres	10,200 Therms per acre	2,300,000
TOTAL DEMAND			3,750,080
SOURCE: City of Roseville Comprehensive Land Use Plan, 1995; EIP Associates, 1995.			

PG&E has indicated that there are about 30 million cubic feet per day (cfm) of natural gas that are allocated to the City of Roseville but are not used. With one therm equal to about 100 cubic feet of gas, this represents 300,000 Therms per day or 109.5 million Therms per year.²⁸ The increased project demand of approximately 3.75 million Therms per year would be met by this natural gas supply. Therefore, the impact is considered less than significant.

IMPACT 4.12-13:**Increased demand for telephone services**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

Future development in the project area would create an additional demand for telephone services. Assuming that each acre of all non-residential land, excluding parks and open space, would require one cable television and telephone connection, the project area would require another 291 non-residential connections.

As stated above, these additional services would be provided by private utility companies and would be funded through developer fees and future customer billing. In addition, the utility companies will be given the opportunity to review and comment on any proposed development requiring new service. Therefore, the impact is considered less than significant.

IMPACT 4.12-14:**Increased demand for school services**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The Proposed Project is anticipated to increase the total number of employees in the project area by over 9,000 in the next 20 to 25 years. As discussed in Section 4.2, a substantial portion of these employees could choose to locate in the vicinity of the project site. To the extent that increased employment increases the number of residents in the Roseville area, additional demand for school services would be created. School districts can collect impact mitigation fees from both residential and non-residential development. Current sterling fees are \$0.28 per sq. ft for non-residential development. The fee is split, with \$0.165 going to elementary schools and \$0.115 to high schools. With the collection of mitigation impact fees, the indirect impact on schools will be less than significant. The Proposed Project would be subject to impact mitigation fees prior to the issuance of building permits.

IMPACT 4.12-15:**Increased demand for library services**

Applicable City

Policies and Regulations:

None

Action Proposed by Applicant:

None

Significance:

Less than significant

Additional Mitigation:

None required

Residual Significance:

Less than significant

The Proposed Project would add residents and employees to the community, increasing the demand for library facilities. The city's libraries do not meet the service level standard set in the General Plan; however, the Proposed Project would contribute to City revenues that could be directed toward meeting increased library needs. Therefore, the impact on existing libraries would be less than significant.

4.12.5 MITIGATION MEASURES

None required.

ENDNOTES

1. Giamnonatti, Greg, Associate Engineer, City of Roseville Environmental Utilities Department personal communication, February 1996.
2. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-1, February, 1995. Cites the Spink Corporation, 1992.
3. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-1, February, 1995. Cites ESA, 1994.
4. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-1, February, 1995. Cites Bureau of Reclamation, 1994.
5. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-1, February, 1995. Cites the Spink Corporation, 1992.
6. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-3, February, 1995. Cites Buckle, 1994.
7. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-3, February, 1995. Cites the Spink Corporation, 1992.
8. City of Roseville, *Comprehensive Land Use Element Draft EIR*, p. 4.12-3, February 1995.
9. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.12-3, February, 1995. Cites Buckle, 1993.
10. Giamnonatti, Greg, Associate Engineer, City of Roseville Environmental Utilities Department personal communication, February 1996.
11. Nelson, Mark, Government Affairs Officer, Hewlett-Packard, to Christine Kronenberg EIP Associates, Existing Water Demand at Hewlett-Packard, December 4, 1995.
12. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.13-1, February, 1995. Cites the Spink Corporation, 1992.
13. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.13-1, February, 1995. Cites the City of Roseville Municipal Code Section 14.16.070.
14. City of Roseville, *Comprehensive Land Use Element Update Project*, Draft EIR, page 4.13-1, February, 1995. Cites the Spink Corporation, 1992.
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5.0 OTHER PROJECT-RELATED COMPONENTS
