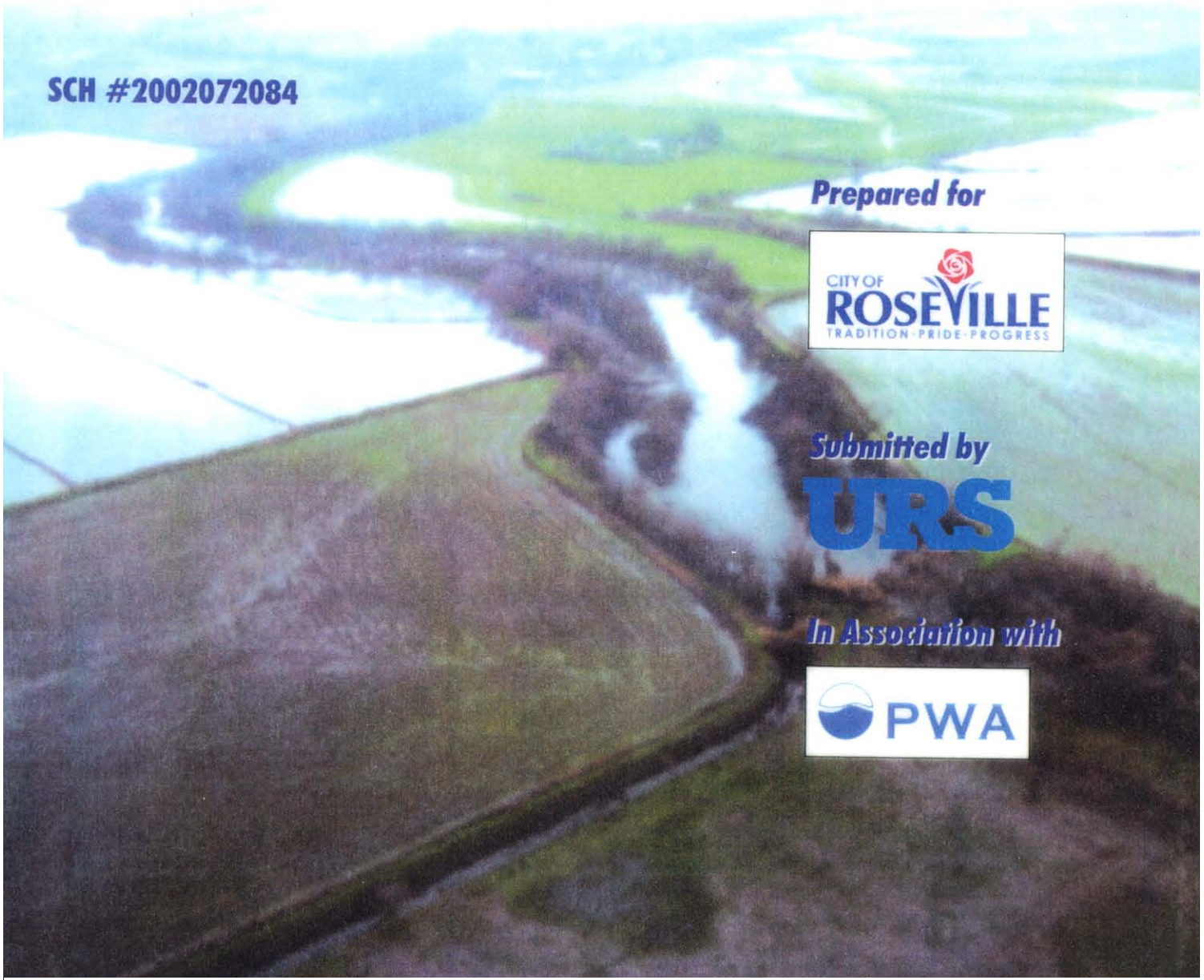
Draft
Environmental Impact Report
for the
City of Roseville Retention Basin Project

Roseville, California

October 16, 2002

SCH #2002072084



Prepared for

CITY OF ROSEVILLE
TRADITION · PRIDE · PROGRESS

Submitted by

URS

In Association with

PWA

CITY OF ROSEVILLE RETENTION BASIN PROJECT

DRAFT
ENVIRONMENTAL IMPACT REPORT

Prepared for the City of Roseville

By URS Corporation
In Association with PWA

October 16, 2002

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ACRONYMS

APC	Air Pollution Control District
AQAP	Air Quality Attainment Plan
AQMD	Air Quality Management District
BMPs	Best Management Practices
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	carbon monoxide
db	decibels
dBA	A-weighted sound level
dbh	diameter at breast height
DSOD	Department of Safety of Dams
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FMMP	Farmland Mapping and Monitoring
GPS	global positioning system
Hz	hertz
L_{eq}	equivalent sound level
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Planning Agreement
NCIC	North Central Information Center
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPS	National Park Service
O_3	ozone
Pb	lead
PCAPCD	Placer County Air Pollution Control District
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
RDA	Regional District Analysis
ROG	reactive organic gases
SACOG	Sacramento Area Council of Governments
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SVAB	Sacramento Valley Air Basin
SWRCB	State Water Resources Control Board
TSP	total suspended solids
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VEE	Visible Emissions Evaluations
WRSP	West Roseville Specific Plan

1.0 INTRODUCTION

The California Environmental Quality Act of 1970 (CEQA) (*Public Resources Code Section 21000* et seq.) is one of California's most important environmental laws. It requires state and local agencies to disclose and consider the environmental implications of their actions. It further requires agencies to avoid environmental impacts when such avoidance is feasible. In furtherance of these goals, six objectives are identified:

- disclose to decision makers and the public the significant environmental effects of proposed activities;
- identify ways to avoid or reduce environmental damage;
- prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures;
- disclose to the public reasons for agency approvals of projects with significant environmental effects;
- foster interagency coordination; and
- enhance public participation.

The CEQA procedures are guided by the legislative intent to have public participation to the greatest extent possible. The legislature also intended that decision makers be able to make informed decisions based on substantial information regarding a "project" and that these decisions be based on a trail of reasoning accessible to the public.

The Environmental Impact Report (EIR) and its preparation is the method by which information is gathered and organized, impacts assessed, and mitigation measures developed. The EIR is prepared by a lead agency, circulated for public review and comment, and a final document with responses to public comments is prepared for consideration by advisory and legislative bodies (planning commission or city council).

In addition to and guided by the legislative intent, the State Resources Agency has adopted regulations, known as the State CEQA Guidelines (*Guidelines Section 15000* et seq.), to guide agencies in implementing the law. The Guidelines provide detailed procedures that agencies must follow to implement CEQA, including the procedures for the preparation of a CEQA document (an EIR for those projects that may have significant impacts requiring mitigation measures or a Negative Declaration for projects with no significant impacts).

CEQA is more than merely a "procedural" statute. Substantive provisions of CEQA include provisions requiring agencies to avoid or mitigate significant impacts disclosed in an EIR when feasible.

1.1 TYPE AND PURPOSE OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

This document is the Draft Environmental Impact Report (Draft EIR) for the City of Roseville Retention Basin Project ("proposed project"), a retention basin to help reduce potential downstream flooding that could be caused by the entitled projects and future projects within the City and in certain portions of south Placer County. The project area is located in southwestern Placer County approximately 2.4 miles west of the city limits of Roseville. A description of the project and its probable environmental effects was presented in the Initial Study and Notice of Preparation (NOP) dated July 22, 2002 and the Final Conceptual Design dated May 24, 2002. These documents are herein incorporated by reference and are available for review at the City of Roseville, Department of Public Works. The Initial Study and NOP are included in this Draft EIR as Appendix A.

This Draft EIR has been prepared for the City of Roseville, Department of Public Works acting in the capacity of Lead Agency pursuant to CEQA, and the State CEQA Guidelines. This Draft EIR is a "focused" Draft EIR. It analyzes those impacts determined by the Initial Study to be potentially significant and for which no mitigation was identified to reduce impacts to a less than significant level. It also analyses impacts to biological resources, as described below.

1.2 SCOPE OF THE DRAFT EIR

As required by CEQA, the Draft EIR focuses on significant environmental effects that have not been determined to be less than significant (with or without mitigation) in an Initial Study (*Guidelines Section 15143*). The Initial Study prepared for the proposed project determined that Agricultural Resources, Construction Air Quality, Construction Noise, and Growth (including Population Growth) may have impacts that would be potentially significant and unavoidable, and that these resource areas should be carried forward to the EIR for analysis. Biological Resources is also presented in the focused Draft EIR in support of the future U.S. Army Corps of Engineers 404(1)(b) alternatives analysis required for future permitting of the project.

The Initial Study and NOP were released for public comment on July 22, 2002 and distributed to key government agencies and interested parties. The purpose of the comment period was to obtain comments on the scope of the Draft EIR. The 30-day comment period ended on August 21, 2002. In addition, a Scoping Meeting was held on August 8, 2002. A summary of the comments received at the Scoping Meeting and written comments received on the NOP and Initial Study are presented in Appendix B. Some comments focused on the hydrologic analysis used as the basis for design, and were addressed by the City in correspondence with the respective commentors. Comments from California Department of Fish and Game are addressed in Chapter 6 of this Draft EIR. Comments on the proposed project and the scope of the Draft EIR resulted in minor changes to the project description and/or are included in the analysis of resource areas in the Draft EIR. All comment letters received were responded to in writing by the City of Roseville. Copies of the responses from the City of Roseville are also included in Appendix B.

The primary change to the project description is the addition of upgrading and widening of the north access road from the project site to Sunset Boulevard West. One new alternative was added as a result of comments received during the scoping period: Alternative 6 – Drainage Conveyance Alternative.

The Draft EIR characterizes the existing environmental resources for the environmental issues analyzed in this Draft EIR, analyzes potential impacts to those resources (as a result of implementation of the proposed project), and identifies mitigation measures to reduce impacts. Growth inducing impacts, including population growth, are analyzed in Chapter 8, Other CEQA Sections. This chapter also includes analysis of cumulative impacts and alternatives to the proposed project. Six alternatives, one of which includes two sub-alternatives, are analyzed in this Draft EIR. These alternatives include the following: Alternative 1 – No Project Alternative; Alternative 2 – Curry Creek Alternative; Alternative 3 – Embankment Setback Alternative; Alternative 4A – Reduced Excavation Alternative; Alternative 4B – South Basin Only Alternative; Alternative 5 – Levee Removal Alternative; and Alternative 6 – Drainage Conveyance Alternative.

1.3 SIGNIFICANCE CRITERIA

In general, CEQA *Guidelines* define a significant effect on the environment as "a substantial, or potentially substantial" adverse change in the physical environment. A potential impact is considered significant if a project would substantially degrade the environmental quality of land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance (CEQA *Guidelines*, 1998). Definitions of significance vary with the physical condition 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*, 1998).

The analysis of the proposed project according to CEQA assumes four levels of impact significance: (1) no impact; (2) less than significant impact and no mitigation measures warranted; (3) significant impact that can be mitigated to a level that is less than significant; and (4) significant impact that cannot be mitigated to a level that is less than significant. Only those impacts that were identified as significant within the Initial Study and cannot be mitigated to less than significant levels are presented in this Draft EIR for further analysis, except that Biological Resources is also presented in the Draft EIR in support of the future 404(1)(b) alternatives analysis required for future permitting of the project.

The significance criteria are identified at the beginning of the impacts discussion for each resource area. These significance levels promote consistent evaluation of impacts for all alternatives considered, even though significance criteria are necessarily different for each resource considered.

1.4 CEQA PROCESS

An Initial Study was prepared in accordance with the CEQA Guidelines (*Guidelines Section 15000* et seq.) and distributed for public comment in conjunction with an NOP describing the scope of the Draft

EIR on July 22, 2002. The 30-day comment period on the NOP and Initial Study closed on August 21, 2002. A Scoping Meeting was also held on August 8, 2002.

The Draft EIR considers comments received during the NOP comment period and scoping meeting. This Draft EIR was released for public review on October 19, 2002. The distribution list for this Draft EIR is contained in Chapter 10.0. This Draft EIR is available for public review at the following locations:

- City of Roseville, Department of Public Works, 311 Vernon Street, Roseville, California
- Roseville Main Library, 225 Taylor Street, Roseville, California
- Maidu Branch Library, 1530 Maidu Drive, Roseville, California

Members of the public and responsible agencies have an opportunity to comment on the proposed project or its environmental assessment during the public comment period. Comments should be directed to Mark Morse, Environmental Coordinator, Community Development Department at the address below before December 2, 2002:

City of Roseville
Department of Public Works
311 Vernon Street
Roseville, CA 95678

A Public Hearing will also be held during the public comment period to provide an additional opportunity for members of the public or responsible agencies to provide comment. The Public Hearing is scheduled for November 14, 2002 before the Planning Commission in the Roseville City Council Chamber at 311 Vernon Street in Roseville.

Comments received during the Draft EIR comment period and at the Public Hearing will be addressed in the Final EIR. The Final EIR will be reviewed by the City of Roseville City Council for certification in accordance with CEQA and the City's CEQA Guidelines Implementing Procedures. Written findings of fact for each significant environmental impact identified in the EIR will be prepared to:

- Determine that the proposed project has been designed to avoid or substantially reduce the magnitude of the resultant impact;
- Find that changes to the proposed project are within another agency's jurisdiction, and such changes have been or should be adopted; and
- Find that specific economic, social, or other considerations make mitigation measures or proposed project alternatives infeasible.

Such findings must be based on substantial evidence in the administrative record and must include an explanation that bridges the gap between evidence in the record and the conclusions required by CEQA.

If the decision-making body elects to proceed with a project identified with significant impacts, then a Statement of Overriding Considerations explaining the decision to balance the benefits of the project against unavoidable environmental impacts will be prepared as part of the project approval process.

1.5 INCORPORATION BY REFERENCE

The Final Conceptual Design Report presents the conceptual design of the proposed project, and provides supporting data including hydrologic analysis, hydraulic modeling and sediment transport analysis. The Final Conceptual Design Report is incorporated into this Draft EIR by reference, and is available for review at the City of Roseville's Department of Public Works located at 311 Vernon Street, Roseville, CA 95678.

2.0 EXECUTIVE SUMMARY

2.1 OVERVIEW OF THE PROPOSED PROJECT

The City of Roseville proposes to construct a retention basin to help reduce potential downstream flooding that could be caused by the entitled projects and future projects within the City and in certain portions of south Placer County. The development of a retention basin will help reduce the risk of flood hazards to downstream communities.

In March 1991, the Roseville City Council adopted the Pleasant Grove Drainage Fee. The fee was based on the Pleasant Grove Watershed Mitigation Fee study (Civil Solutions, 2000a) and a hypothetical 8-day, 100-year flood event. The fee provides funds to construct a stormwater retention basin to store additional runoff created by land development within the Pleasant Grove watershed in Roseville. The retention basin would comply with CEQA mitigation requirements related to stormwater retention for various City and regional projects, and it would address Sutter County's concerns regarding flooding partially caused by development within the Pleasant Grove Watershed. The City has collected about $10 million in fees through the first half of 2002, and is now moving forward with using these fees to study construction of a retention basin (the proposed project) and associated land purchases.

The proposed project would be a stormwater retention facility, located in southwestern Placer County approximately 2.4 miles west of the city limits of Roseville. The proposed project has been designed to provide retention storage of 2,530 acre-feet to help reduce potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville and in certain portions of south Placer County, while retaining and enhancing open space characteristics.

The development of the retention basin could also provide future opportunities for other uses such as enhancement of riparian, wetland and upland habitats and passive recreation (pedestrian and bicycle trails, etc.) that could be constructed by the City or others. The City could retain ownership or ultimately convey ownership to a conservancy agency or another third party.

The project would be comprised of two basins, one located north of Pleasant Grove Creek and the second located south of the creek. Each basin would have certain typical features such as embankments, low-flow channels, and outlet structures. An access road would be constructed to provide access to the site for construction and maintenance activities. The features of the North and South basins, access road, construction activities and workforce, maintenance and opportunities for future use of the project area are described below.

2.1.1 North Basin

The North Basin would be located north of Pleasant Grove Creek. It would have a surface area of approximately 171 acres and would have a maximum storage capacity of approximately 680 acre-feet. It

would be offset approximately 100 feet from the ordinary high water level of the creek or 70 feet from the top of the bank, whichever provides the greatest offset from the top of the bank.

The basin would receive water from the Northern Tributary Two, a tributary to Pleasant Grove Creek that originates to the east of the project site. Water entering the basin from Northern Tributary Two would be conveyed through the basin to the basin outlet structure by a low-flow channel. The low-flow channel would be constructed by excavation and would follow the approximate former location of Northern Tributary Two prior to its realignment for rice farming.

To contain water within the basin, an earthen embankment approximately 11,900 feet in length and averaging ten feet in height depending on existing ground contours would be constructed by placing and compacting soil materials generated during excavation of the low-flow channel.

The outlet structure would be constructed of reinforced concrete that would be designed to regulate the storage of water in the basin. The structure would include a wall and would measure approximately 100 feet by 13 feet from wing wall to wing wall. Four sluice gates, each measuring 6 feet by 6 feet, would be mounted on the wall. The sluice gates would be automatically operated and would normally be in the open position.

Flows in excess of the storage capacity of the basin would flow over the outlet structure wall, which would act as a weir and as the principal spillway of the basin. The top of the weir would be at elevation 75 feet above mean sea level. The basin would have an emergency spillway to convey excess water from very large storms (1,000-year, 24-hour storm). The crest of the emergency spillway would be at elevation 77.2 feet. The emergency spillway crest length would be approximately 250 feet.

2.1.2 South Basin

The South Basin would be located south of Pleasant Grove Creek. It would have a surface area of approximately 348 acres and have a maximum storage capacity of approximately 1,850 acre-feet. It would be offset about 100 feet from the ordinary high water level of the creek or 70 feet from the top of bank, whichever provides the greatest offset from the top of the bank.

To fill the basin, water would be diverted from Pleasant Grove Creek into a bypass channel excavated into the existing south bank floodplain. The bottom of the bypass channel would have a low-flow channel to assist with positive drainage through the system, and would convey water through the bypass channel to an inlet control structure, then through the basin and outlet structure and back into Pleasant Grove Creek.

To contain water within the basin, an earthen embankment approximately 17,300 feet in length would be constructed by placing and compacting soil materials generated during excavation of the bypass channel.

The South Basin would have both an inlet and an outlet structure. The structures would be constructed of reinforced concrete and would be designed to regulate the storage of water in the basin. The structures would include walls and would measure approximately 35 feet from wing wall to wing wall. On the inlet structure, the wall would be about 11 feet high; for the outlet structure the wall would be about 15 feet high. Three sluice gates, each measuring 6 feet by 6 feet, would be mounted on the inlet structure wall, and two sluice gates, each measuring 4 feet by 4 feet, would be mounted on the outlet structure wall. All of the gates would be automatically operated and would normally be in the open position.

Flows in excess of the storage capacity of the basin would flow over the outlet structure wall, which would act as a weir and as the principal spillway of the basin. The top of both the inlet and outlet weirs would be at elevation 76.5 feet.

2.1.3 Access Roads

Internal access roadways would provide maintenance vehicle access between public roads and the inlet and outlet structures. The roadways would have an aggregate base and would extend along top of the embankments of the retention basin.

The North Basin access road, when needed, would be improved along a 1,500-foot-long portion extending from Sunset Boulevard West, south along an existing easement and into the Reason Farms site. It would then continue south along an existing levee, finally tying into the road planned for the top of the northern embankment.

2.1.4 Construction Activities and Workforce

The project would likely be constructed in two phases. If constructed in one phase, all work would be constructed as a single construction project, with most if not all work completed in a single construction season. If constructed in two phases, each basin would be constructed as an individual project. In the two-phase scenario, the first phase would be the South Basin, and the second phase would be the North Basin.

Construction activities would include deconstruction of existing facilities, channel excavation, embankment construction and inlet/outlet structure installation; however, these three activities could be performed concurrently at different locations on the site.

Up to 45 or 50 workers may be on site at any one time. The total number of personnel on the site at one time would depend upon the construction schedule and phasing. Construction would be limited to the daytime hours of 7 A.M. to 7 P.M., Monday through Friday and 8 A.M. to 8 P.M. Saturday and Sunday.

2.1.5 Maintenance

The inlet and outlet structures and the North and South basins would be maintained facilities. Periodic inspections would be conducted to assess the integrity and condition of the embankments, low-flow channels, bypass channel, and swale, and to identify and implement repairs as needed.

2.1.6 Opportunities for Other Uses

While owned by the City of Roseville, the project area would be managed by the City as public open space and could accommodate opportunities for other uses at the site that could be constructed in the future by the City or others as separate projects. These opportunities, although not part of this project, could include habitat and restoration projects, recreation through the development of recreational trails, and potentially a portion of a future Placer Parkway.

2.2 ENVIRONMENTAL IMPACTS AND MITIGATION

This Draft EIR is a "focused" Draft EIR and it analyzes only those impacts determined by the Initial Study to be potentially significant and for which no mitigation was identified to reduce impacts to a less than significant level. The environmental impacts analyzed here include Agricultural Resources, Construction Air Quality, Construction Noise, and Growth, including Population Growth. Biology is also included in this Draft EIR in support of the future 404(1)(b) alternatives analysis required for future permitting of the proposed project.

Table 2-1 at the end of this chapter identifies all impacts which have been identified as potentially significant, either in the Initial Study or this Draft EIR. Mitigation measures are identified and are also summarized on Table 2-1. Residual significance indicates the remaining level of significance after implementation of mitigation measures. An impact which remains significant after all mitigation is considered an unavoidable adverse impact of the proposed project. Significant and unavoidable impacts of the proposed project identified in this Draft EIR are:

- Direct conversion of prime agricultural land to non-agricultural use.
- Indirect conversion of prime agricultural land to non-agricultural use.
- Inconsistent with the Placer County Air Quality Attainment Plan (AQAP), Placer County General Plan, and Roseville General Plan.
- Onsite retention basin construction equipment would generate short-term sound level increases at noise-sensitive locations.
- Northern access road construction equipment would generate short-term sound level increases at 6495 Sunset Boulevard West.
- Indirect inducement of cumulative growth, including population growth.

2.3 ALTERNATIVES TO THE PROPOSED PROJECT

This Draft EIR considers six alternatives to the proposed project, one of which is the No Project Alternative, one alternative that is at a separate location, and four alternatives based on varying levels of excavation and embankment construction to develop retention storage. Alternative 4 has two sub-alternatives. The alternatives analyzed are described in detail in Section 8.0, Other CEQA Sections, and are summarized below.

2.3.1 Alternative 1 – No Project Alternative

Under this alternative, the proposed project would not be developed. The basic landform at the site would remain in its present condition, and a retention basin would not be constructed.

2.3.2 Alternative 2 – Curry Creek Alternative

The Curry Creek Alternative is an offsite alternative. Under Alternative 2, a proposed retention basin and associated structures would be built on a site approximately 2 miles south of the Reason Farms site, 2¼ miles west of the city limits of Roseville. Roughly square, it is approximately bisected by Curry Creek in a southeast to northwest line. Its southern border is approximately ½ mile north of Baseline Road.

Alternative 2 would have a total storage capacity of approximately 2,140 acre-feet. This could be expanded to 2,530 acre-feet through excavation or by raising the height of the embankments, or a combination of both. The water surface elevation in Alternative 2 would be at approximately 79 feet.

2.3.3 Alternative 3 – Embankment Setback Alternative

Similar to the proposed project, Alternative 3 would be comprised of two retention basins: one located north of Pleasant Grove Creek and the second located south of the creek. Alternative 3 would have the embankments set back 300 feet from the ordinary high water mark of Pleasant Grove Creek. (In the proposed project, the embankments on both sides of Pleasant Grove Creek would be set back 100 feet from the ordinary high water mark or 70 feet from the top of the bank, whichever provides the greatest setback from the top of the bank.) The total length of the embankments in Alternative 3 would be 28,900 feet, which would be slightly shorter than the proposed project. The target storage volume of 2,530 acre-feet would require additional excavation within the basins, which would be placed on site in areas outside of the embankments.

2.3.4 Alternative 4A – Reduced Excavation Alternative

In Alternative 4A, the embankments both north and south of Pleasant Grove Creek would be located 300 feet back from the ordinary high water mark of the creek, similar to Alternative 3. Unlike

Alternative 3, no additional excavation would take place under Alternative 4A. All other components of Alternative 4A would be similar to Alternative 3. Alternative 4A would provide a total retention storage volume of 2,250 acre-feet.

2.3.5 Alternative 4B – South Basin Only Alternative

Alternative 4B would be identical to the proposed project, except that only the retention basin south of Pleasant Grove Creek would be constructed. Alternative 4B would yield a total of 1,860 acre-feet of retention storage.

2.3.6 Alternative 5 – Levee Removal Alternative

Alternative 5 proposes an independent design feature for the retention basins that could be implemented within the context of Alternatives 3, 4A, 4B, or the proposed project. Alternative 5 would consist of the removal or breaching of the existing levees along the main branch of Pleasant Grove Creek. Alternative 5 would enhance the ability of Pleasant Grove Creek to overtop its banks and flow into the adjacent floodplain, by eliminating the existing barrier (the levee), and would encourage the natural development of beneficial riparian vegetation in the area between the creek and the embankments. Under Alternative 5, all of the design features and specifications of Alternatives 3, 4A, 4B, or the proposed project would remain unchanged.

2.3.7 Alternative 6 – Drainage Conveyance Alternative

Alternative 6 proposes an independent design feature that could be implemented within the context of the proposed project or Alternatives 3 or 4A. This alternative would consist of excavating a drainage ditch along the northeastern boundary of the site to improve drainage of the adjacent property. The proposed ditch would run west along the northeastern boundary and then south along the proposed access road, terminating at the new swale for the North Basin. Under Alternative 6, all the design features and specifications of Alternatives 3, 4A or the proposed project would remain unchanged.

2.4 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 2-1 lists all impacts identified in this Draft EIR, identifies mitigation measures to reduce impacts to a less than significant level (where feasible), and identifies the level of significance after mitigation. Table 2-1 also includes all impacts in the Initial Study for which mitigation measures were identified. Impacts that were determined to be less than significant without mitigation are not included in Table 2-1. All impacts found by the Initial Study to be less than significant are summarized below with additional discussion contained in the Initial Study (see Appendix A).

2.4.1 Aesthetics

The development of the project would have a less than significant impact on scenic vistas and on the existing visual character or quality of the site and its surroundings. The impact to the site would be less than significant as the retention basin has been designed to minimize alteration to the contours of the land and to carefully connect into existing elevations. The retention basin design would only remove trees directly in line with the placement of the inlet and outlet structures, which would not substantially alter scenic views in the area. These trees would be replaced consistent with the City of Roseville Tree Preservation Ordinance.

The development of the project would not impact scenic resources or would not impact day or night-time views in the area resulting from the creation of substantial light or glare.

2.4.2 Air Quality

The development of the project would expose sensitive receptors to substantial pollutant concentrations and is considered to be potentially significant. Implementation of Mitigation Measure AQ-1 would reduce this impact to a less than significant level.

The development of the project would not contribute to objectionable odors affecting a substantial number of people.

2.4.3 Biological Resources

The project would have a potentially significant impact on vernal pool branchiopods and nesting raptors, including white-tailed kite, northern harrier and Swainson's hawk. Implementation of Mitigation Measures B-1 and B-2 would reduce these impacts to a less than significant level.

The development of the project would have a potentially significant impact on riparian habitat. Implementation of Mitigation Measure B-3 would reduce this impact to a less than significant level.

The project would have a potentially significant impact on jurisdictional wetlands. Implementation of Mitigation Measure B-3 would reduce this impact to a less than significant level.

The development of the project would have a less than significant impact to salmonids because of the lack of viable spawning or migration habitat in the project site. This is because no native resident migratory wildlife corridors or native wildlife nursery sites exist on the site.

The project would result in the removal of oak trees. Implementation of Mitigation Measure B-4, which specifies the replacement of oak trees in accordance with the City of Roseville Tree Preservation Ordinance, would reduce this impact to a less than significant level.

The project also broadly complies with the goals and policies of the Placer Legacy Program and is considered to be a less than significant impact.

2.4.4 Cultural Resources

Development of the project would result in no impact to historical resources defined in Section 15064.5 of CEQA.

The development of the project would have a potentially significant impact on archaeological resources subject to Section 15064.5 of CEQA. Implementation of Mitigation Measures C-1, C-2, C-3 and C-4 would reduce this impact to a less than significant level.

The project would have a potentially significant impact on a unique paleontological or geologic feature. Implementation of Mitigation Measures C-5, C-6 and C-7 would reduce this impact to a less than significant level.

The project would have the potential to disturb human remains. Implementation of Mitigation Measures C-3 and C-4 would reduce this impact to a less than significant level.

2.4.5 Geology and Soils

The project would have no impact on a known earthquake fault or result in or increase risk of landslide. The development of the project would not be subject to strong seismic ground shaking which could expose people or structures to risk and would not result in seismic-related ground failure, including liquefaction,

The development of the project would not create substantial soil erosion due to implementation of Best Management Practices during construction, resulting in a less than significant impact.

The project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse due to location on a geologic unit or soil that is unstable or would become stable.

The development of the project would result in increased risk to life or property due to the location of the project on expansive soils and is considered to be a potentially significant impact. This impact would be reduced to a less than significant level with the implementation of Mitigation Measure G-1.

The project would not result in the use of septic tanks or alternative waste water disposal systems, and there would be no impact.

2.4.6 Hazards and Hazardous Materials

The development of the project would not require the routine transport, use, or disposal of hazardous materials, and there would be no impact.

The development of the project would not create a significant hazard through upset conditions involving the release of hazardous materials into the environment. Hazardous materials currently used and stored on the site, including hydraulic oil, motor oil, diesel fuel, aqueous ammonia, algaecide and pesticides, will be contained and removed in accordance with applicable regulations for the transport and disposal of hazardous materials on public thoroughfares by licensed contractors.

The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within 3 miles of an existing or proposed school, and there would be no impact.

The project would not be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5, and there would be no impact.

The project would not be located within an airport land use plan or within two miles of a public airport or public use airport, and would not result in a safety hazard for people working in the project area due to the proximity to the private use airstrip. During construction and operation, no residents would be located within the project area. No impact would occur.

The development of the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and there would be no impact.

The project would slightly increase the risk of wildfire to surrounding residences; however, this impact is considered to be less than significant. The implementation of maintenance activities to remove excess vegetation would reduce risk of wildfire associated with increased vegetation density.

2.4.7 Hydrology and Water Quality

The project would alter the course of Northern Tributary Two and allow a small portion of the flows in Pleasant Grove Creek to leave the creek and follow the bypass channel through the South Basin. The project would increase the peak rate of flow upstream of the site and decrease the peak rate of flow downstream of and through the site. Flood volumes flowing to Sutter County would decrease. This is a design goal of the project and would result in a less than significant impact.

The project would not result in substantial erosion or sediment transport to Pleasant Grove Creek during construction, and would result in a less than significant impact. The retention basin has been designed so that during operation sediment generated would be collected in the North and South basins prior to entering Pleasant Grove Creek.

The project would not substantially degrade water quality or violate water quality standards or waste discharge requirements, and would result in a less than significant impact.

The project would not deplete groundwater supplies or interfere substantially with groundwater recharge, and there would be no impact.

The development of the project would not create or contribute runoff water which would exceed the capacity or planned stormwater drainage systems or provide additional sources of polluted runoff, and there would be no impact.

The project would not place housing within a 100-year flood hazard area or place structures that would impede or redirect flows within a 100-year flood hazard area, and there would be no impact.

The development of the project would have a less than significant risk of exposing people or structures to a loss, injury or death as a result of the failure of the retention basin. This is because the retention basin would be designed and operated according to the requirements of the California Department of Safety of Dams.

The development of the project would not result in inundation by seiche, tsunami or mudflow, and there would be no impact.

As described in Section 1.5, Incorporation by Reference, the Final Conceptual Design Report is available for public review at the City of Roseville Department of Public Works. This report includes Appendix B: Hydrologic Analysis, Appendix C: Hydraulic Modeling, and Appendix D: Sediment Transport Analysis.

2.4.8 Land Use and Planning

The development of the project would not conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project. The project broadly complies with the Placer Legacy Program. Conflicts are minor and are considered to be a less than significant impact. In addition, the development of the project would not divide an established community, and there would be no impact.

2.4.9 Mineral Resources

The development of the project would not result in the loss of availability of a known mineral resource or the loss of availability of a locally important mineral resource recovery site, and there would be no impact.

2.4.10 Noise

Noise associated with demolition of the three existing residences on the project site will be of a temporary nature. The shortest distance between a permanent residence and a residence planned for destruction is approximately 1,500 feet. The sound level from demolition at this distance would be approximately 55 dBA, and would not result in a significant impact.

Construction-related traffic would generate short-term sound level increases at noise-sensitive locations. Sixty-five cars traveling on a roadway at 45 mph are expected to create a noise level of approximately 60 dB L_{eq} over one hour at residential area 4. This noise level is expected to be much lower at residence 3. Since this noise level will only occur during two hours of the day, access traffic does not constitute a significant impact to the residences in the area.

2.4.11 Population and Housing

The development of the project would displace two residences and one residential area containing four mobile homes, and approximately 12 people, and would not require construction of replacement housing elsewhere. This is considered to be a less than significant impact.

2.4.12 Public Services

The development of the project would result in an increase in fire risk to the area which may increase the need for fire protection services. Maintenance activities conducted would remove excess vegetation and reduce the level of fire risk to the project area. Therefore, the impact on fire protection services is considered to be less than significant.

The management of the site as public open space may potentially increase inappropriate use of the project area. However, this would be a less than significant impact on the provision of police protection services because the City of Roseville has sufficient resources to adequately provide service to the project area.

The development of the project would slightly increase maintenance activities by the City's Public Works Department for maintenance activities. However, the demand for these services is not anticipated to be substantial and the impact of the Department's services is considered to be less than significant.

The development of the project would have no impact on schools or parks.

2.4.13 Recreation

A hunting and fishing club, Wilderness Unlimited, currently has access to the site and, following development of the proposed project, these recreational activities may no longer continue within the project area. If this were the case, individuals using the project area for hunting and fishing might use

other nearby hunting or fishing areas. If hunting and/or fishing were permitted on the site, usage might increase, depending on how the recreational users were managed. Either of these scenarios would be considered a less than significant impact on recreation. In addition, the potential for hiking or other recreational uses could provide additional recreational opportunities.

2.4.14 Transportation/Traffic

The development of the project would result in a minor increase in traffic during construction. This traffic would not change the traffic level of service at affected roadways or intersections, and construction traffic would be a less than significant impact. The only traffic associated with the proposed project, when operational, would be for maintenance activities. This would only occur several times a year and would be substantially less than traffic associated with construction. Traffic associated with potential future recreational opportunities is unknown, but would likely be less than construction traffic of 65 daily round trips. This is considered to be a less than significant impact, as described above. Therefore, traffic associated with project construction would be less than significant.

2.4.15 Utilities and Service Systems

The development of the project would not generate wastewater and therefore would not impact additional demand for services by local wastewater treatment providers or require the construction of new water or wastewater treatment facilities or expansion of existing facilities, and there would be no impact.

The project would not require the construction of new stormwater drainage facilities or expansion of existing facilities, and there would be no impact.

The project would have sufficient existing water supplies, and there would be no impact.

The project would comply with federal, state and local statutes and regulations related to solid waste and would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and there would be no impact.

2.4.16 Mandatory Findings

The proposed project could affect habitat for vernal pool fairy shrimp, a federally threatened species, and vernal pool tadpole shrimp, a federally endangered species. Mitigation Measure B-1 would reduce impacts to a less than significant level. The proposed project could potentially affect nesting raptors, including white-tailed kite, a federal species of concern and fully protected by the State of California, and Swainson's hawk, a state threatened species, during construction. Mitigation Measure B-2 would reduce this impact to a less than significant level. The proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or restrict the range of rare or endangered plant

or animal species. No important examples of the major periods of California history or prehistory have been identified on the proposed project site, so no such examples would be eliminated.

The proposed project would have cumulatively considerable impacts to agricultural resources and air quality, and indirectly, to growth not currently identified in existing plans. These are discussed in Section 8.4 of this Draft EIR.

No environmental effects that will cause substantial adverse effects on human beings are associated with the proposed project, other than the potential and speculative indirect effects associated with the facilitation of growth. The proposed project will alleviate potential downstream flooding by mitigating increased runoff volume resulting from 100-year frequency storms.

Table 2-1
Impact Summary Table – Proposed Project

Impact No.[1]	Impact Description	Level of Significance	Mitigation Measure	Residual Significance
Agricultural Resources				
AG-1	Direct conversion of prime agricultural land to non-agricultural use.	Significant	None Identified	Significant
AG-2	Conflict with Williamson Act contract areas.	Significant	Mitigation Measure AG-1 (Preserve the southwestern portion of the project area under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves for a period of twenty years).	Less than significant
AG-3	Indirect conversion of prime agricultural land to non-agricultural use.	Significant	None Identified	Significant
Air Quality				
AQ-1	Construction activities would increase short-term criteria air pollutant emissions.	Short-term: Significant Long-term: Less than significant	Mitigation Measure AQ-1 (Develop and implement a Construction Emission/Dust Control Plan in accordance with the requirements of the Placer County Air Pollution Control District)	Short-term: Significant Long-term: Less than significant
AQ-2	Inconsistent with the Placer County Air Quality Attainment Plan (AQAP), Placer County General Plan, and Roseville General Plan.	Significant	None Identified	Significant
Biological Resources				
B-1	Loss of high quality riparian habitat.	Less than significant	Mitigation Measure B-1 (Seed temporarily disturbed riparian areas with native plant species) and Mitigation Measure B-2 (Replace oak trees).	Less than significant
B-2	Loss of seasonal wetlands.	Significant	Proposed: Mitigation Measure B-3 (Compensate for direct and indirect impacts to listed vernal pool branchiopod habitat).	Less than significant
B-3	Loss of other jurisdictional wetlands and other Waters of the U.S.	Significant	Mitigation Measure B-1 (Seed temporarily disturbed riparian areas with native plant species).	Less than significant
B-4	Direct and indirect impacts to listed vernal pool branchiopods.	Significant	Proposed: Mitigation Measure B-3 (Compensate for direct and indirect impacts to listed vernal pool branchiopod habitat).	Less than significant

Table 2-1
Impact Summary Table – Proposed Project

Impact No.[1]	Impact Description	Level of Significance	Mitigation Measure	Residual Significance
B-5	Potential construction-related disturbance to nesting Swainson's hawk and other nesting birds.	Potentially significant	Mitigation Measure B-4 (Conduct pre-construction surveys for Swainson's hawk and other bird species nests, and avoid construction activities within 0.25 mile of active nests between March 1 and September 15).	Less than significant
B-6	Loss of dwarf downingia populations.	Significant	Mitigation Measure B-3 (Compensate for direct and indirect impacts to listed vernal pool branchiopod habitat).	Less than significant
B-7	Diversion and entrapment of fish.	Less than significant	None required.	Less than significant
B-8	Loss of oak trees.	Significant	Mitigation Measure B-2 (Replace oak trees).	Less than significant
Cultural Resources				
	Potential impacts to archaeological resources, which may be buried within the site as a result of agricultural activities.	Potentially significant	Mitigation Measure C-1 (Conduct a pre-construction induction with key construction personnel to promote awareness of archaeological resource significance, visual identification, and discovery notification procedures); Mitigation Measure C-2 (Retain a qualified professional archaeologist to observe all project-related ground-disturbing activities within 25 meters (82 feet) of the banks of Pleasant Grove Creek); Mitigation Measure C-3 (Immediately stop ground-disturbing activities in the vicinity and consult a qualified professional archaeologist if buried cultural deposits are discovered during construction) and Mitigation Measure C-4 (In the event resources are discovered develop and implement mitigation measures and management recommendations in consultation with the State Historic Preservation Office, and, if the site is of aboriginal association, the National American Heritage Commission and local Native American Community).	Less than significant
	Potential impacts to paleontological resources, which may be buried within the site as a result of agricultural activities.	Potentially significant	Mitigation Measure C-5 (Conduct a pre-construction induction with key construction personnel to promote awareness of paleontological resource significance, visual identification and discovery notification procedures); Mitigation Measure C-6 (Retain a	Less than significant

Table 2-1
Impact Summary Table – Proposed Project

Impact No.[1]	Impact Description	Level of Significance	Mitigation Measure	Residual Significance
			qualified professional paleontologist to observe and monitor all project-related ground-disturbing activities) and Mitigation Measure C-7 (Immediately stop ground-disturbing activities in the event that significant paleontological resources are discovered, then develop and implement mitigation salvage measures in accordance with professional paleontological standards).	
	Potential impacts to human remains, which may be buried within the site as a result of agricultural activities.	Potentially significant	Mitigation Measure C-3 (Immediately stop ground-disturbing activities in the vicinity and consult a qualified professional archaeologist if buried cultural deposits are discovered during construction) and Mitigation Measure C-4 (In the event resources are discovered develop and implement mitigation measures and management recommendations in consultation with the State Historic Preservation Office, and, if the site is of aboriginal association, the National American Heritage Commission and local Native American Community).	Less than significant
Geology and Soils				
	Potential risks to life or property due to the project being located on expansive soil.	Potentially significant	Mitigation Measure G-1 (Comply with the conclusions and recommendations of a site-specific geotechnical investigation).	Less than significant
Noise				
N-1	Removal of existing onsite residences.	Less than significant	None warranted	
N-2	Onsite retention basin construction equipment would generate short-term sound level increases at noise-sensitive locations.	Significant (short-term)	Proposed: Mitigation Measure N-1 (Consult with affected residents, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or temporarily boarding up windows facing construction) Recommended: None	Potentially significant (short-term)
N-3	Northern access road construction equipment would generate short-term sound level increases at 6495 Sunset Boulevard West.	Significant (short-term)	Mitigation Measure N-1 (Consult with affected residents, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or	Potentially significant (short-term)

Table 2-1
Impact Summary Table – Proposed Project

Impact No.[1]	Impact Description	Level of Significance	Mitigation Measure	Residual Significance
			temporarily boarding up windows facing construction)	
N-4	Construction-related traffic would generate short-term sound level increases at noise-sensitive locations	Less than significant	None warranted	
Growth				
	Significant cumulative indirect growth inducement.	Significant	None Identified	Significant
Recreation				
	Potential recreational opportunities may impact the riparian zone of Pleasant Grove Creek or other sensitive habitat.	Potentially significant	Mitigation Measure R-1 (Prepare guidelines to limit disturbance to the riparian zone of Pleasant Grove Creek or other sensitive habitat, and prepare a public educational program, including informative signage to explain the ecological importance of the unique habitats on the site).	Less than significant

Note: [1] Impact number corresponds to Draft EIR impact identification. If no number is identified, the impact was only identified in the Initial Study, and not carried into the Draft EIR, except for growth, which is included in Draft EIR Section 8.4.

3.0 PROJECT DESCRIPTION

The City of Roseville (the "City") proposes to construct a retention basin west of Roseville in unincorporated Placer County (the "County"), California. This chapter provides descriptive information regarding the following:

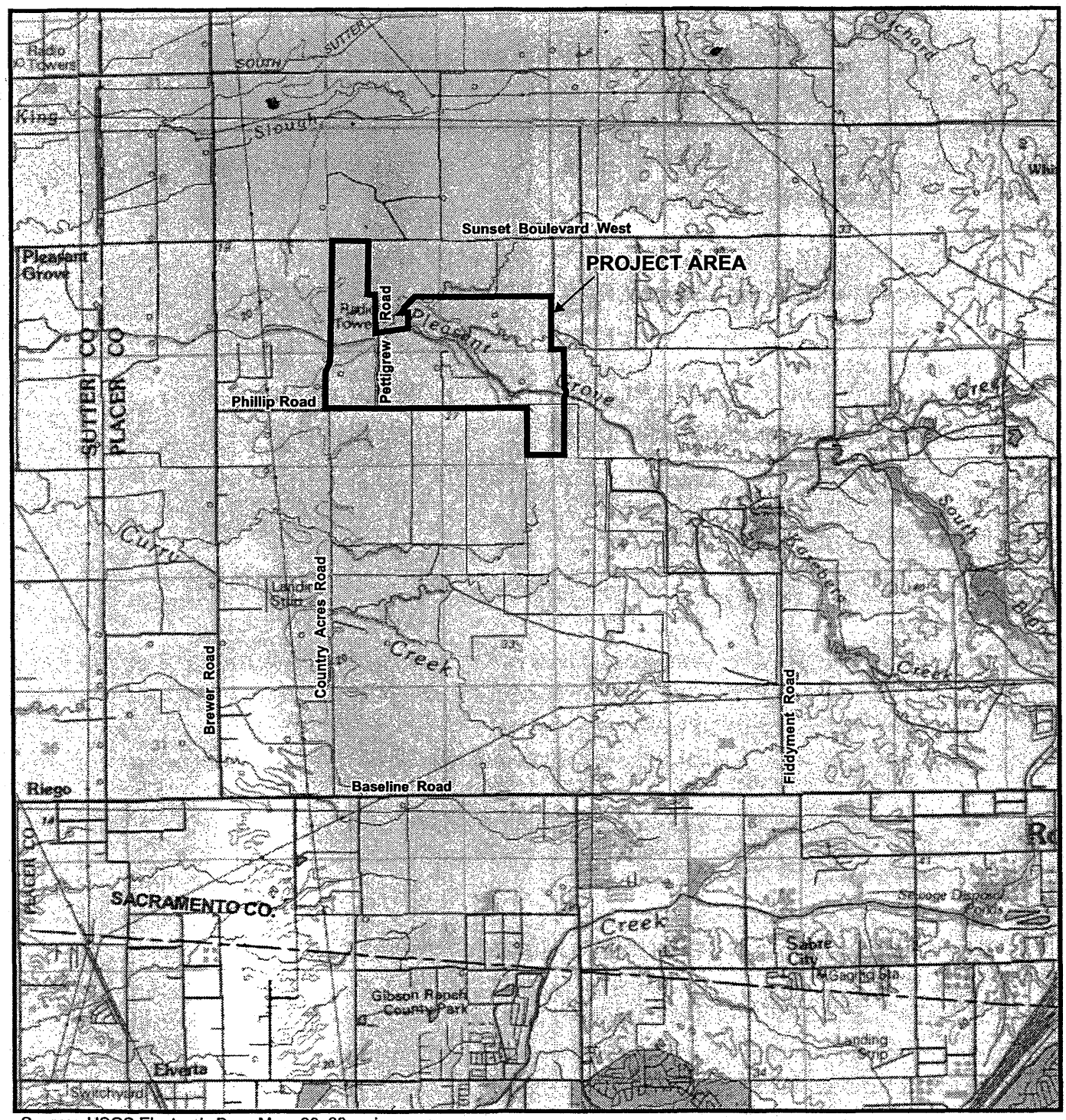
- project location;
- project background and history;
- study area characteristics;
- project objectives;
- a description of the proposed project including proposed environmental protection measures;
- opportunities for future uses;
- existing facilities;
- estimated costs; and
- required approvals and permits.

3.1 PROJECT LOCATION

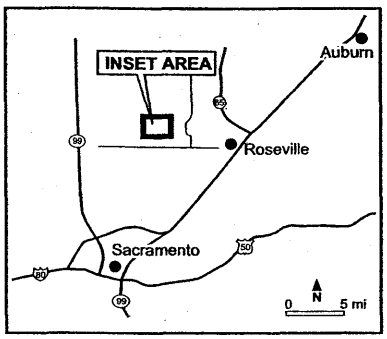
The project area is located in southwestern Placer County approximately 2.4 miles west of the city limits of Roseville. The project area is an irregularly shaped, approximately 1,500-acre rectangular site, with northwestern and southeastern fingers jutting out from the rectangle. The northernmost portion of the project area abuts Sunset Boulevard West, and the southernmost boundary of the project area lies along Phillip Road. Brewer Road and Fiddyment Road are the closest regularly-used public roads to the western and eastern boundaries of the project area. Pettigrew Road bisects the western portion of the project area (Figure 3-1).

The project area is located within Sections 9, 10, 14, 15, and 16 of Township 11 North, Range 5 East as depicted on the Pleasant Grove Quadrangles of the U.S. Geological Survey topographic maps. The project site includes twelve existing Assessor Parcel Numbers as depicted on Figure 3-2. The acreages of each of the parcels are presented in Table 3-1.

Conceptual design of the proposed project is described in detail in the Reason Farms Retention Basin Final Conceptual Design Report (PWA/URS), which is hereby incorporated by reference into this EIR. This report evaluated the performance of the retention basin for a wide range of hypothetical storm events, examined points upstream, through and downstream of the site, and evaluated operational scenarios with gates in both the open and closed position. The Final Conceptual Design Report can be reviewed at the City of Roseville's Public Works Department.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California



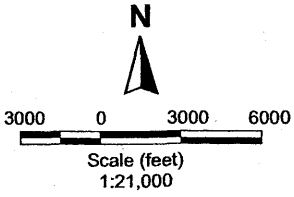


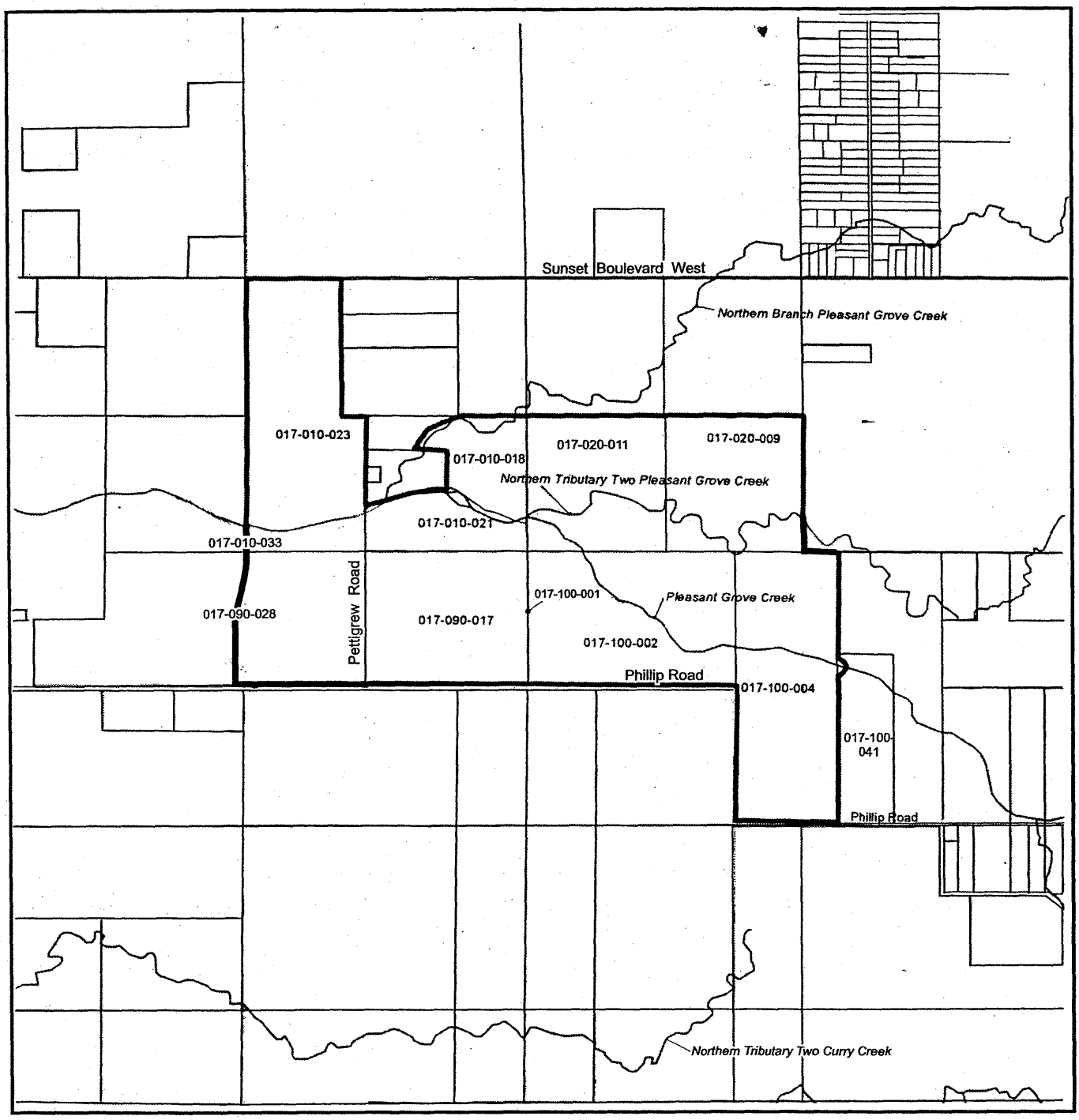
Figure 3-1
LOCATION MAP

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

URS PWA

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Source: County of Placer, 1985. Assessor's Map Block 17, Pages 01, 02, 09, 10, 13 and 15. County of Placer, California

LEGEND

- Site Boundary
- 17-090-028 Parcel Number
- Water Course
- Parcel Boundary

N

1000 0 1000 2000

Scale (feet)

Figure 3-2
PARCEL BOUNDARIES

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Roseville, California

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Table 3-1
Acreages of Parcels Within the Project Area

Parcel Number	Acreage
017-010-018	67
017-010-021	67
017-010-023	223
017-020-009	160
017-020-011	160
017-090-017	184
017-090-028	89.9[a]
017-010-033	80.1[b]
017-100-001	1.3
017-100-002	236
017-100-004	237.3
017-100-041	Approximately 0.12[c]

Source: Placer County, 1985.

Notes:
[a] Portion of 338.8-acre parcel to be purchased adjacent to Reason Farms.
[b] Portion of 80.1-acre parcel to be purchased adjacent to Reason Farms.
[c] Portion of 80.0-acre parcel adjacent to Reason Farms where easement would be required.

3.2 PROJECT BACKGROUND AND HISTORY

The City of Roseville and Placer County are rapidly expanding regions. In 2000, the City had a population of 79,921, which was an increase of approximately 79 percent over the 1990 population. The 2010 projected population for the City is 109,160, which is an increase of approximately 37 percent over the 2000 population (City of Roseville, 2001). During 2000, the County had a population of 248,399, which was an increase of approximately 44 percent over the 1990 population. The 2010 projected population for the County is 339,300, which is an increase of approximately 37 percent over the 2000 population (Placer County, 2002a).

The projected population increases are likely to be the result of the development of entitled projects and future projects within the City of Roseville and elsewhere within the County and its incorporated cities. The development of entitled and future projects may generate additional stormwater/floodwaters that would require mitigation.

In the past several years, Sutter County has exerted pressure on the City of Roseville, the town of Rocklin, and Placer County to provide solutions to mitigate increased runoff volume associated with development, adversely affecting Sutter County flooding resulting from large-scale storm events.

Several studies have contributed to defining the parameters associated with retention storage volumes associated with entitled and future projects. The hydrologic basis of the proposed project is founded on the Auburn Ravine, Coon and Pleasant Grove Creeks Flood Mitigation Plan (CH2M Hill, 1993) prepared for the Placer County Flood Control and Water Conservation District (PCFCWCD). This study was conducted in accordance with Placer County's Stormwater Management Manual. The proposed project would benefit the overall watershed by working towards the specific 3,600 acre-feet of total retention volume recommended in the 1993 study. Additional studies used in the analysis include the Master Drainage Study for Fiddyment/Westpark Properties (Wood-Rogers, Inc., 2001a), the Summary Report for Proposed Retention Basin at Reason Farms (Wood Rodgers, Inc. and Wade Associates, 2001), and the Pleasant Grove Watershed Mitigation Fee report for the City of Roseville (Civil Solutions, 2000a), including its amendment.

Currently, the City has identified 2,530 acre-feet of retention storage, as shown on Table 3-2.

Table 3-2
Summary of Retention Volume Estimates

Area Description	Retention Volume Estimate (acre-feet)
WRSP and MOU Area[a]	661.6[b]
Roseville Energy Facility	20[b]
Pleasant Grove WWTP	207[c]
Northwest Rocklin Annexation Area	180[d]
Subtotal	**1,068.6**
Existing and Entitled Development	1,461.2[e]
Total	**2,529.8**

Notes:

[a] The proposed West Roseville Specific Plan Area (WRSP) and the "Transition Area" west of Roseville city limits, the subject of a Memorandum of Understanding (MOU) between the City of Roseville and Placer County regarding its future development.

[b] Wood-Rodgers (2001b).

[c] 24-hour Wet Weather Flow (peak factor of 2.5) effluent storage for potential plant capacity of 27 mgd.

[d] A portion of the storage requirement per Northwest Rocklin Annexation Area, Draft EIR (EIP Associates, 2001).

[e] Existing and entitled development within the City of Roseville as presented by Civil Solutions (2000b).

The 2,530 acre-foot storage volume presented in Table 3-2 would not mitigate for increased runoff volume due to full build-out of the entire watershed. Rather, it would mitigate only for existing and entitled projects within the City of Roseville and potentially those other areas included in the table, some of which are outside of the city limits. The land use parameters used to calculate the increase in runoff

volume are consistent with conditions that would exist if existing and entitled development within the city limits and other development areas, as indicated in Table 3-2, are constructed. This would include the proposed West Roseville Specific Plan (WRSP) Area, and the entire transition area covered by a Memorandum of Understanding (MOU) between the City and the County of Placer (Figure 3-3). The MOU is an agreement signed in 1997 between the City and County that addresses development of certain land west of the city limits.

The 2,530 acre-foot requirement could also provide retention for approximately 180 acre-feet of stormwater runoff from the North West Rocklin Annexation Area, also known as Sunset Ranchos. This volume of stormwater runoff is a portion of the total retention requirement for Sunset Ranchos of 260 acre-feet. If not retained, stormwater runoff from the Sunset Ranchos project could contribute to cumulative runoff volumes in the Pleasant Grove Creek and Orchard Grove Creek Watersheds (EIP, 2001).

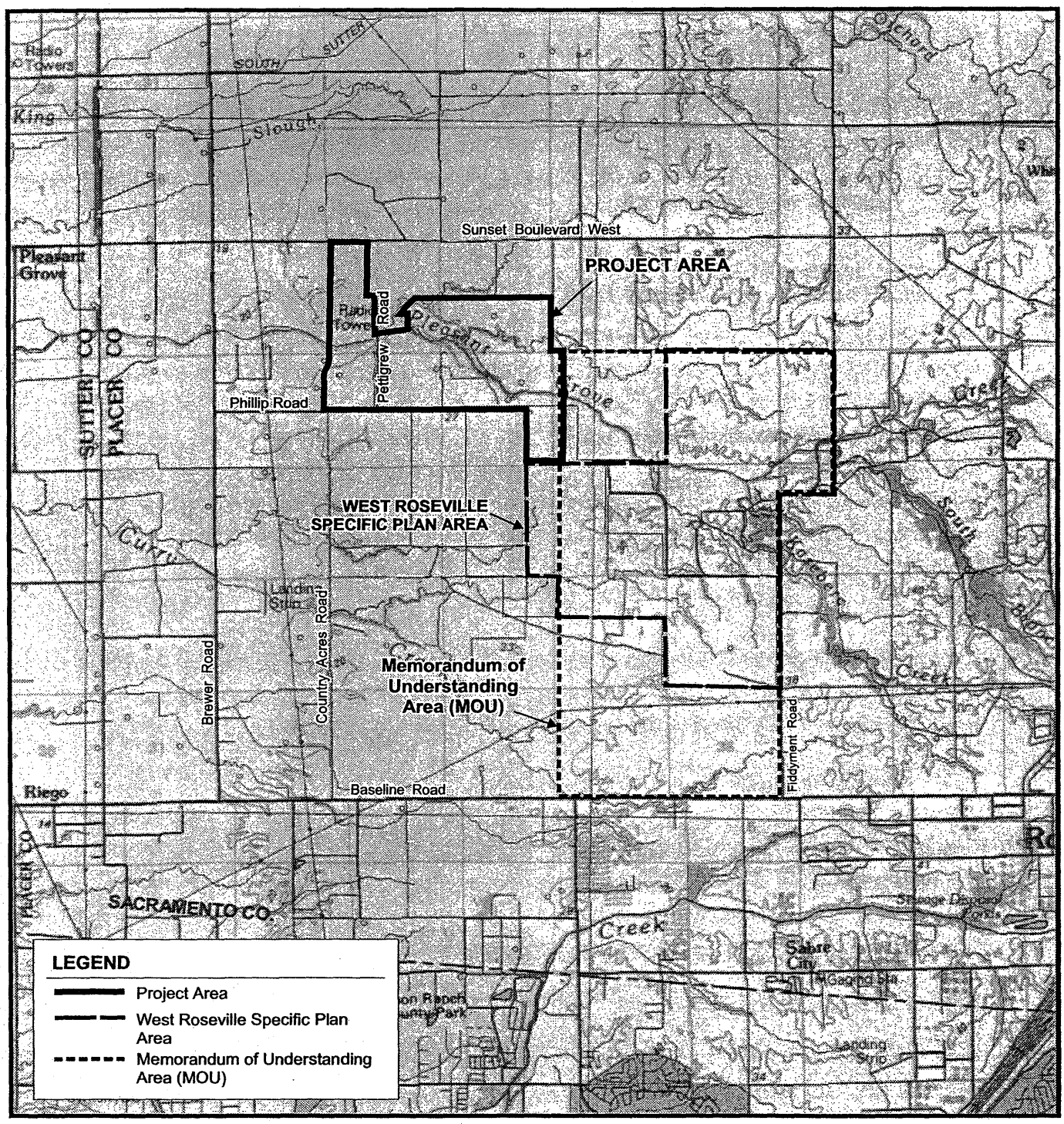
Finally, the 2,530 acre-foot requirement could accommodate storage for tertiary treated effluent from the Pleasant Grove Wastewater Treatment Plant, if the plant were to be expanded at its present location in the future (to include up to two additional 3.0 mgd treatment units for a total plant capacity of 27 mgd)[1], or if modified treatment processes require additional space at the plant site. Such expansion or modification could require use of, and thus displace, planned onsite treated effluent storage areas. A plant expansion would be necessary to accommodate future development in the Transition Area covered by the City/County MOU presented in the "Feasibility Analysis Report for the Proposed West Roseville Specific Plan and City/County MOU Area" by the City of Roseville, February 2002 (Montgomery Watson Harza, 2001). With the proposed project, the wet weather effluent storage needs of the treatment plant would be met, as required by the Roseville Regional Wastewater Treatment Service Area Master Plan EIR (ESA, 1996).

Expansion of the retention facility in the future to accommodate retention storage of other entities would be physically possible, either through extension of the South Basin's westernmost embankment or through excavation. Such an expansion would require City approval and additional environmental review, and is not a part of the proposed project.

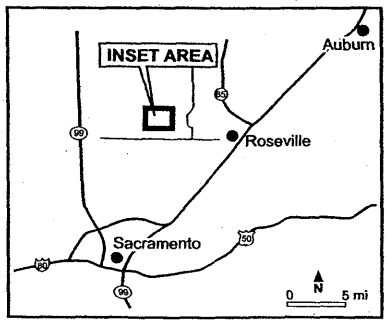
The City conducted a screening level evaluation of three alternative site locations for the proposed retention basin (URS/PWA, 2002). The project area, a site immediately north and east of the project area and closer to the city limits, and a site south of the project area and traversed by Curry Creek were evaluated. Environmental and physical constraints governing the development of the site were identified for each alternative. The project area was selected as the preferred site because it provided adequate retention storage with a lower level of environmental impact and a willing seller.

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[1] 27 mgd (Dry Weather Flow) = 82.9 acre-feet. The requirement is to store the 24-hour Wet Weather Flow. Wet Weather Flow = 2.5 times Dry Weather Flow. 82.9 acre-feet × 2.5 = 207 acre-feet.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California
City of Roseville, 2001. Major West Placer County Ownership and Potential Development Projects Map



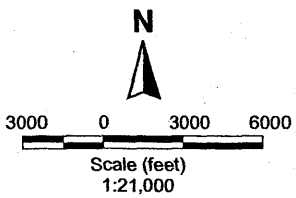


Figure 3-3
WEST ROSEVILLE SPECIFIC PLAN AND MEMORANDUM OF UNDERSTANDING AREAS

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Prior to the City's consideration of the project area, the proponents of the WRSP (Westpark Associates and Signature Properties) identified the project area as a potential location for a retention facility to support their proposed development, and currently hold an option to purchase the property from the owner. Westpark Associates and Signature Properties have offered to make its option rights in the property available to the City so that the City can acquire the property individually or in conjunction with Westpark Associates and Signature Properties.

An Exclusive Right to Negotiate Agreement has been executed by the City and Westpark Associates and Signature Properties. Under the agreement, the City has gained the exclusive right to obtain Westpark Associates and Signature Properties option rights to purchase the Reason Farms property. During the Exclusive Negotiations period, which runs to February 1, 2003, the City and Westpark Associates and Signature Properties would negotiate the details of the acquisition of the Reason Farms property. Included in the negotiations would be such issues as the form of ownership of the property (City alone, in conjunction with Westpark Associates and Signature Properties, or ownership by a non-profit conservancy trust), the use or uses of the property, and the ultimate purchase price (City of Roseville, 2001).

The City would also acquire the parcel at the southwesternmost portion of the project area, also from an option held by Westpark Associates, and obtain a construction and maintenance easement for a small portion within parcel 017-100-041 adjacent to the eastern boundary of the Reason Farms site.

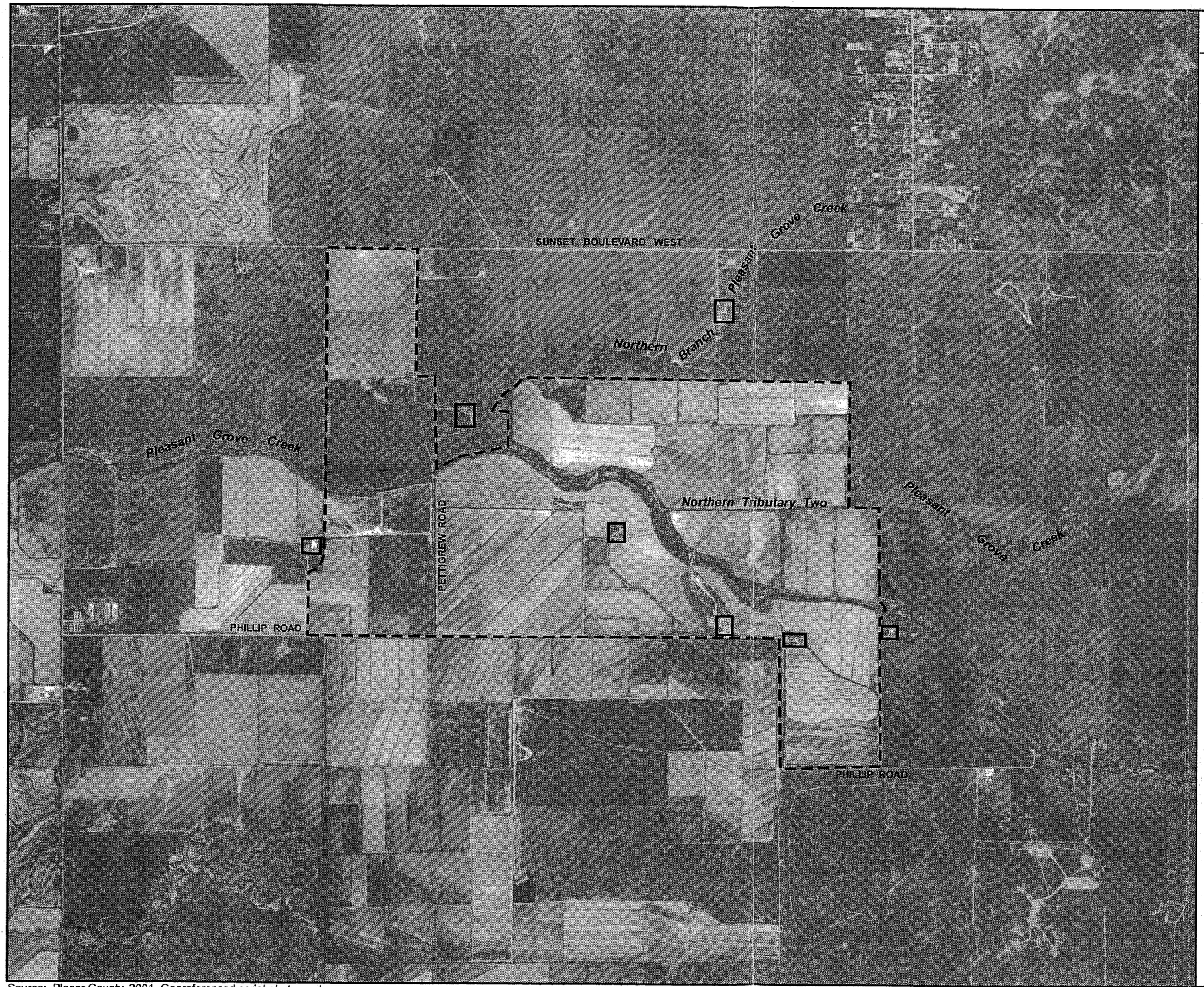
3.3 STUDY AREA CHARACTERISTICS

The proposed project area is rural in character. The project area has relatively flat, stepped topography, consistent with its use as rice fields. In general, the site slopes from east to west, from elevation 83 to 65 feet. As an exception, approximately 90 acres of the southeastern corner are higher, between elevation 86 and 90 feet. The rectangular area to the northwest slopes from north to south to the Pleasant Grove Creek between elevation 77 and 60 feet.

The primary feature of the project area is Pleasant Grove Creek, which bisects the majority of the project area (approximately 1,500 acres) into two major areas, north and south of the creek (Figure 3-4). Two tributaries to Pleasant Grove Creek, North Branch and Northern Tributary Two, flow through the northern area.

The low point in the streambed of Pleasant Grove Creek varies from 62 feet at the upstream end (east boundary) to 50 feet at the downstream end (west boundary).

The project area is designated Agriculture in the Placer County General Plan, and is zoned Farming and "Minimum Building Site as Shown on Map" (F-B-X). Adjacent lands are also designated F-B-X. The land uses surrounding the project area are predominantly agricultural (rice farming to the south and west



LEGEND

- Project Area
- Residence

N

1000 0 1000 2000

Scale (feet)
1:24:000

Figure 3-4
SITE MAP

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URS PWA

Source: Placer County, 2001. Georeferenced aerial photography.

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and row crops/grazing to the north and east), residential to the northeast, and water courses/wetland areas and riparian habitat along the upstream and downstream portions of Pleasant Grove Creek outside the boundaries. A radio tower is located adjacent to the northern boundary of the project area.

One residential area, consisting of four mobile homes, and two residences and farm outbuildings are located between the southern boundary of the project area and Pleasant Grove Creek as shown on Figure 3-4. Four offsite residences are located close to the western, eastern, and northern boundaries of the project area. The location of these offsite residences is also shown on Figure 3-4.

3.4 PROJECT OBJECTIVES

The proposed project is intended to provide retention storage to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville. The proposed project could also provide retention storage associated with other identified areas in south Placer County, subject to agreements with the appropriate entities. Specific goals identified by the City include:

1. To provide retention storage for some or all of the incremental increase in runoff volume resulting from the City of Roseville's currently entitled and future development projects that generate runoff flowing through Sutter County.
2. To provide retention storage for the proposed West Roseville Specific Plan and the remainder of the MOU area and potentially for a portion of the Northwest Rocklin Annexation Area.
3. To provide retention storage for the City of Roseville Pleasant Grove Creek Wastewater Treatment Plant treated effluent.
4. To meet the above objectives in a manner consistent and compatible with other goals and policies of the City of Roseville's General Plan, the Placer County General Plan, the Placer County Flood Control and Water Conservation District, the Placer Legacy Project and the Wildlife Agencies.
5. To provide opportunities for open space and passive recreation near City boundaries.
6. To provide a low maintenance facility with a minimal amount of construction (excavation and/or fill placement).
7. To minimize the number of property owners who could be negatively affected by project implementation (property acquisition and construction).

The proposed project is not intended to and would not mitigate for peak flow rates emanating from specific development projects, since the City of Roseville requires development projects to incorporate mitigation to reduce the post-development peak rate of runoff to no more than the pre-development runoff rate in areas where it is shown that such detention is hydraulically beneficial to downstream properties. (In certain locations throughout the City, detention is not desirable because it would increase the overall peak flow of the basin; such development projects are designed to expedite drainage through the system so as not to coincide with the peak flow of the basin.)

3.5 PROPOSED PROJECT

3.5.1 Overview

The proposed project would be a retention facility designed to provide retention storage of 2,530 acre-feet, while retaining and enhancing open space characteristics. It would provide future opportunities for other uses such as enhancement of riparian, wetland and upland habitats and passive recreation (pedestrian and bicycle trails, etc.) that could be constructed by the City or others. The City could retain ownership or ultimately convey ownership to a conservancy agency or another third party.

Portions of the site not used for retention could be sold by the City or retained as open space. If unused portions were sold, proceeds would revert to the Pleasant Grove Drainage Fee fund. Potential purchasers could include adjacent landowners who might use the area(s) for farming, developers who might use portions of these areas as mitigation sites for preservation or enhancement, or others such as Placer County Transportation Planning Agency who could plan to develop portions of the site as part of the Placer Parkway Project subject to a separate permitting process.

The project would be comprised of two basins, one located north of Pleasant Grove Creek and the second located south of the creek. On nearly all occasions, the basins would appear as open fields. A small stream would flow through the North Basin during the wet season, and about once annually, a small stream would flow through the South Basin. When flooding is imminent in Sutter County (perhaps once every fifteen to thirty years), the basin outlets would be closed and water would accumulate and be held in the basins for a period of days. When the threat of flooding in Sutter County recedes, the basins would then be allowed to drain dry. Each basin would have certain typical features such as embankments, low-flow channels, and outlet structures. The basins and typical features are described in the following sections of this chapter and are shown on Figures 3-5 through 3-11. The purpose of the project is to retain storm water runoff during episodes of imminent flooding in Sutter County. Such occurrences may turn out to be rather rare, which means that the volume of water flowing through Pleasant Grove Creek during the year would generally not be sufficient to require the outlet gates of the retention basin to be closed for retention of surface water.

3.5.2 North Basin

The North Basin would have a surface area of approximately 171 acres. It would be located north of Pleasant Grove Creek and offset about 100 feet from the ordinary high water (OHW) level of the creek or 70 feet from the top of the bank, whichever provides the greatest offset from the top of the bank. The basin would receive water from Northern Tributary Two, a tributary to Pleasant Grove Creek that originates to the east of Reason Farms. Water entering the basin from Northern Tributary Two would be conveyed through the basin to the basin outlet structure by a low-flow channel. The low-flow channel would be constructed by excavation.

A man-made ditch at the eastern boundary of the site currently intercepts Northern Tributary Two flows. This ditch is currently incising along approximately 500 feet of its length. The North Basin embankment would cross this ditch, and with construction of the new low-flow channel, flows within Northern Tributary Two would no longer follow the existing ditch and the ditch would dry out. The existing ditch would be abandoned and filled. Northern Tributary Two would be reconstructed to approximate its former location prior to its realignment for rice farming.

An earthen embankment approximately 11,900 feet in length would be constructed by placing and compacting soil materials generated during excavation of the low-flow channel. The embankment would follow the alignment shown on Figure 3-5. Construction of the embankment would require about 261,000 cubic yards of compacted fill (243,000 cubic yards of structural fill plus 18,000 cubic yards of foundation fill).

The basin would have an outlet structure constructed of reinforced concrete that would be designed to regulate the storage of water in the basin. The structure would have wing walls at its ends that provide a transition between the embankment fill and the outlet structure. The structure would measure approximately 100 feet from wing wall to wing wall. A wall would be constructed between the wing walls. The wall would be about 13 feet in height and would be used to mount four sluice gates, each measuring 6 feet by 6 feet. The sluice gates would be automatically operated and would normally be in the open position. The features of the basin are described in more detail in Section 3.5.4.

The North Basin would have a maximum storage capacity of approximately 680 acre-feet. Flows in excess of the storage capacity of the basin would flow over the outlet structure wall, which would act as a weir and as the principal spillway of the basin. The top of the weir would be at elevation 75 feet.

The basin would have an emergency spillway to convey excess water from very large storms. The crest of the emergency spillway would be at elevation 77.2 feet. The emergency spillway crest length would be approximately 250 feet. Assuming the basin is filled to capacity (elevation 75 feet) and the gates are closed, the outlet structure in combination with the emergency spillway would convey the 1,000-year, 24-hour storm while providing a minimum of 1.5 feet of freeboard between the calculated water surface elevation and the top of the embankment.

3.5.3 South Basin

The South Basin would have a surface area of approximately 348 acres. It would be located south of Pleasant Grove Creek and offset about 100 feet from the ordinary high water level of the creek or 70 feet from the top of bank, whichever provides the greatest offset from the top of the bank. To fill the basin, water would be diverted from Pleasant Grove Creek into a bypass channel excavated into the existing south bank floodplain. The bottom of the bypass channel would have a low-flow channel to assist with positive drainage through the system, and would convey water through the bypass channel to an inlet control structure, then through the basin and outlet structure and back into Pleasant Grove Creek.

An earthen embankment approximately 17,300 feet in length would be constructed by placing and compacting soil materials generated during excavation of the bypass channel. The embankment would follow the alignment shown on Figure 3-5. Construction of the embankment would require about 500,000 cubic yards of compacted fill (475,000 cubic yards of structural fill plus 25,000 cubic yards of foundation fill).

The South Basin would have both an inlet and an outlet structure. The structures would be constructed of reinforced concrete and would be designed to regulate the storage of water in the basin. Wing walls at the ends of the structures would provide a transition between the structures and the adjacent ground. The structures would measure approximately 35 feet from wing wall to wing wall. A wall would be constructed between the wing walls. On the inlet structure, the wall would be about 11 feet high; for the outlet structure the wall would be about 15 feet high. Three sluice gates, each measuring 6 feet by 6 feet, would be mounted on the inlet structure wall, and two sluice gates, each measuring 4 feet by 4 feet, would be mounted on the outlet structure wall. All of the gates would be automatically operated and would normally be in the open position. The features of the basin are described in more detail in Section 3.5.4.

When storing water, the basin would have a capacity of approximately 1,850 acre-feet. Flows in excess of the storage capacity of the basin would flow over the outlet structure wall, which would act as a weir and as the principal spillway of the basin. The top of both the inlet and outlet weirs would be at elevation 76.5 feet.

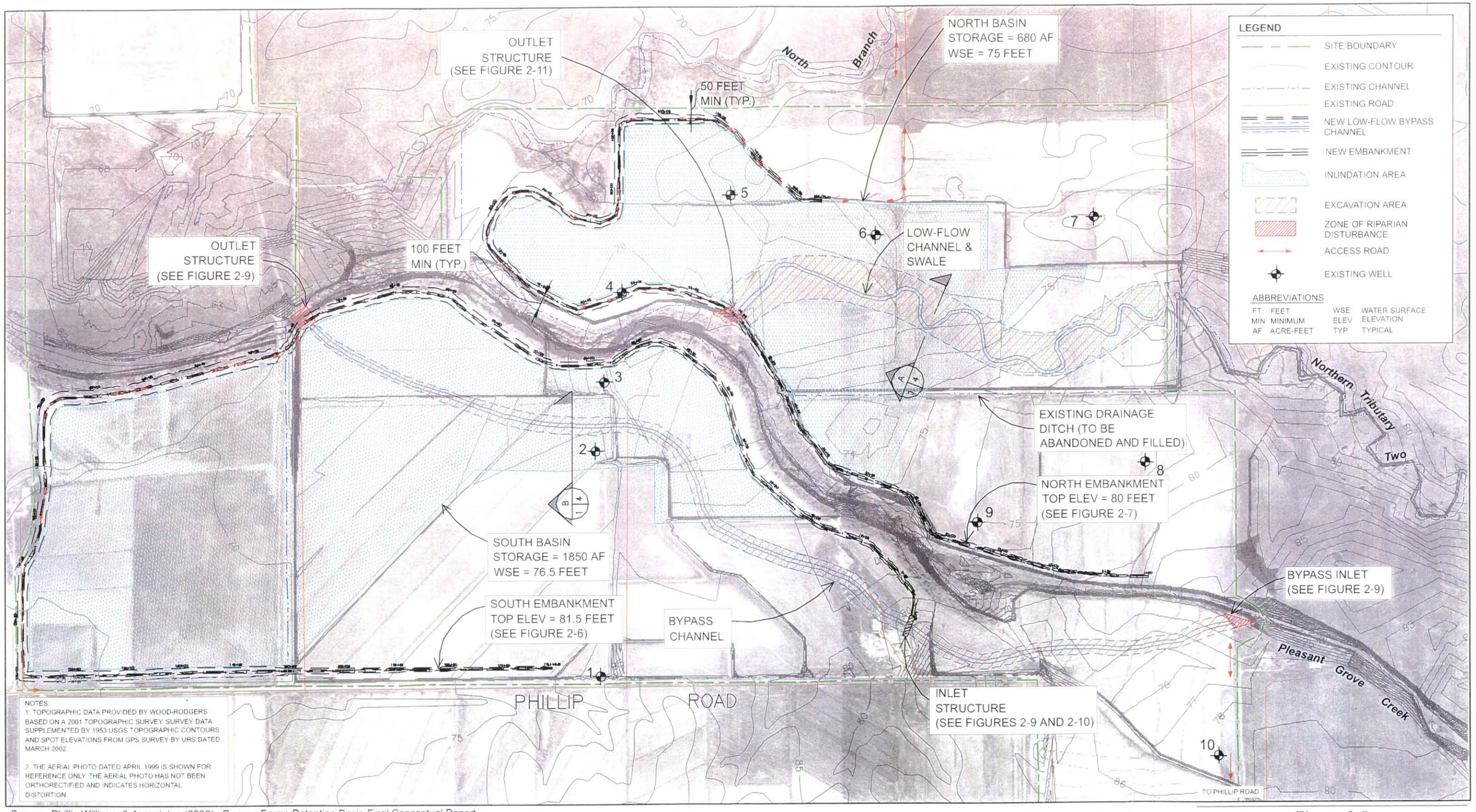
3.5.4 Typical Features

3.5.4.1 Basin Excavation

Excavation would be conducted along the alignment of the low-flow channel in the North Basin and along the alignment of the bypass channel in the South Basin. Scrapers and excavators would most likely perform the excavation. Excavated material would be used as fill to construct the embankments that will provide the water storage. Final grading along the low-flow and bypass channels and along the embankments would most likely be performed with graders and bulldozers.

3.5.4.2 Embankments

Embankments would be constructed to develop the storage volume of each basin and to provide freeboard above the calculated high water level. The embankments would likely have side slopes that vary from approximately 3H:1V (3 feet of horizontal distance for each 1 foot of elevation change) to approximately 5H:1V. The variable side slopes would provide a less uniform surface that would tend to be less distinct visually. The embankment top width would vary from a minimum of 12 feet to a maximum of about 20 feet. The variable top width would also provide a less uniform surface that would tend to be less distinct visually. The variable top width and side slopes would be designed to accommodate a gravel maintenance road, which could be developed as a portion of a future recreational trail system.



NOTES:
1. TOPOGRAPHIC DATA PROVIDED BY WOOD-RODGERS BASED ON A 2001 TOPOGRAPHIC SURVEY. SURVEY DATA SUPPLEMENTED BY 1953 USGS TOPOGRAPHIC CONTOURS AND SPOT ELEVATIONS FROM GPS SURVEY BY URS DATED MARCH 2002.

2. THE AERIAL PHOTO DATED APRIL 1999 IS SHOWN FOR REFERENCE ONLY. THE AERIAL PHOTO HAS NOT BEEN ORTHORECTIFIED AND INDICATES HORIZONTAL DISTORTION.

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

N

0 400 800

Scale (feet)

Figure 3-5
PLAN VIEW

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Roseville, California

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The embankments would vary in height from zero feet where the embankments tie into the existing ground surface to a maximum of about 20 feet near the outlet structures. On average, the South Basin embankment would be on the order of 10 feet high, and the North Basin embankment would be on the order of 8 feet high. Profiles of the embankments for the South and North basins are shown on Figures 3-6 and 3-7, respectively.

The embankments would be constructed of material excavated from the low-flow and bypass channels. Typical cross-sections for the low-flow and bypass channels are shown on Figure 3-8. Excavated material would be placed and compacted in 6- to 12-inch lifts, most likely using a sheepsfoot compactor. It is anticipated that a key trench may be required along the embankment where water is impounded but not along embankments that merely provide freeboard above the outlet structure weir elevations. After completion of final grading, all disturbed areas would be hydroseeded.

3.5.4.3 Inlet Structure

One inlet structure is proposed, as shown on Figures 3-9 and 3-10. The structure would be located approximately 2,800 feet from the eastern boundary of the project area on the bypass channel. The structure would regulate flows entering the South Basin. When water in Pleasant Grove Creek reaches an elevation of about 68 feet, water would flow through the bypass channel and towards the inlet structure.

The structure would have three gates with inverts at an elevation of 66 feet. Each gate would provide an opening measuring 6 feet by 6 feet. The gates would be made of steel and would have automatic actuators (electrically powered motors to open and close the gates). The gates would be mounted on a concrete wall measuring approximately 11 feet in height and 35 feet in length. The top of the wall would be at an elevation of 76.5 feet. The wall would terminate at wing walls that would provide a transition between the structure and the adjacent ground.

The inlet structure would have a concrete floor to facilitate the removal of debris and/or sediments. The finished surface of the floor would be at an elevation of about 66 feet. The upstream and downstream edges of the floor would have a cutoff wall and footing extending about 6 feet (elevation 60 feet) beneath the finished grade of the floor.

The gate would be in a normally open position to allow free exchange of water between Pleasant Grove Creek and the bypass channel. The signal to operate the gate would be transmitted from the City's flood warning operations center by telemetry. The inlet structure gates would automatically close when the basin reached its design capacity (elevation 76.5 feet) or when level sensors indicate that water levels in Pleasant Grove Creek are receding.

Specific operational parameters would be developed as part of the final design process and documented in an Operation and Maintenance Plan. At this time, it is thought that a stream gage would be installed at the Union Pacific Railroad Crossing of Pleasant Grove Creek about 1.75 miles west of the Sutter/Placer

County line. The purpose of the gage would be to signal the gates to close when water begins spilling out of the main channel. During final design, the City expects to work cooperatively with Sutter County, PCFCWCD, and Reclamation District 1001 to develop specific operational criteria that meets the project's objective to mitigate for the increase in runoff volume caused by development within the City of Roseville.

3.5.4.4 Outlet Structures

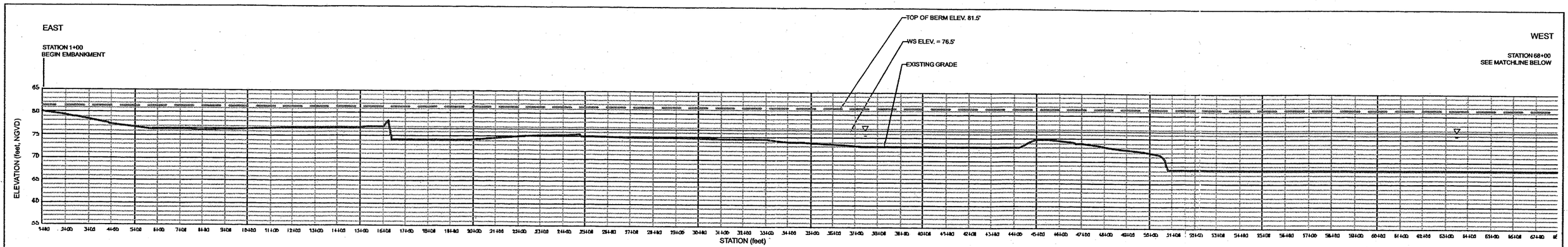
Two outlet structures are proposed: one for the North Basin and one for the South Basin. The structures would be located as shown on Figure 3-5, adjacent to and offset 100 feet from Pleasant Grove Creek. The structures would be oriented to direct flows back into open channels that would join with Pleasant Grove Creek. The open channels would be oriented so that the discharged flows gently merge with the flows in Pleasant Grove Creek. The design of the outlet structures is shown on Figures 3-9 and 3-11.

The outlet structure on the North Basin would have four gates. Each gate would provide an opening measuring 6 feet by 6 feet. The gates would be made of steel, have automatic actuators, and be mounted on a concrete wall measuring approximately 13 feet in height and 100 feet in length. For the North Basin, the top of the wall would be at an elevation of 75 feet. The wall would terminate at wing walls that would provide a transition between the structure and the adjacent ground.

The outlet structure on the South Basin would have two gates and be similar to the South Basin inlet structure. Each gate would provide an opening measuring 4 feet by 4 feet. The gates would be made of steel and would have automatic actuators. The gates would be mounted on a concrete wall measuring approximately 15 feet in height and 35 feet in length. For the South Basin, the top of the wall would be at an elevation of 76.5 feet. The wall would terminate at wing walls that would provide a transition between the structure and the adjacent ground.

Each outlet structure would have a concrete floor and wing walls at an elevation of 62 feet. The upstream and downstream edges of the floor would have a cutoff wall and footing extending beneath the finished grade of the floor about 6 feet (elevation 56 feet). On the downstream side of each outlet structure concrete thrust blocks would be poured integral to the floor. The thrust blocks would assist with energy dissipation during high-flow events. The energy dissipating section of the floor would be recessed approximately 4 feet below elevation 62 feet (about elevation 58 feet). The thrust blocks would be covered in soil and gravel to provide a more natural channel bottom that would transition to an open channel on the downstream side of the structure. On the upstream side of the structure, the floor would not be recessed but would have a low-flow channel formed into its surface. The low-flow channel would be approximately 1 foot deep.

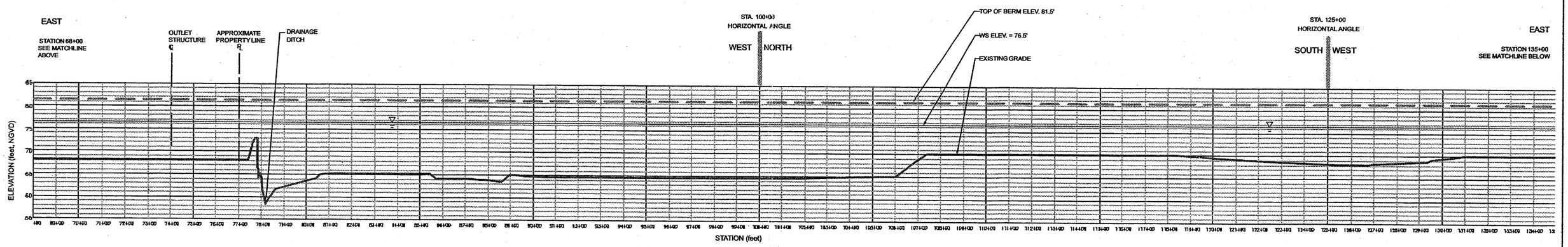
The signal to open or close the outlet structure gates of both basins would be transmitted from the City's flood warning operations center to the gate actuator by telemetry. The gate would normally be in a open



SOUTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'

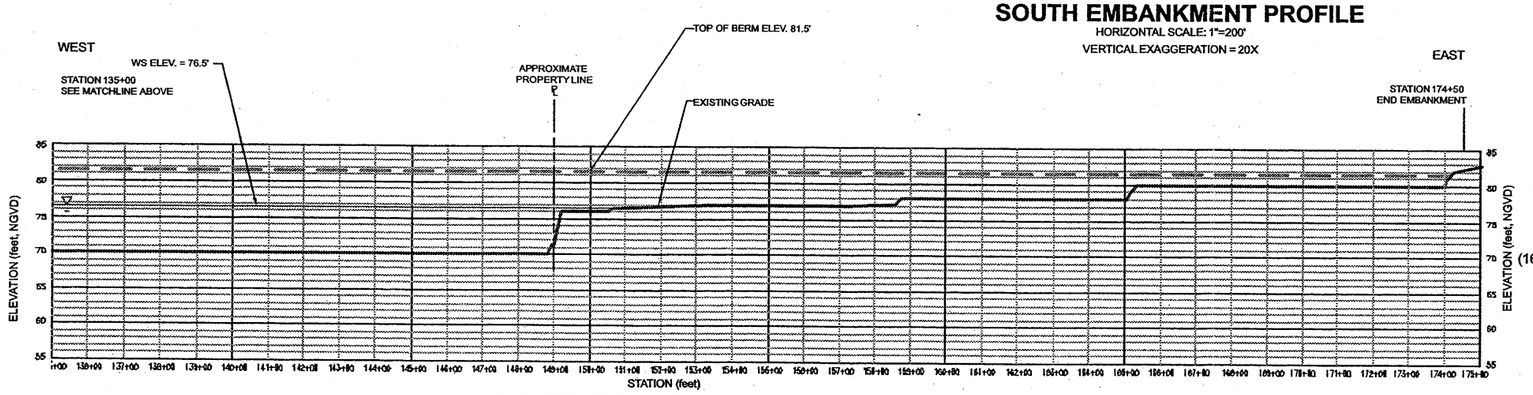
VERTICAL EXAGGERATION = 20X



SOUTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'

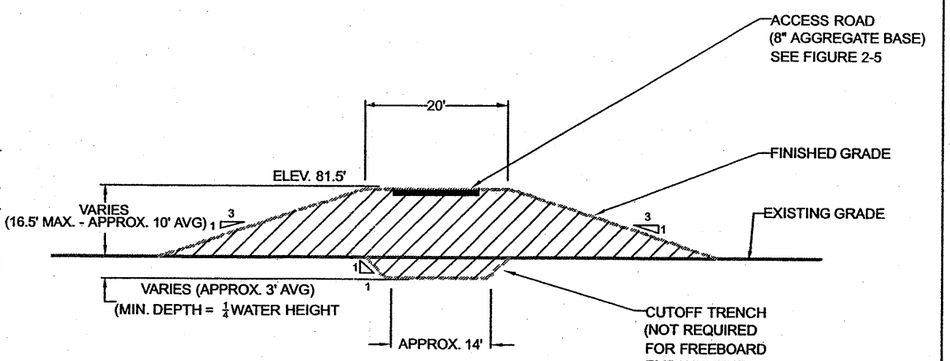
VERTICAL EXAGGERATION = 20X



SOUTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'

VERTICAL EXAGGERATION = 20X



TYPICAL SECTION SOUTH EMBANKMENT

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

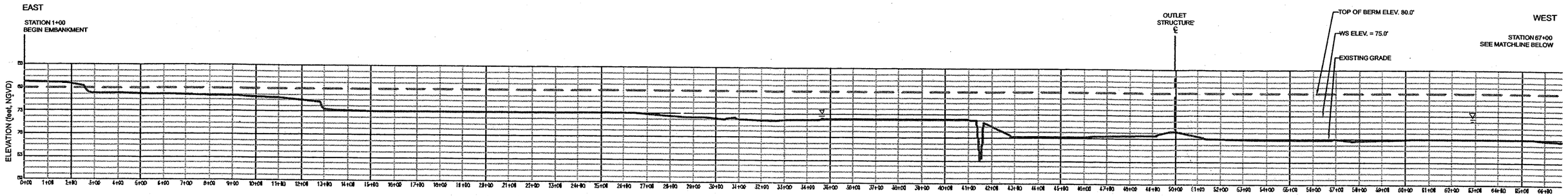
Figure 3-6
SOUTH EMBANKMENT PROFILE

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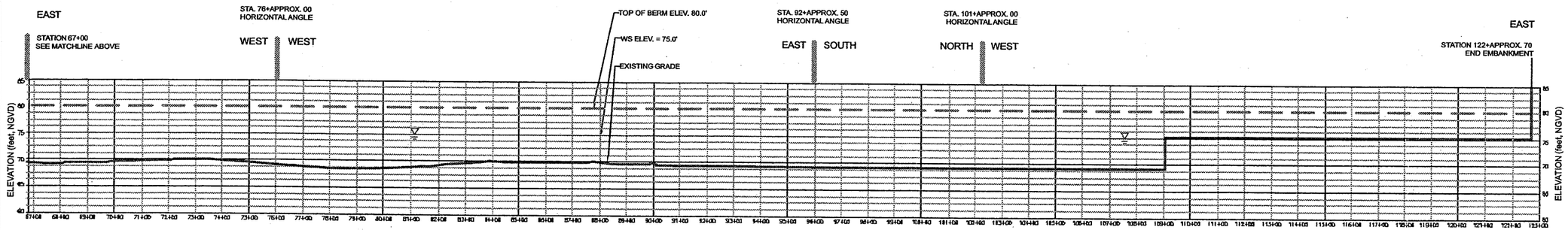
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STATION (feet)

NORTH EMBANKMENT PROFILE

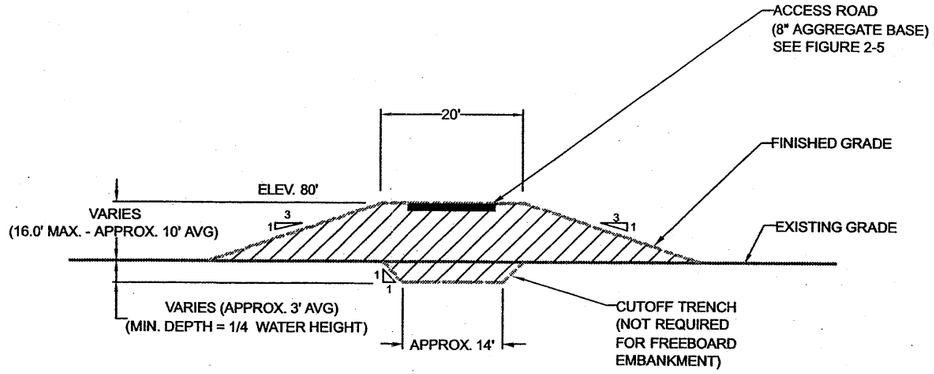
HORIZONTAL SCALE: 1"=200'
VERTICAL EXAGGERATION = 20X



STATION (feet)

NORTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'
VERTICAL EXAGGERATION = 20X



TYPICAL SECTION
NORTH EMBANKMENT

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

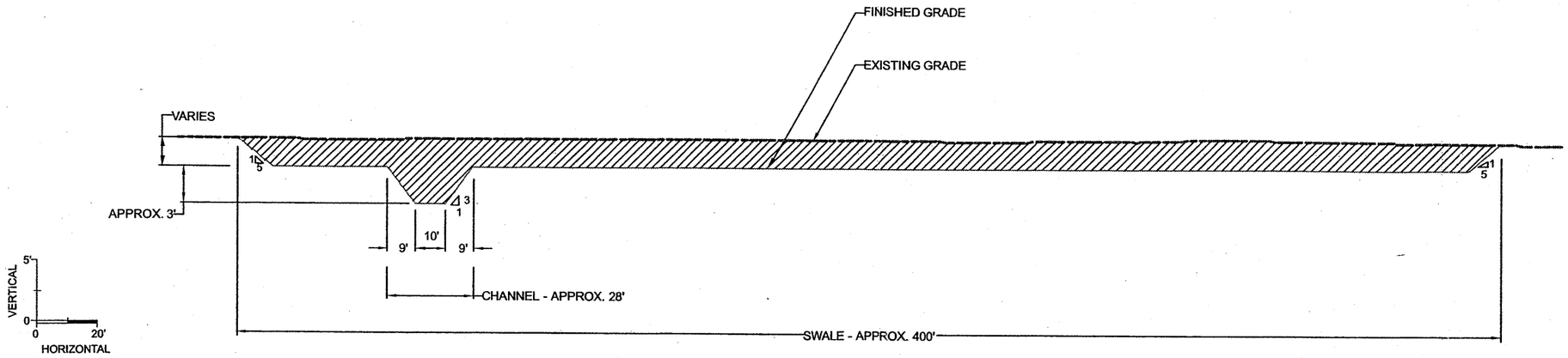
Figure 3-7
NORTH EMBANKMENT PROFILE

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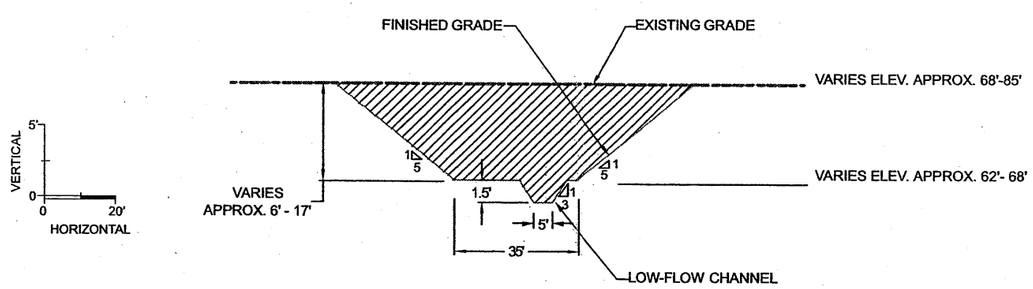
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NORTH BASIN
LOW-FLOW CHANNEL

A
1 | 4



SOUTH BASIN
BYPASS CHANNEL

B
1 | 4

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

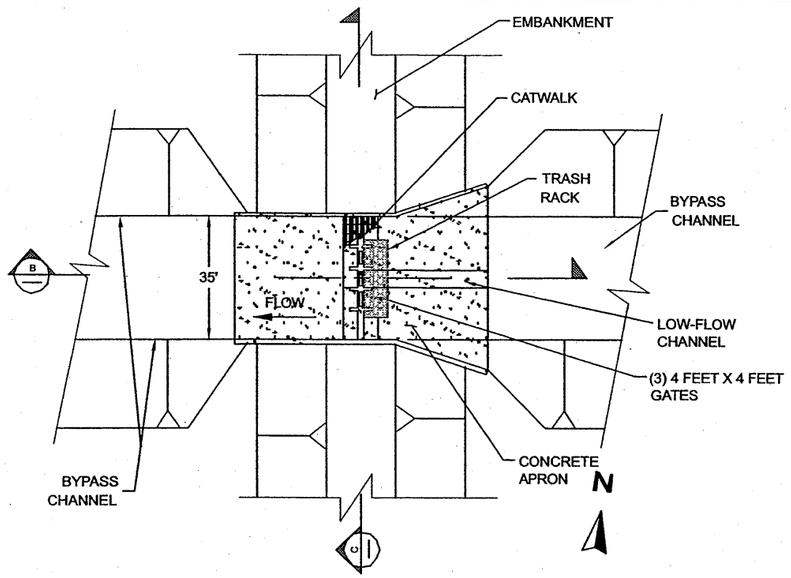
Figure 3-8
BASIN AND LOW-FLOW CHANNEL TYPICAL SECTIONS

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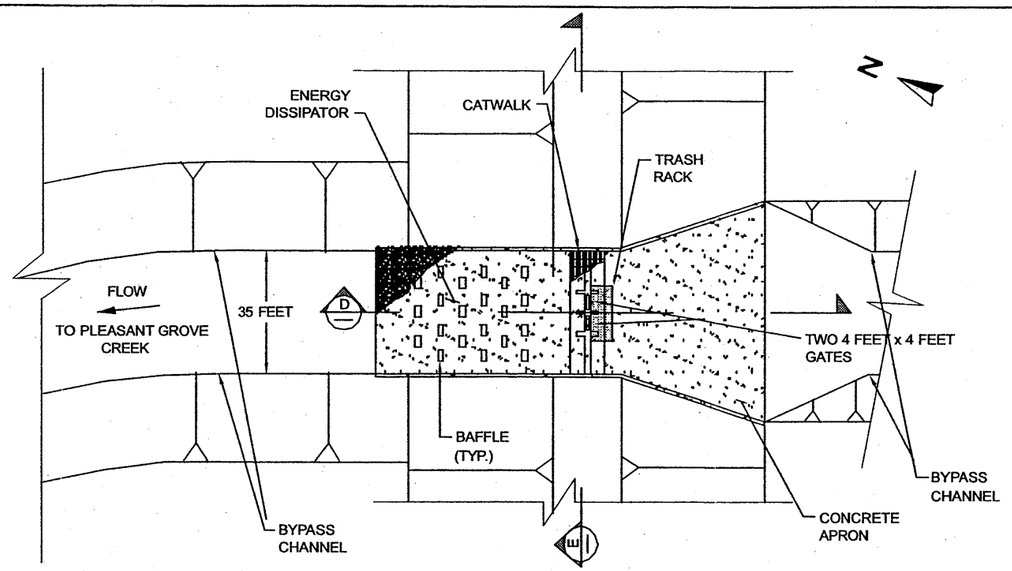
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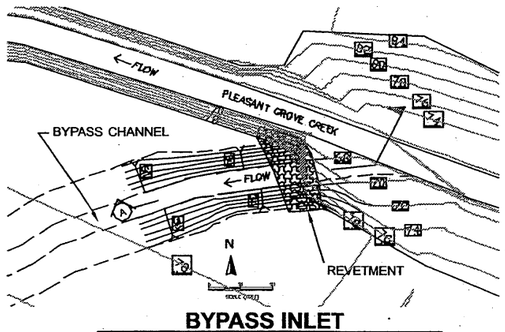
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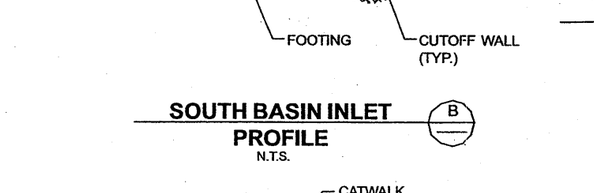
SOUTH BASIN INLET
PLAN
N.T.S.



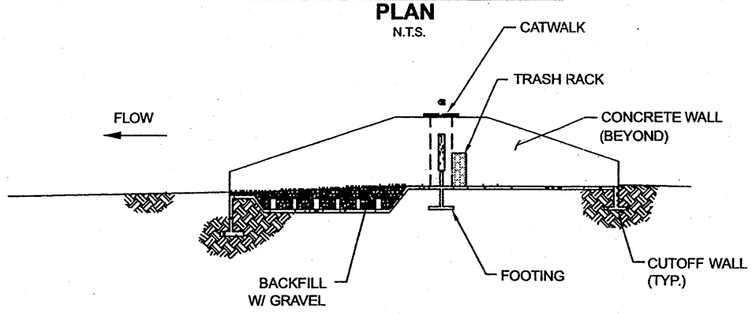
SOUTH BASIN OUTLET
PLAN
N.T.S.



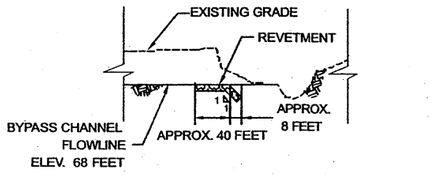
BYPASS INLET
PLAN
N.T.S.



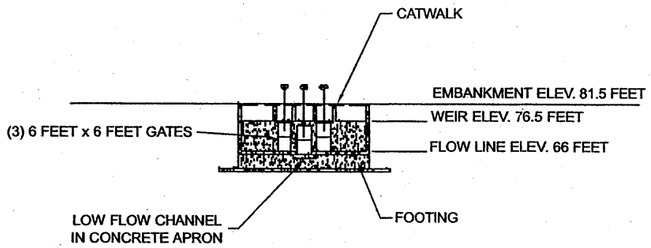
SOUTH BASIN INLET
PROFILE
N.T.S.



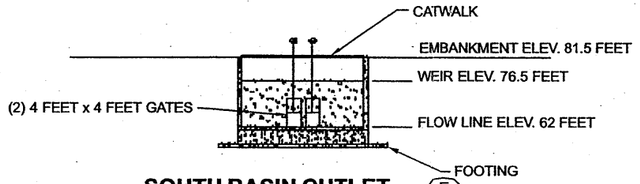
SOUTH BASIN OUTLET
PROFILE
N.T.S.



BYPASS INLET
PROFILE
N.T.S.



SOUTH BASIN INLET
SECTION
N.T.S.



SOUTH BASIN OUTLET
SECTION
N.T.S.

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

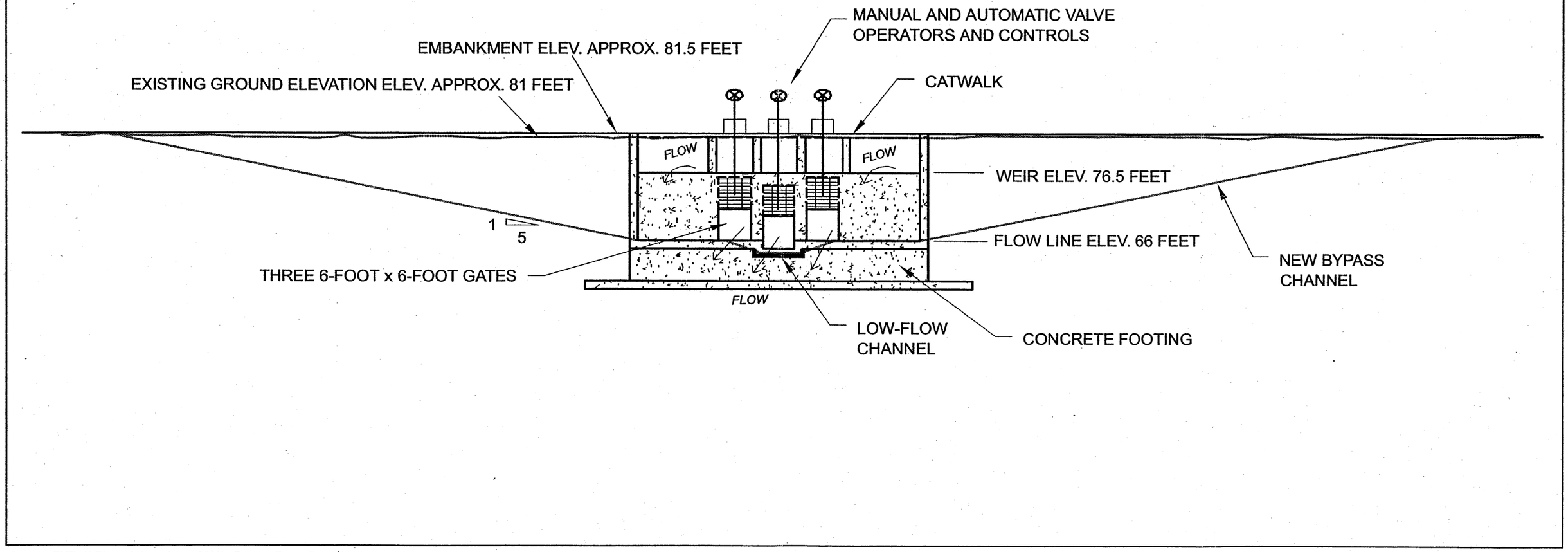
Figure 3-9
SOUTH BASIN
INLET AND OUTLET STRUCTURE

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Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

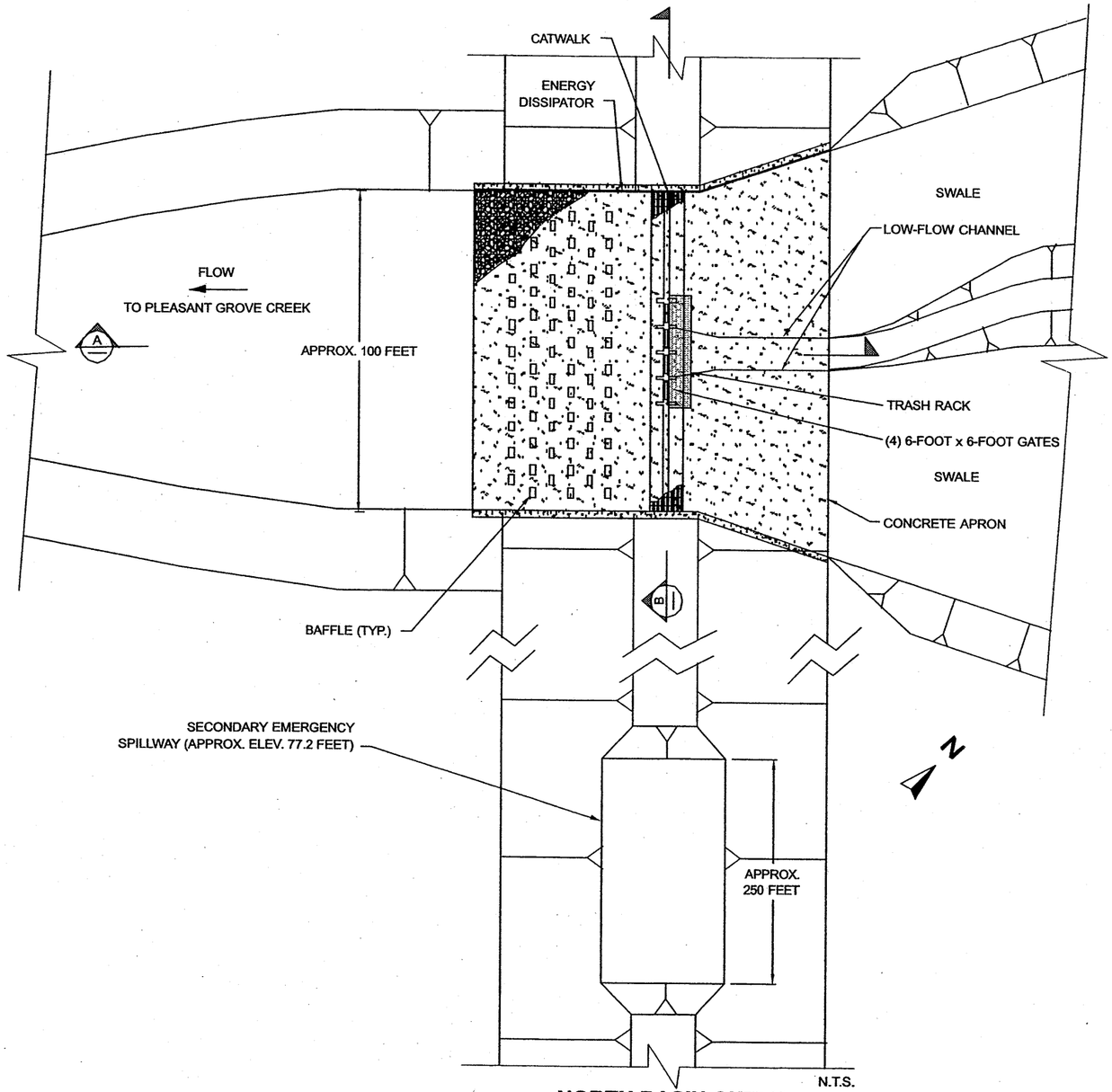
Figure 3-10
SOUTH BASIN INLET STRUCTURE ELEVATION VIEW

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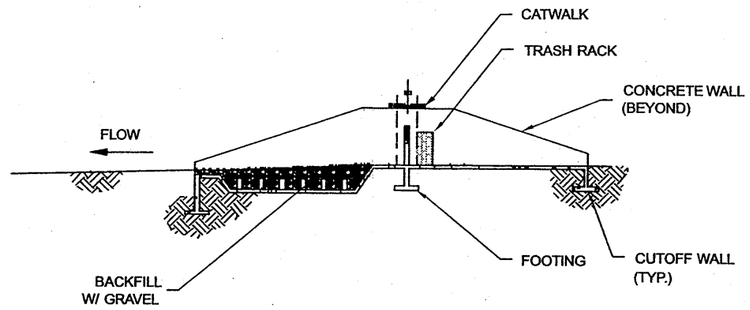
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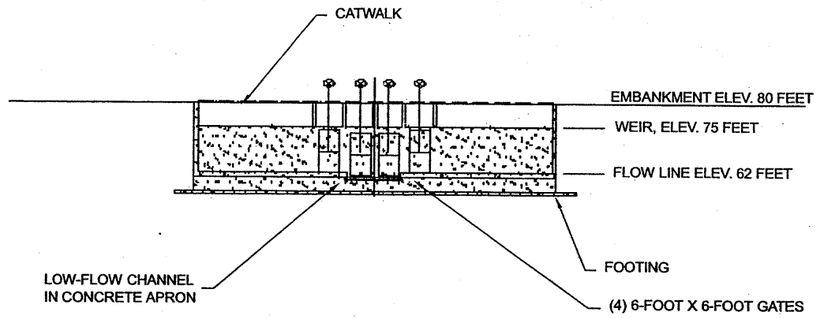


NORTH BASIN OUTLET PLAN



NORTH BASIN OUTLET A PROFILE

N.T.S.



NORTH BASIN OUTLET B SECTION

N.T.S.

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

Figure 3-11
NORTH BASIN OUTLET STRUCTURE

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position to allow free exchange of water between basins and Pleasant Grove Creek. During flood events, when the storage of water is needed, the gates would automatically close. The gates could then reopen if necessary to maintain sufficient freeboard in the basins. When floodwaters in Sutter County recede, the gates would be opened to allow the basins to drain completely by gravity.

3.5.4.5 Emergency Spillway

The conceptual design incorporates an emergency spillway for the North Basin. The emergency spillway would provide an additional spillway capacity such that the 24-hour, 1,000-year storm could pass through the basin while the outlet gates were closed and still maintain at least 1.5 feet of freeboard to the top of the embankment. The emergency spillway would begin to flow at an elevation of 77.2 feet. The spillway would be lined with grass. It would operate as a broad-crested weir measuring 250 feet in length. The spillway would discharge overland to Pleasant Grove Creek.

3.5.4.6 Low-Flow Channel

Both the North Basin and the South Basin would have low-flow channels to provide positive drainage through the basin. Typical sections of the bypass and low-flow channels are shown on Figure 3-8. On the North Basin, the low-flow channel would follow the approximate alignment of the historic natural channel. The low-flow channel would have a bottom width of about 10 feet and side slopes of 3H:1V; it would meander within the bottom of a wide (± 400-foot) swale. The swale would be excavated as a flat terrace approximately 3 to 6 feet below the existing ground surface as shown on Figure 3-8. The edges of the swale would be sloped at 5H:1V to tie into the existing ground surface.

For the South Basin, a bypass channel would be excavated beginning near the eastern boundary of the site on the southern bank of Pleasant Grove Creek to maximize the change in elevation across the site. The bypass would extend generally westward through the southern portion of the site to the southern basin inlet and through the basin to its outlet structure. The bypass channel would be roughly trapezoidal and have a bottom width of 35 feet and side slopes of 5H:1V that tie into the existing ground surface. A low-flow channel would gently meander in the bottom of the bypass channel. The low-flow channel would also be roughly trapezoidal, have a bottom width of about 5 feet and side slopes of 3H:1V that tie into the bottom of the bypass channel. The intent of the low-flow channel would be to reduce the potential for fish to become stranded in the bypass as waters drained from the bypass channel into Pleasant Grove Creek.

The entrance to the bypass channel at Pleasant Grove Creek would be armored to prevent erosion and slope failure. This would be accomplished with a revetment of interlocking concrete blocks. The revetment would be anchored in a toe trench located along its upstream edge. The toe trench would extend down to an elevation approximating the elevation of the flow line in Pleasant Grove Creek. After installation, the interlocking concrete blocks would be covered with soil and hydroseeded.

During the final design process, the geometry (width, depth and longitudinal slope) of the low-flow channel dimensions would be refined, to the extent practicable, so that the channel would convey sediments through the basin (the amount of sediment entering the basin would equal the amount of sediment leaving the basin).

After completion of final grading, all disturbed areas would be hydroseeded.

3.5.4.7 Access Roads

Access roadways would provide maintenance vehicle and fire apparatus access between public roads and the inlet and outlet structures. The roadways would have an aggregate surface. The roadway section would consist of approximately 8 inches of compacted aggregate base rock placed on a subgrade of compacted earth. The access roads would extend along the top of the embankments as shown on Figure 3-5.

The North Basin access road, when needed, would be improved along a 1,500-foot-long portion extending from Sunset Boulevard West, south along an existing easement and into the Reason Farms site. It would then continue south along an existing levee, finally tying into the road planned for the top of the northern embankment. The road would be approximately 20 to 24 feet wide. The surface of the road would consist of a suitable aggregate material. The North Basin access road is shown on Figure 3-12.

3.5.5 Environmental Protection Measures

The project was designed with the goal of using the existing topography to minimize disruption of the riparian zones and other non-agricultural features of the site. The use of existing topography would also minimize the amount of wetland impacts and reduction of wildlife habitat values. In addition, the project was designed to accommodate opportunities for other uses at the site that could be constructed in the future by the City or others, as separate projects. These opportunities include habitat enhancement, restoration, and recreation. Opportunities for future use are mentioned briefly in the following sections and are described in more detail in Section 3.6; however, they are not formally part of this project. The proposed project would protect and restore riparian habitats, create seasonal wetlands and waterfowl habitat, protect oak woodlands, and create regional habitat linkages, as detailed in the following sections. It would not eliminate the existing freshwater marsh or vernal pools.

3.5.5.1 Riparian Habitat/Freshwater Marsh

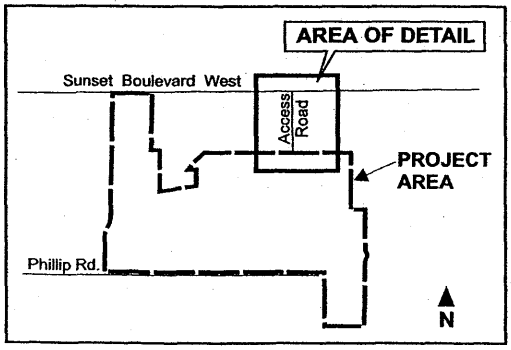
A corridor of high-quality riparian forest and freshwater marsh borders Pleasant Grove Creek within the project area. The proposed project would not disturb these habitats except for small encroachments at the inlet and outlet structures associated with the retention basins. The inlet structure for the bypass channel would be located in low-density riparian forest at the eastern boundary of the project site. The outlet structures would join Pleasant Grove Creek downstream of the highest quality riparian forest in the



Source: Placer County, 2001. Georeferenced aerial photography.

LEGEND

- Project Area
- Access Road



N

300 0 300 600

Scale (feet)

Figure 3-12
ACCESS ROAD

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structures would join Pleasant Grove Creek downstream of the highest quality riparian forest in the central part of the project site. To further protect riparian habitat along Pleasant Grove Creek, embankment structures would be set back approximately 100 feet from the ordinary high water mark or 70 feet from the top of the bank, whichever provides the greater distance from the top of the bank. Although not proposed as part of the project, within this setback area there would be an opportunity for restoration of riparian habitat.

The design of the North and South basins would also result in the creation of riparian wetland habitat. New riparian wetlands would be created along the bypass channel in the South Basin and Northern Tributary Two would be restored to a more natural and sinuous stream course with an adjacent floodplain. Northern Tributary Two is currently channelized with little riparian vegetation. The new low-flow channel would be longer and the floodplain would be expanded, which would increase the area of the riparian wetlands.

A 9-acre freshwater marsh is located between the North Branch of Pleasant Grove Creek and the North Basin embankment, within the project site. Construction of the North Basin would avoid and retain this freshwater marsh.

3.5.5.2 Vernal Pools

Approximately 105 acres of low-density vernal pools and associated grasslands currently exist in the northwestern section of the project site. The project would not disturb that section of the project site, which could, however, be sold in the future. There is the potential in the future for enhancement of the vernal pools and grassland in the northwest portion of the site by others.

3.5.5.3 Winter Waterfowl Habitat

The proposed North and South basins would be constructed in areas where rice is currently cultivated. The rice fields could be converted to seasonal wetlands after the construction of the retention basins. The constructed basins and adjacent fields would continue to seasonally pond water and provide some winter waterfowl habitat due to the heavy clay content of the soils and retention of normal stormwater runoff. Therefore, some degree of winter waterfowl habitat will be retained as part of the project.

3.5.5.4 Oak Woodlands

Valley oaks, cottonwoods, and willows dominate the riparian forest corridor. Protection of the riparian forest, as described above, would also protect the associated oak woodlands. Trees that are removed as a result of the bypass channel and inlet/outlet structures would be replaced on site according to the City of Roseville Tree Ordinance. In addition, oaks would colonize the area between the existing levee and the new embankment if that area is no longer under cultivation.

3.5.5.5 Habitat Linkages

It is likely that wildlife currently use the habitats at the project area to disperse throughout the regional landscape. The proposed project would retain the existing open space used for retention. No urban or residential development would occur as part of the project in these areas. Protection of these project area habitats would enhance the link between existing open space and vernal pool complexes east and west of the site.

The possibility exists for future projects that could enhance or restore natural habitat to several other parts of the project site, especially native grasslands and/or vernal pools in the far northwest and southeast corners and along the Pleasant Grove Creek riparian corridor in the setback area between the proposed embankment and the top of the stream bank.

3.5.6 Maintenance

The inlet and outlet structures and the North and South basins would be maintained facilities. Maintenance activities for the inlet and outlet structures would include periodic inspection of the structures and gates, operation of the gates, lubrication of the gates and gate actuators, testing of sensors and switches, and periodic installation of replacement parts. Maintenance of the basins would include periodic inspections of the embankments, periodic inspections of the low-flow channels, the bypass and swale, and periodic inspection of the main branch of Pleasant Grove Creek through the project area. The objectives of these periodic inspections would be to assess the integrity and condition of the embankments, low-flow channels, bypass channel, and swale, and to identify and implement repairs as needed. Maintenance activities could also include removal of accumulated sediments near inlet and outlet structures or from within the basins themselves, if the sediment accumulation was to interfere with the operation or flow and storage capacity of the inlet or outlet structures or the basins.

Although it is the intent of the design that removal of vegetation would not be necessary, on occasion, depending upon the plant communities that establish within the low-flow channels and basin bottom, it may be necessary and desirable to remove vegetation. Conditions that would warrant removal of vegetation could include, but would not necessarily be limited to, establishment of non-native plants (such as arundo) that could diminish riparian and wetland habitat values or prevent the conveyance of water through the basins, development of conditions that could be considered a fire hazard to adjacent properties, or intrusion of vegetation on access roads or trails.

3.5.7 Construction

3.5.7.1 Construction Methods

This section discusses basic construction methods for the retention basins and their structural components. Construction of the North and South basins would be accomplished primarily through

excavation and fill placement. Material excavated from the low-flow/bypass channels would be used as fill material for construction of the embankments. In addition to grading activities, other construction activities for project implementation would include construction of concrete structures, revegetation, and sediment and erosion control.

Prior to commencing construction, sensitive habitat areas such as creeks, wetlands, and vernal pools both within and adjacent to the work area would be enclosed in construction or silt fences to prohibit access. The hazardous materials on site would be contained and removed in accordance with applicable regulations for the transport and disposal of hazardous materials on public thoroughfares by licensed contractors. The facility would be constructed to conform to the requirements of the Department of Safety of Dams (DSOD). Compliance with DSOD requirements is intended to protect the health and safety of the public by designing and constructing the facility in a manner that is intended to prevent catastrophic failure of any of the system's main components (embankments, outlet structures, and spillways). To reduce the potential for erosion and sedimentation of the Pleasant Grove Creek during construction, a Notice of Intent would be filed with the State Water Resources Control Board (SWRCB) prior to construction indicating that the project intends to comply with the state general construction activity National Pollution Discharge Elimination System (NPDES) permit. This would include preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that would contain Best Management Practices (BMPs) designed to reduce the potential for increased erosion and transport of sediments and other pollutants to Pleasant Grove Creek. Appropriate BMPs may include "good housekeeping" measures, designated construction staging areas, fuel spill containment, erosion and silt fencing and other measures. Construction methods for the major project elements are discussed in more detail below.

Basin Excavation

The main excavation activity for construction of the North and South basins would be excavation of the low-flow and bypass channels. Excavation would be conducted along the alignment of the low-flow channel in the North Basin and along the alignment of the bypass channel in the South Basin. Prior to excavating, the area of excavation would be cleared of existing vegetation. Topsoil may be salvaged and stockpiled for later use.

Given the scale of the excavation (approximately 679,000 cubic yards), mass grading would likely be performed using scrapers or other large grading equipment. The scrapers would also transport excavated material to the new embankment alignment for use as fill material. Fine grading along the low-flow and bypass channels, and as needed at other location within the basins, would most likely be performed with graders and bulldozers. Water trucks would be used for dust control during excavation.

Limited excavation would also be performed adjacent to Pleasant Grove Creek to connect the inlet and outlet structures with the main creek channel. This excavation would be performed during the summer low-flow period to minimize impacts to the creek. If required to complete the work near Pleasant Grove Creek, check dams could be installed, upstream and downstream of the work area, and submersible

pumps used to direct water past the work area. Sediment control measures for work within and near the creek are discussed below.

Embankments

Embankments would be constructed using material excavated from the low-flow and bypass channels. Prior to fill placement, the subgrade of the embankments would be prepared by clearing the area of vegetation and removing and stockpiling topsoil. In addition, where a key trench is required, the subgrade would be excavated to the required dimensions, the bottom of the trench would be compacted, and excavated material placed back into the trench and compacted in lifts. Due to the smaller dimensions of the key trench, excavation of the trench would likely be performed using excavators or small-scale scrapers. Compaction would be performed using a sheepsfoot compactor or other mechanical compaction equipment.

For embankment construction, excavated material would be placed in 6- to 12-inch lifts, using either scrapers or bulldozers. Each lift of fill would be compacted using a sheepsfoot compactor. Water trucks would be used for dust control and for managing the soil moisture content during backfill and compaction activities.

Inlet and Outlet Structures

The inlet and outlet structures would be cast-in-place reinforced concrete structures. The outlet structures would have their foundations embedded in undisturbed soil. The structures would be backfilled to create a firm and water-resistant seal with the adjacent embankment. To ensure proper lateral support, the embankments would likely be constructed first at outlet structure locations, and then excavated to allow construction of the structures.

The reinforced concrete structures would be formed and poured. Bottom slabs and walls could be poured in contact with adjacent soil. Preparation work prior to concrete pouring would include constructing forms and assembling reinforcing steel. It is likely that forming and pouring concrete would happen in sequential stages beginning with foundations and ending with above-ground walls. The prefabricated sluice gates would be set and cast in the concrete walls.

Access Roads

Access roadways would be constructed along the top of the embankments by placing and compacting aggregate base rock. Base rock would be delivered to the site in dump trucks and most likely be spread by graders and bulldozers and compacted with mechanical compaction equipment. The compacted aggregate base rock would be placed on a subgrade of compacted earth.

Improvements to the north access road, including the portion extending from Sunset Boulevard West south to the site, would include level grading along the length of the access road, entailing a minor amount of earthwork along the majority of the road alignment, with the exception of one area where there is an existing water crossing of the North Branch of Pleasant Grove Creek. The water crossing would be designed to conform to the requirements of Placer County and the City of Roseville. In this area, a series of culverts would be placed underneath earth material imported from the bypass channel excavation. The amount of fill would be minimized by placing an earth reinforcing fabric between the imported earth and the aggregate road surface. In addition to the clearing and grubbing necessary to level the existing ground, one willow tree, one valley oak and several bushes along the proposed road alignment would be removed.

Erosion and Sediment Control

The City would file a Notice of Intent with the State Water Resource Control Board indicating that the project intends to comply with the State general construction activity NPDES permit. Erosion- and sediment-control measures would be implemented throughout construction. In general, erosion (source) control would be emphasized over the trapping of sediment once erosion had occurred.

As grading activities are completed, disturbed areas would be hydroseeded for erosion control. Additional measures, such as straw mulch or biodegradable erosion control fabric, may be applied to embankments slopes and along low-flow/bypass channels, which may be more susceptible to erosion.

No construction equipment would be allowed within Pleasant Grove Creek (below top of bank), except as needed for channel excavation at inlet/outlet structures. Silt fences would be installed at the top of creek banks within the construction area to trap sediment, as well as to discourage entry by personnel and equipment. Limited excavation would be performed in Pleasant Grove Creek to excavate connector channels to inlet and outlet structures. Check dams, constructed of drain rock or other suitable material, may be installed within Pleasant Grove Creek for sediment trapping, assuming creek flows are minimal. Depending on creek flow and groundwater conditions, floating silt curtains may also be used to enclose the excavation area.

Depending on flow conditions, temporary check dams or sediment basins may also be installed in the new low-flow and/or bypass channels to reduce flow velocities and trap sediment.

3.5.7.2 Construction Equipment and Workforce

The types of construction equipment needed for performance of the work are described in Section 3.7.1. The total number of equipment and personnel on the site at one time would depend upon the construction schedule and phasing. The largest construction workforce would be on site if both basins were constructed in one construction season. For this scenario, it is assumed that channel excavation,

embankment construction and inlet/outlet structure installation would be performed concurrently, at different locations on the site.

For grading activities, up to approximately 45 to 50 workers may be on site, comprised of the superintendent, foremen, inspectors, equipment operators, grade checkers and laborers. Up to 30 to 35 pieces of heavy construction equipment may be on site at one time. The number and types of grading equipment at the peak of grading activities is estimated as follows: 10 to 15 scrapers, 4 compactors, 6 bulldozers, 2 excavators, 2 graders, and 4 water trucks. Construction would be limited to the daytime hours of 7 A.M. to 7 P.M., Monday through Friday and 8 A.M. to 8 P.M. Saturday and Sunday in accordance with the City of Roseville's Noise Ordinance.

For construction of concrete structures, it is assumed that the structures would be built one at a time. An additional 15 workers may be on site for structure installation, including a foreman, laborers, electricians, carpenters, inspectors, truck drivers, and equipment operators. Heavy equipment for construction of the structures would include concrete mixers, trucks for materials delivery (forms, reinforcing steel, gates, etc.) and lifts or other equipment for offloading and storing materials. The highest level of traffic would likely occur during concrete pours, when approximately 10 to 15 concrete mixers per day may be delivering concrete to the site.

If the retention basins were constructed in one phase, construction traffic to the South Basin would travel along Baseline Road, Fiddyment Road, and then Phillip Road to the southern site entrance. If the retention basins were constructed in two phases, construction traffic to the South Basin would occur along the route described above. Construction traffic to the North Basin would primarily occur along Fiddyment Road, Sunset Boulevard West, and then along an existing access easement that extends from Sunset Boulevard West to the project site. Construction equipment would be stored during the construction period within the project area in construction staging yards. These construction staging yards would also include contractor parking facilities. Construction staging areas would most likely be located in close proximity to existing roads, but in any case, would avoid all sensitive habitat areas described above.

3.5.7.3 Construction Phasing

The project would likely be constructed in two phases. If constructed in one phase, all work would be accomplished as a single construction project, with most if not all work completed in a single construction season. If constructed in two phases, each basin would be constructed as an individual project. In the two-phase scenario, the first phase would be the South Basin, and the second phase would be the North Basin. Phases 1 and 2 could be constructed concurrently by separate contractors, or could be separated in time by one or more construction seasons, depending upon available funding.

The general sequence of construction would be deconstruction of existing facilities, channel excavation, embankment construction and inlet/outlet structure installation; however, these three activities could be

performed concurrently at different locations on the site. If construction of both basins were phased over more than one season, temporary drainage control measures would be implemented to ensure proper drainage on and through the sites during storm events.

3.6 OPPORTUNITIES FOR FUTURE USES

The project area would be managed by the City of Roseville as public open space and would accommodate opportunities for other uses at the site that could be constructed in the future by the City or others as separate projects. The opportunities, although discussed herein, are not part of this project. These include habitat enhancement and restoration projects, recreation through the development of recreational trails, and potentially a portion of a future Placer Parkway. These opportunities are discussed in the following sections.

3.6.1 Habitat Enhancement and Restoration

Areas within the project site could be subjected to habitat enhancement and restoration, likely by the City or others seeking to provide mitigation for adverse impacts to biological resources associated with other development projects. Candidate areas include enhancement of the riparian corridor along Pleasant Grove Creek, enhancement of the vernal pools and grassland in the northwest portion of the site, creation of seasonal wetlands within the basin areas or outside of them, and creation of vernal pools outside of the basin areas where conditions allow.

3.6.2 Opportunity for Future Passive Recreation and Trailways

To protect the remaining riparian vegetation, wetland areas and the stream environment of Pleasant Grove Creek within the project area, a setback of 100 feet would be established from the ordinary high water mark of the creek (or 70 feet from the top of bank, whichever provides the greatest offset from the top of bank) as part of the proposed project. The development of the riparian buffer could provide passive recreation opportunities such as nature watching and bird watching.

Passive recreational trails could be integrated into the embankments created from the basin excavation. The trails would conform to City standards, and could be designed in a slightly undulating form, varying in elevation following the top of the embankment grade to approximately –10 feet vertically below, in some locations. Depending upon its use (pedestrian or bike), the trail width would vary. For pedestrian trails, the width would vary from 4 to 8 feet depending on available flat area adjacent to the trail alignment. For bike use, the trail would conform to the City's standard 10-foot-wide paved section with 2-foot shoulders that could also accommodate and support fire apparatus. In some cases the trail could be the same path as the maintenance vehicle access road. Pedestrian paths could have either an aggregate base (along the maintenance vehicle access road), or a compacted soil surface covered with a bark or other natural ground covers. The trails would utilize existing access areas where feasible. Areas adjacent

to the trail would be hydroseeded to provide visual interest and erosion control, reducing the amount of maintenance needed over the life of the project.

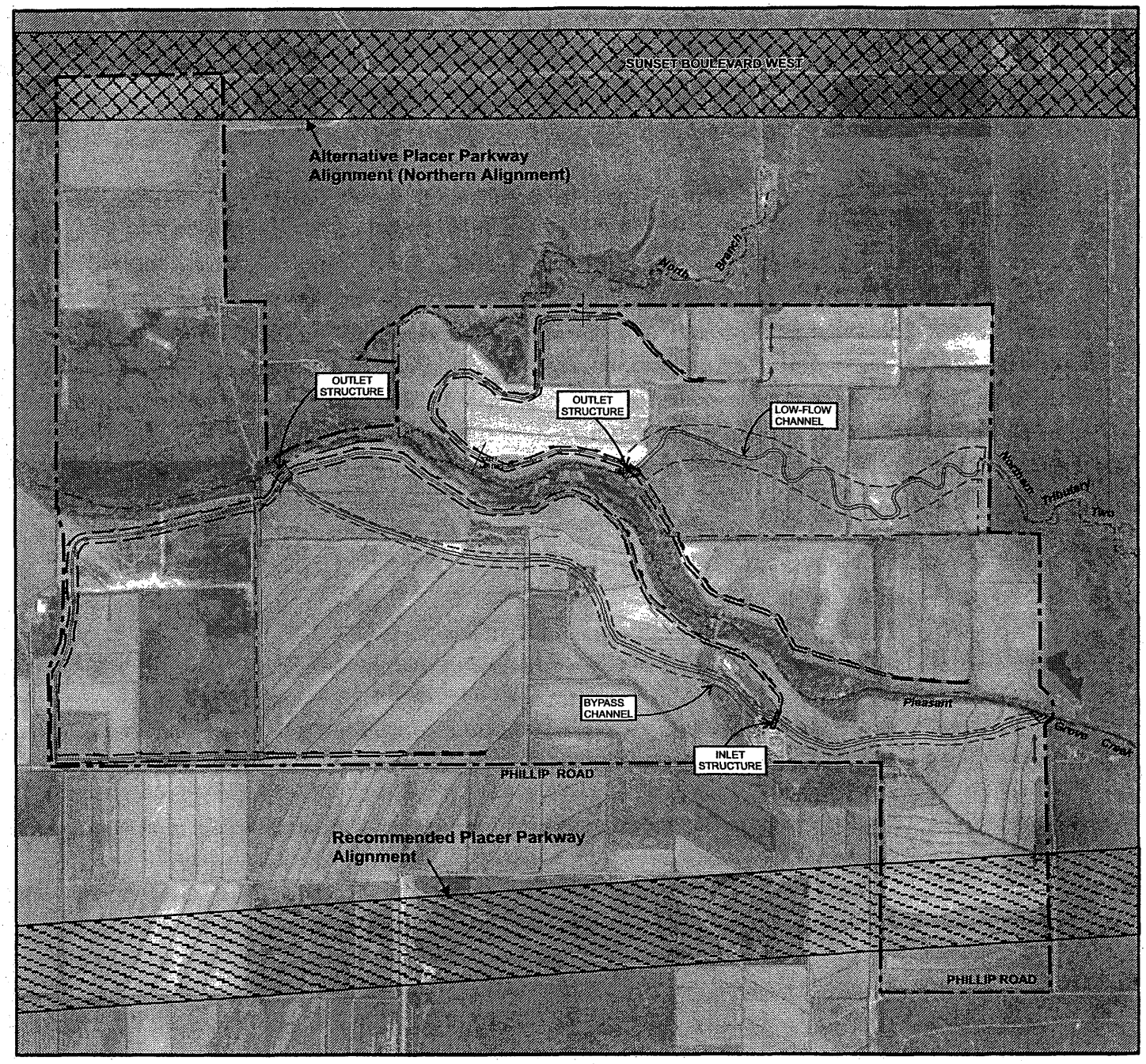
The placement of recreational trails could follow the embankment, providing some access opportunities directly adjacent to the creek. The trail could be placed to avoid sensitive habitats and to limit interference with restoration efforts. Trails should be limited along the north side of Pleasant Grove Creek to maintain existing habitat values by reducing disturbance of breeding and foraging wildlife. Rest areas with visual interest could be created at key overlooks along the creek. Potential overlook locations have been chosen based on scenic attributes along the riparian corridor. In some cases these viewpoint/ rest areas would be adjacent to the outlet structures and could be integrated into the final design. The location of the trail and viewpoints are flexible and can be adjusted to provide adequate separation from important habitat areas. The final location of the trail would be determined based on existing conditions, community desires and cost constraints specific to the project. Establishing goals for implementing the recreation trail and placement guidelines would be encouraged in the future.

3.6.3 Other Uses for Basin Areas

The project area and the proposed design provide an opportunity to protect an important reach of Pleasant Grove Creek. Pleasant Grove Creek and adjacent wetland and upland habitats are important for several listed species, including vernal pool fairy shrimp and Swainson's hawk. The Placer Legacy Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) have identified vernal pool complexes and riparian habitats, on and in the vicinity of the site, as important resources. The conceptual design would accommodate linkages between existing habitats that are fragmented and isolated by intensive cultivation of the Reason Farms site and therefore promote the goals of the Placer Legacy HCP/NCCP.

The Reason Farms site and the proposed design also provide an opportunity to accommodate Placer Parkway, a proposed transportation facility that would connect SR 65 in the Lincoln/Roseville/Rocklin area to SR 70/99 in Sutter County and the Sacramento International Airport (DKS Associates, 2001). Several conceptual alignments have been preliminarily identified (Figure 3-13). The northern alignment borders the northernmost portion of the site along Sunset Boulevard West. The preferred alignment traverses the site near the southeastern boundary of the project area. The design of the retention basin could accommodate the development of either of these alignments of Placer Parkway. The environmental assessment for the Placer Parkway project will evaluate the effects of its proposed drainage/runoff and other environmental impacts of the parkway.

Although it is unlikely that farming would continue at the site, it is possible that adjacent owners with existing farming operations may consider portions of the site to be viable for rice farming or grazing, as an extension of their existing operations. It is also possible that none of the above-described opportunities for future uses would occur. The retention basin site could remain fallow or be managed as open space by the City of Roseville. Portions of the site not used for retention could be sold by the City to adjacent landowners or others for conservation/mitigation, agricultural or development interests.



LEGEND

- Recommended Placer Parkway Alignment for Programming Purposes
- Alternative Placer Parkway Alignment (Northern Alignment)
- Site Boundary
- Existing Channel
- Existing Road
- New Low-Flow/Bypass Channel
- New Embankment
- Intake And Outfall Structure Area of Disturbance (Permanent and Temporary)
- Access Road

N

0 800 1600 3200

Scale (feet)

Figure 3-13
POTENTIAL PLACER PARKWAY ALIGNMENTS

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

URS PWA

10/14/02 vsa \28065805\F3-13_pkway align.cdr

3.7 EXISTING FACILITIES

The Reason Farms site contains a variety of existing facilities, mainly related to agriculture. These facilities, including buildings, fuel storage tanks and fencing would be removed and debris would be hauled offsite to an appropriate landfill. There are also approximately 12 existing groundwater wells on the site. These wells would be capped and left in operable condition.

3.8 ESTIMATED COSTS

The estimated total cost of the project ranges from $20,350,000 to $28,125,000 in 2002 dollars. This includes engineering design and construction, environmental clearance, permitting, mitigation implementation and monitoring, property acquisition, provision for a future maintenance bridge if required, and ongoing maintenance and operation expenses. Demolition of existing structures on the site, and remediation and/or disposal of contaminated soils, if any, could be negotiated as part of the property purchase. Because the design is at the conceptual stage, several assumptions were made regarding components of the project that would be designed in subsequent design phases. A contingency has been included to cover the construction costs for project components that may not be detailed at this stage of the project. This estimate does not include costs associated with implementing opportunities for other uses such as enhanced restoration planting, recreational trails, etc.

3.9 REQUIRED APPROVALS AND PERMITS

As part of the implementation of the proposed project, several permits and approvals would be necessary prior to construction. These permits and approvals are listed below.

- U.S. Army Corps of Engineers Permit for Fill In Waters of the U.S.
- Section 7 Consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service.
- State Water Quality Control Board Certification.
- California Department of Fish and Game Streambed Alteration Agreement.
- City of Roseville Tree Permit.
- State Reclamation Board Encroachment Permit.
- Compliance with the California Department of Water Resources, Division of Safety of Dams. Includes approval of application for construction of the project and compliance with inspection requirements.
- California Regional Water Quality Control Board, Central Valley Region Notice of Intent and Stormwater Pollution Prevention Plan.
- Easement for construction and maintenance, Parcel 017-010-041.
- Abandonment of Pettigrew Road.

- Preserve the southwestern portion of the project area under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves. The Administrative Rules for Agricultural and Open Space Preserves implements the provisions of the Williamson Act in Placer County.

4.0 AGRICULTURAL RESOURCES

4.1 ENVIRONMENTAL SETTING

4.1.1 Agricultural Land Use

California generates more than $23 billion in agricultural products sold, and contributes significantly to the agricultural industry of the United States with the state ranked in first position (11.7 percent) for the market value of agricultural products sold (U.S. Department of Agriculture, 1999a and 1999b). Approximately 29 percent of total land area within California is currently used for agricultural purposes (California Department of Conservation, 2002a). Agricultural produce grown in California includes livestock and poultry, corn, wheat, cotton, hay crops, vegetables and orchards (U.S. Department of Agriculture, 1999a). A significant proportion of California's agriculture relies on irrigation and the state is ranked in first position for the largest land area occupied by farmed land requiring irrigation (U.S. Department of Agriculture, 1999b).

Placer County generates more than $58 million in agricultural products sold (based on 1999 statistics) and contributes approximately 0.25 percent towards California's total market value of agricultural products sold (AgResource Solutions and North Fork Associates, 2002; U.S. Department of Agriculture, 1999a). Approximately 19 percent of the total land area within Placer County and approximately 1 percent of the total land area within California is currently used for agricultural purposes (California Department of Conservation, 2002a and 2002b). Agricultural production in Placer County includes large-scale rice and field crop operations in the western portion of the County; timber production in the eastern portion of the County; orchard fruit tree operations in the transition zone between the Central Valley and the foothills of the Sierra Nevada; small-scale operations, i.e., strawberries, in the Sierra Nevada foothills; and range livestock operations interspersed throughout remaining areas of agricultural land (AgResource Solutions and North Fork Associates, 2002). Rice, cattle and calves, nursery products, and chickens are the most valuable commodities produced in Placer County (AgResource Solutions and North Fork Associates, 2002).

The project area lies within Placer County and is designated Agriculture in the Placer County General Plan, and zoned Farming and "Minimum Building Site as Shown on Map" (F-B-X). The project area is predominantly agricultural, with approximately 90 percent used for rice cultivation and approximately 10 percent used for grazing or grassland. Rice production in California, Placer County and the site is discussed in Section 4.1.2, Rice Farming.

Existing land uses surrounding the site are predominantly agricultural (rice cultivation to the south and west and row crops/grazing to the north and east), residential to the northeast, and water courses/wetland areas and riparian habitat along the upstream and downstream portions of Pleasant Grove Creek outside the site boundaries.

Future potential land uses surrounding the site include the development of the West Roseville Specific Plan area, and development within the area covered by the Memorandum of Understanding between the City of Roseville and Placer County. Development of these areas are expected to be for predominately residential land use. The existing land use of these areas is predominantly agricultural, including a range of uses such as rice cultivation, grain and hay crops, pasture and other "native" vegetation (California Department of Water Resources, 2000).

4.1.2 Rice Farming

California contributes significantly to rice production within the United States and is ranked third, contributing 16.5 percent of the total area of land harvested for rice (U.S. Department of Agriculture, 1999b). The majority, more than 90 percent, of California's rice farms are located in the Sacramento Valley with the remaining approximate 10 percent located in the north to central San Joaquin Valley (Hill et al., 1997). Counties farming rice in the Sacramento Valley include Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Yolo, Placer and Sacramento (Hill et al., 1997). Colusa, Butte, Sutter and Glenn counties are ranked as the highest producers of rice in California (Hill et al., 1997).

Rice in California is grown mostly on fine-textured, poorly drained soils with impervious hardpans or claypans, which are well suited to rice production as their low permeability enhances water use efficiency. The rice is grown primarily in a continuously flooded, flow-through system of basins where water is guided from the highest elevation basin to the lowest elevation basin and is regulated by irrigation boxes placed in the levees between basins. The majority of irrigation water comes from a combination of winter rain and snow-fed reservoirs of the Cascade, Klamath and Sierra Nevada mountain ranges. Less than 10 percent of rice irrigation water is abstracted from groundwater wells in areas where surface water is not available (Hill et al., 1997).

A wide range of rice varieties are grown in California, including short, medium, and long grain as well as specialty varieties such as glutinous and aromatic. The growing season, from seeding to harvest, ranges from 130 days to 175 days depending on climatic variation experienced within the state. Rice production in California is highly mechanized, requiring only about four hours of labor per acre. Mechanization includes laser technology to precision-level rice fields and establish field grades, large tractors, and heavy-duty implements to prepare seed beds and self-propelled combines with half or full tracks for harvesting in muddy soils. Aircraft are often used for seeding, pest control and fertilization (Hill et al., 1997).

The majority of rice farming in California is undertaken within the provisions of the Farm Bill. The U.S. Department of Agriculture, which administers the Farm Bill, promotes several farm policy objectives including price support and income protection. The Farm Bill is revised every five years. The 1996 Farm Bill provides a "decoupled contract payment" which is a predetermined payment for a period of seven years (expiring in 2002) that is paid directly to the farmer whether the land is farmed or not. The farmer is free to plant any crop or no crop at all and still receives the contract payment up to specified limits. A small subsidy per crop is also offered. This is in contrast to prior Farm Bills where crops were

fully subsidized by the U.S. Government to allow farmers to continue farming by providing a supplemental income per hundred weight (cwt [1 cwt = 100 pounds]) of rice in addition to current market prices. It is not known at this stage whether the 1996 Farm Bill has had a detrimental effect on rice production in California through the reduction of subsidy offered and introduction of the decoupled contract payment which allows farmers the choice to continue farming or not (Hill et al., 1997). The 2002 Farm Bill (Farm Security and Rural Investment Act 2002) passed Congress on May 8, 2002, and has provisions for income support to farmers similar to those of the 1996 Farm Bill (House Agriculture Committee, 2002).

Currently, all costs for producing rice in California are estimated at approximately $800/acre, which requires an 8,500 lb/acre yield or higher for farmers to break even on expenses. In recent times the profitability of rice farming has decreased. This is because rice yields have been low (1995 to 1996), which reduces the amount of income generated, and the price received for competing crops (such as grain and safflower) decreased, which increased the demand for conversion of rice farmland to urban land use and other crops. In addition, the rice subsidy offered has been significantly reduced as a result of the 1996 Farm Bill. The provisions of the Farm Bill support the production of a reliable, safe, and affordable supply of food and fiber; promote stewardship of agricultural land and water resources; facilitate access to American farm products at home and abroad; encourage continued economic and infrastructure development in rural America; and ensure continued research to maintain an efficient and innovative agricultural and food sector. The long-term profitability of rice farming in California at this stage is unknown; however, it is likely to depend principally upon the availability and size of the rice subsidy offered and the demand for rice in domestic and export markets (Hill et al., 1997). If the long-term profitability of rice farming is low, this may additionally increase the pressure on land used for rice farming for conversion to urban land use or other crops.

In 1997, there were 49 rice farms in Placer County covering an area of 16,661 acres (U.S. Department of Agriculture, 1999a), with an average of approximately 340 acres per rice farm. During the same year, approximately 1.3 million cwts of rice were produced. This represents an increasing trend compared to 1992 data, when 44 rice farms in Placer County covered 12,747 acres and produced 1 million cwts of rice (averaging approximately 290 acres per farm) (U.S. Department of Agriculture, 1999a).

The majority of the project area (known as Reason Farms) has been used for rice farming since 1975. The current owner established Reason Farms as a rice farm and has since continuously farmed the property. Medium grain rice is currently grown on the property, although long grain rice has also been grown in the past. Other types of crops have also been planted on the property including beans, popcorn and wheat; however, the growth of these crops was not successful. The owner has indicated that the property contains very fine-grained impervious soils which are not well suited to the growth of crops other than rice (Amarel, 2002).

Reason Farms consists of 32 fields ranging in size from 3.3 acres to 87.3 acres, resulting in a total area of 1,069.5 acres farmed. The rice fields are configured to allow gravity-dependent water to pass through the

fields. Pumping is not required to move water from field to field. The property is irrigated with groundwater from a network of 12 groundwater wells. Approximately 3.96 billion gallons of groundwater is extracted from 11 of the groundwater wells over a period of 100 days during the growing season (May to October). The remaining well is operational; however, it is not in use (Amarel, 2002).

The rice fields within Reason Farms are small in comparison to rice fields farmed elsewhere in California. For example, the average size of rice fields farmed in Colusa County, where a large proportion of rice is grown in California, is 100 acres; larger rice farms within the Sacramento Valley are approximately 3,000 acres in size. As a result of the small size of the rice fields within Reason Farms, the level of mechanization of farming implemented is lower than for other rice farms in California and the rice fields are planted by hand (Amarel, 2002). The low level of mechanization employed on Reason Farms is thought to affect the profitability of farming the property compared to other rice farming operations.

The two parcels located in the southwestern portion of the project area owned by a separate owner are also partly farmed for rice. The remainder of the parcels is used for grazing. It is assumed that similar farming practices and profitability of operations are experienced on these portions.

4.1.3 Important Farmland Areas

The California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP), which produces maps and statistical data used for analyzing impacts on California's agricultural resources. The following Department of Conservation–defined categories of farmland exist within California:

- Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance: Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- Unique Farmland: Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been used for production of crops at some time during the four years prior to the mapping date.
- Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- Grazing Land: Land on which the existing vegetation is suited to the grazing of livestock. This category was developed with the California Cattlemen's Association, University of California Cooperative Extension, and others interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

- Urban and Built-up Land: Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures and other developed purposes.
- Other Land: Land not included in any other mapping category. Common examples include low-density rural development, timber, wetland and riparian areas not suitable for livestock grazing, vacant and nonagricultural land surrounded on all sides by urban development; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits and water bodies smaller than 40 acres.
- Water: Perennial water bodies with an extent of at least 40 acres. (California Department of Conservation, 2002c)

Approximately 43 percent of farmland and 13 percent of the land area within California is Important Farmland contained within the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland and Farmland of Local Importance (California Department of Conservation, 2002b). Of the Important Farmland in California, approximately 42 percent is Prime Farmland, approximately 20 percent is Farmland of Statewide Importance, approximately 11 percent is Unique Farmland and approximately 27 percent is Farmland of Local Importance (California Department of Conservation, 2002b).

The majority of farmland occurring within Placer County is Farmland of Local Importance with approximately 62.3 percent of farmland and 37.3 percent of land under this category. Smaller percentages of Prime Farmland, Farmland of Statewide Importance and Unique Farmland occur within Placer County.

Table 4-1 identifies the acreages of important farmland within Placer County and California from 1992 through 2000.

The data presented above indicate areas of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland in Placer County decreased from 1992 to 1998 and then slightly increased from 1998 to 2000. During the same period, areas of Farmland of Local Importance in Placer County increased slightly from 1992 to 1998 and then decreased from 1998 to 2000. In addition, during the same period, the total agricultural area within Placer County decreased. The decline in important farmland has been widely attributed to the significant urbanization of southern and western Placer County converting agricultural lands to urban use (AgResource Solutions and North Fork Associates, 2002). The majority of growth over the past twenty years has occurred in the cities of Roseville and Rocklin, with more recent growth noted in the City of Lincoln (AgResource Solutions and North Fork Associates, 2002). Growth projections for Placer County indicate future significant growth, including the potential future development of the West Roseville Specific Plan (WRSP) area and a larger area to the west and south that is the subject of an MOU between the City of Roseville and Placer County. It is anticipated that additional losses of agricultural and important farmland areas would be experienced as further development and growth continue in Placer County.

Table 4-1
Important Farmland, Placer County and California

Category	1992			1994			1996			1998			2000		
	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA
Placer County															
Prime Farmland	10,523	5.5	1.1	10,458	5.5	1.1	9,867	5.3	1.0	9,750	5.3	1.0	9,901	5.5	1.0
Farmland of Statewide Importance	5,546	2.9	0.6	5,608	3.0	0.6	5,546	3.0	0.6	5,196	2.8	0.5	5,312	2.9	0.6
Unique Farmland	23,975	12.6	2.5	23,848	12.6	2.5	23,300	12.5	2.4	22,726	12.4	2.4	23,616	13.1	2.5
Farmland of Local Importance	113,464	59.8	11.8	113,505	60.0	11.8	114,271	61.2	11.9	114,453	62.3	11.9	111,987	62.1	11.7
Total Farmland	**189,805**			**189,272**			**186,670**			**183,820**			**180,472**		
Total Area	**964,140**			**960,090[a]**			**960,090**			**960,090**			**960,090**		
California															
Prime Farmland	4,317,754	18.5	5.4	4,265,512	18.4	5.3	4,349,141	18.2	5.4	4,315,886	18.1	5.3	3,230,032[b]	18.1	11.3
Farmland of Statewide Importance	2,099,193	9.0	2.6	2,096,233	9.0	2.6	2,083,528	8.7	2.6	2,062,777	8.6	2.5	1,798,039[b]	10.1	6.3
Unique Farmland	1,026,444	4.4	1.3	1,016,242	4.4	1.3	1,052,287	4.4	1.3	1,074,796	4.5	1.3	839,501[b]	4.7	2.9
Farmland of Local Importance	2,121,237	9.1	2.6	2,138,515	9.2	2.7	2,759,085	11.5	3.4	2,766,149	11.6	3.4	2,186,088[b]	12.2	7.6
Total Farmland	**23,285,776**			**23,238,183**			**23,920,527**			**23,822,973**			**17,849,448[b]**		
Total Area	**80,498,835**			**80,096,651**			**80,947,633**			**80,955,627**			**28,607,441[b]**		

Source: California Department of Conservation, 2002b and 2002d.

Notes:

TF Total farmland within Placer County and California.

TA Total area within Placer County and California.

[a] Total area under the jurisdiction of Placer County declines from 1992 to 1996 due to annexations by the Cities of Rocklin and Roseville.

[b] Area excludes Butte, Colusa, Kern, San Diego, San Luis Obispo and Sonoma counties as data were not available.

The project area is currently used for agricultural purposes and includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance designated by the Farmland Mapping and Monitoring Program of the California Department of Conservation (1999). Approximately 5 percent of the project area is designated as Prime Farmland, 20 percent is designated as Farmland of Statewide Importance, 60 percent is Unique Farmland, and 10 percent is Farmland of Local Importance. The farmland occurring within the project area is predominately used for rice cultivation, with approximately 90 percent (1,350 acres) used for rice cultivation and approximately 10 percent (150 acres) used for grazing or left as open space.

Surrounding potential future areas of development including the WRSP area and the MOU area are currently used for agricultural purposes and contain important farmland. The proposed WRSP contains approximately 0.3 percent of Prime Farmland and 2.8 percent of Farmland of Local Importance, and the MOU area contains approximately 2.1 percent of additional Farmland of Local Importance.

Areas of important farmland occurring within the project area, the proposed WRSP, and the MOU area between the City of Roseville and Placer County are shown on Figure 4-1.

4.1.4 Williamson Contract Areas

The Williamson Act, enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Approximately 66 percent of farmland and approximately 19 percent of the total land area within California is subject to the Williamson Act (California Department of Conservation, 2002e). Williamson Act areas enrolled within Placer County have been declining over the past 20 years following a significant increase of areas enrolled during the first decade of the Act's introduction. The most recent data (collected in 2000) indicated that 30.3 percent of farmland and 4.4 percent of the total area of Placer County were placed under active contracts. Table 4-2 presents the historical data for Williamson Act contract areas in Placer County from 1970 to 2000.

The majority of the project area is not subject to the Williamson Act, except for the southwestern portion including portions of parcels 17-010-033 and 17-090-028 (see Figure 4-2). This area is under contract (No. 536) and is currently active. It includes both Prime Farmland and Non-Prime Farmland and covers an area of approximately 170 acres within the project area. The adjacent areas to the northwest and southwest of the area under contract are also subject to the Williamson Act; however, they are under separate contracts. These adjacent areas are located outside of the project area.

4.2 REGULATORY SETTING

4.2.1 Federal

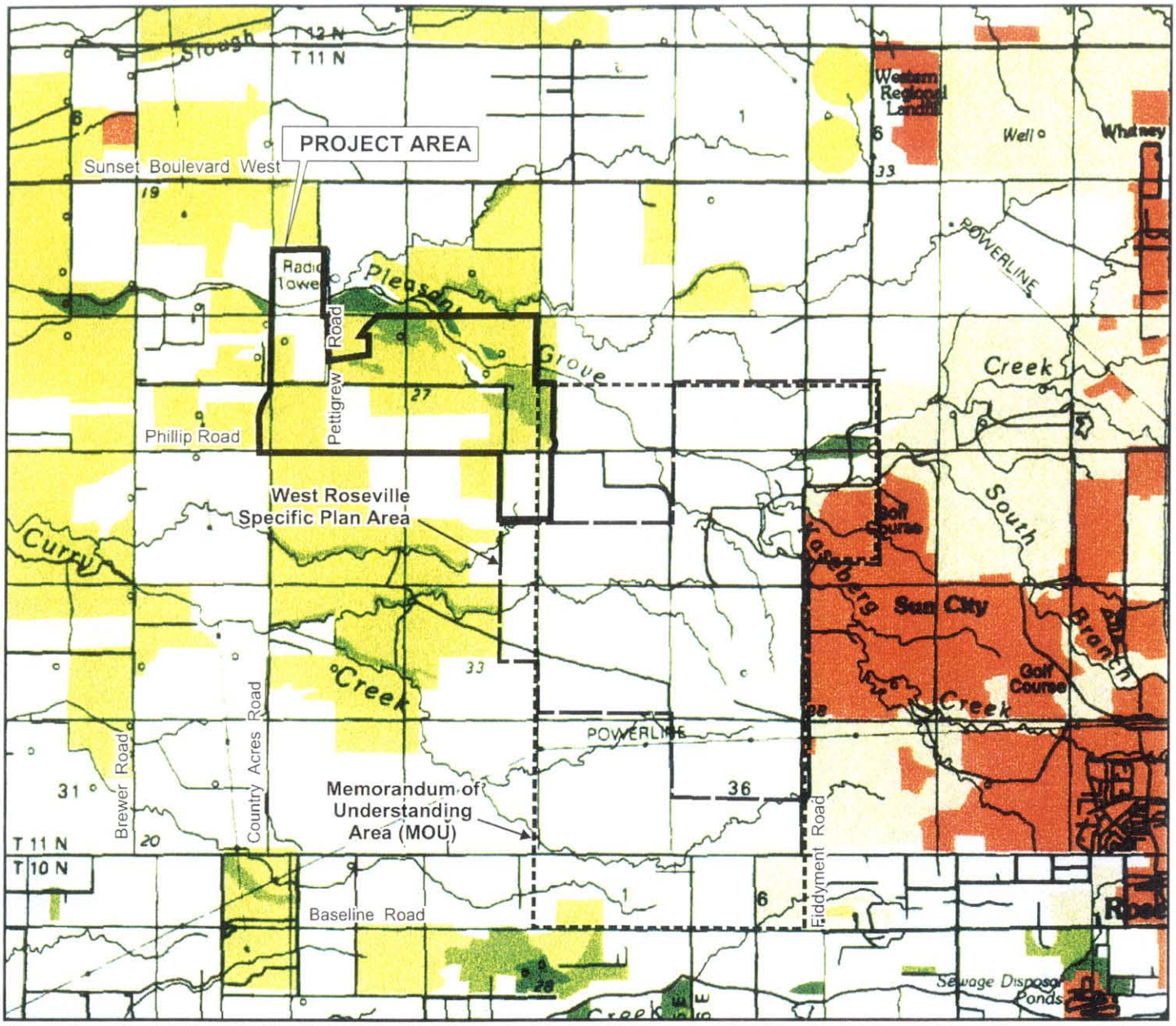
The federal regulation that applies to agricultural resources present at the project area is the Farmland Protection Policy Act 1994. This regulation is described in more detail below.

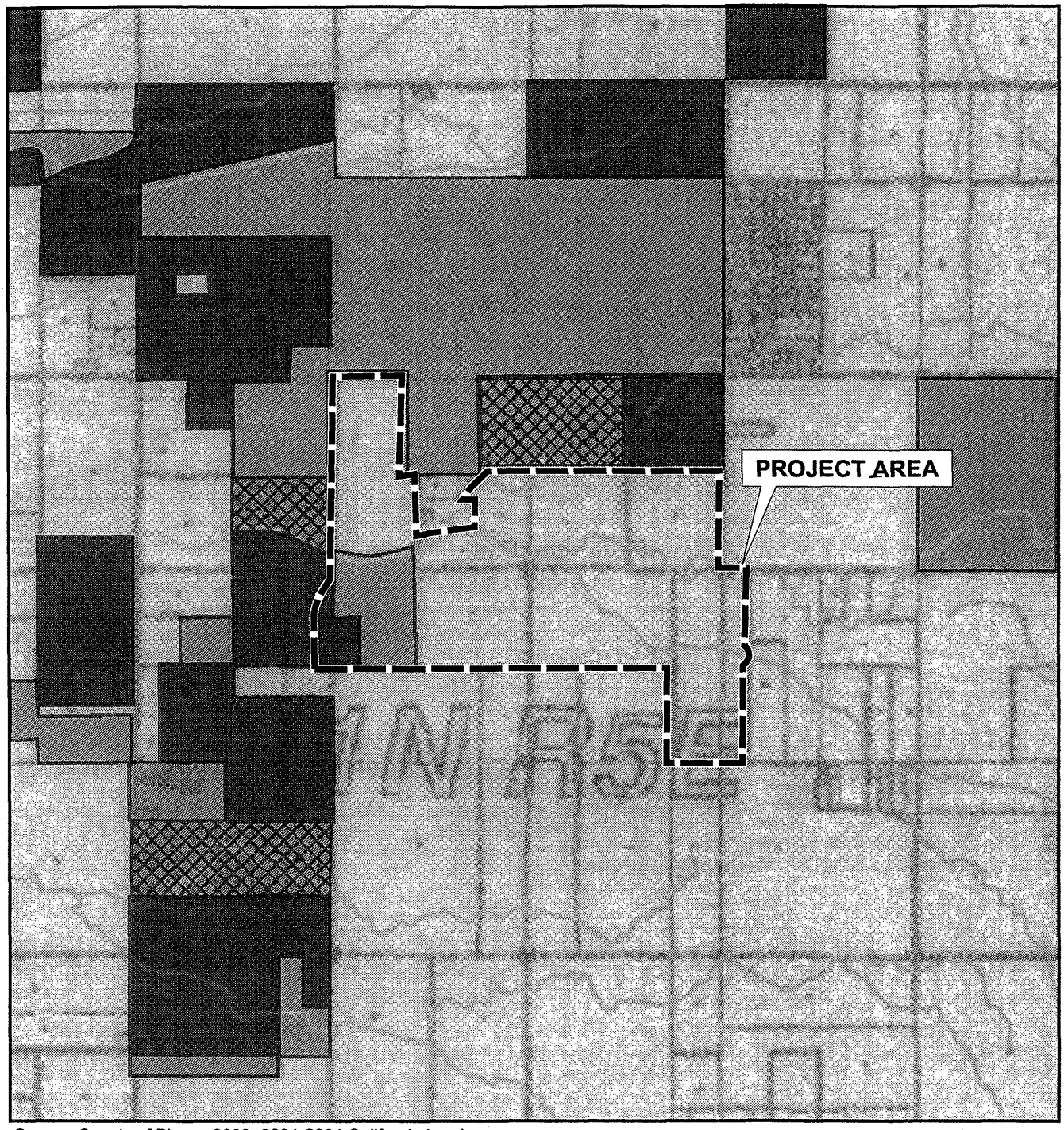
Table 4-2
Williamson Act Contract Areas Within Placer County

Williamson Act Contract	1970			1980			1990			2000		
	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA
Active	18,695	8.9	1.9	53,230	28.4	5.5	44,058	27.6	4.6	42,244	30.3	4.4
Non-Renewal	0	0	0	5,273	2.8	0.5	19,251	12.1	2.0	3,308	2.4	0.3
Expired	0	0	0	0	0	0	6,536	4.1	0.7	32,262	23.1	3.4
Total Farmland	**209,235[a]**			**187,199[a]**			**159,749[a]**			**139,587[b]**		
Total Area	**960,090**			**960,090**			**960,090**			**960,090**		

Source: AgResource Solutions and North Fork and Associates, 2002.

Notes:
[a] Figures calculated from acreages given for 1969, 1982, and 1997.
[b] Acreage listed is for 1997 as acreage not available for 2000.
TF Total Farmland
TA Total Area


PROJECT AREA
Sunset Boulevard West
Phillip Road
Pleasant Grove Creek
Pleasant Grove Creek Canyon
Pleasant Grove Creek Canyon
Pleasant Grove Creek Canyon



Source: County of Placer, 2002. 2001-2001 California Land Conservation Act Enrollment Map.

LEGEND

- Prior Non-Renewal Williamson Act Contract
- Open (Non-Prime Farmland) Williamson Act Contract
- Prime Farmland Williamson Act Contract

N

2000 0 4000

Approximate Scale in Feet

9/24/02 vsa \28065805\F4-2_williamson act.cdr

Figure 4-2
WILLIAMSON ACT CONTRACT AREAS

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

URS PWA

Farmland Protection Policy Act 1994

The Farmland Protection Policy Act 1994 is administered by the Natural Resources Conservation Service of the U.S. Department of Agriculture. The provisions of the Act aim to minimize the impact that federal programs may have on the conversion of farmland to nonagricultural uses. Federal programs are administered to be compatible with state and local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the Farmland Protection Policy Act 1994 (Natural Resources Conservation Service, 2002).

4.2.2 State

The main California state regulation that applies to resources at the project area is the California Land Conservation Act of 1965 (Williamson Act). This regulation is described in more detail below.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, otherwise known as the Williamson Act, enables local governments to restrict the use of specific parcels of land to agricultural or related open space. Landowners enter into contracts with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of 10 years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act 1971 (AgResource Solutions and North Fork Associates, 2002).

In 1998, the Williamson Act's farmland security zone provisions were enacted with the passage of Senate Bill 1182 (Costa, Chapter 353, Statutes of 1998). This sub-program, called the "Super Williamson Act," enables agricultural landowners to enter into contracts with the county for 20-year increments with an additional 35 percent tax benefit over and above the standard Williamson Act contract (AgResource Solutions and North Fork Associates, 2002).

The Williamson Act is implemented in Placer County according to the provisions of the Administrative Rules for Agricultural and Open Space Preserves. The Placer County Agricultural and Open Space Preserve Program was established in accordance with the Williamson Act to protect agricultural lands for the continued production of agricultural commodities, and to protect certain other lands devoted to open space uses. There are currently no provisions for the Super Williamson Act within the County's Administrative Rules for Agricultural and Open Space Preserves (AgResource Solutions and North Fork Associates, 2002).

To be eligible for a Williamson Act contract, a site must satisfy the following requirements:

- Have a total area of at least 100 acres;
- Parcels should be adjacent to others subject to the contract so that the total area under contract is 100 acres or more; and
- Parcels should be located in an area with unique agricultural enterprises, where the establishment of an agricultural preserve with a total area of less than 100 acres is in public interest and consistent with Placer County's General Plan (AgResource Solutions and North Fork Associates, 2002).

Placer County also requires that sites be developed with an existing commercial agricultural operation engaged in the active production of an agricultural commodity. In addition, Placer County's Administrative Rules provide an opportunity for the protection of certain non-agricultural open space lands that the General Plan classifies as desirable open space or environmentally sensitive, and other lands with environmental characteristics determined by the Board of Supervisors to be of high value to the current and future residents of Placer County (AgResource Solutions and North Fork Associates, 2002). This is consistent with Govt. Code Section 51201 of the Williamson Act, which lists non-agricultural uses which may be preserved as those that are compatible with the agricultural, recreational, or open-space use of land. These uses include a managed wetland area; a wildlife habitat area; and use of land in its agricultural or natural state by the public for recreational uses such as walking, hiking, picnicking, fishing, and hunting.

The southwestern portion of the project area is under contract (No. 536) and is currently active. It includes both Prime Farmland and Non-Prime Farmland and covers an area of approximately 170 acres within the project area.

Farmland Protection Policy Act of 1994 (Federal Act Implemented in State of California)

The California Farmland Conservancy Program of the California Department of Conservation administers the Farmland Mapping and Monitoring Program in California (Natural Resources Conservation Service, 2002). As described in Section 4.1.3 above, the following categories of farmland exist in California: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Land, Other Land and Water. Prime Farmland, Farmland of Statewide Importance, Unique Farmland and Farmland of Local Importance are classified as important farmland categories.

In the context of the project area and as described above, the site contains areas of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

4.2.3 Local

Local regulations that currently apply to resources at the project area include the Placer County General Plan, Placer Legacy Open Space and Agricultural Conservation Program and the Placer County Administrative Rules for Agricultural and Open Space Preserves. Goals and policies relating to

agricultural use identified within these policies are summarized below. A discussion of these goals and policies can be found in Appendix A-2 of the Initial Study. When the property is purchased by the City of Roseville, City regulations will apply. No goals or policies relating to agricultural use were identified within the City of Roseville's General Plan.

Placer County General Plan

Goals 1H, 7A, and 7B and Policies 1H1, 1H5, 1H6, 7A1, 7A2, 7A3, 7A4, and 7A13 of the Placer County General Plan relate to agricultural use and are summarized below.

- Maintain agricultural uses and require development with or adjacent to designated agricultural areas to incorporate design, construction and maintenance techniques that protect agricultural use.
- A buffer or setback shall be required for new non-agricultural development immediately adjacent to agricultural lands.

This is applicable to the project area, as it is currently used for agricultural purposes.

Placer Legacy Open Space and Agricultural Conservation Program

A Draft Natural Community Conservation Planning Agreement (NCCP) has been developed for southwestern Placer County that includes the land associated with the project area (Placer Legacy, 2001). An objective of the NCCP specifically relating to agricultural use is to "Maintain a viable agricultural segment of the economy." This objective is applicable to the project area, as it is currently used for agricultural purposes.

Placer County Administrative Rules for Agricultural and Open Space Preserves

The Administrative Rules for Agricultural and Open Space Preserves, administered by the County's Planning Director, Agricultural Commissioner and Assessor, implement the provisions of the Williamson Act in Placer County (AgResource Solutions, 2002). These rules do not replace the Williamson Act, but work in conjunction with applicable provisions of the Williamson Act.

To be eligible for a Williamson Act contract, a site must satisfy the following requirements:

- Have a total area of at least 100 acres;
- Parcels should be adjacent to others subject to the contract so that the total area under contract is 100 acres or more; and
- Parcels should be located in an area with unique agricultural enterprises, where the establishment of an agricultural preserve with a total area of less than 100 acres is in public interest and consistent with Placer County's General Plan. (AgResource Solutions and North Fork Associates, 2002)

Placer County also requires that sites be developed with an existing commercial agricultural operation engaged in the active production of an agricultural commodity. In addition, Placer County's Administrative Rules provide opportunity for protection of certain non-agricultural open space lands that the General Plan classifies as desirable open space or environmentally sensitive, and other lands with environmental characteristics determined by the Board of Supervisors to be of high value to the current and future residents of Placer County (AgResource Solutions and North Fork Associates, 2002). This is consistent with Govt. Code Section 51201 of the Williamson Act, which lists non-agricultural uses which may be preserved as those that are compatible with the agricultural, recreational, or open-space use of land. These uses include a managed wetland area; a wildlife habitat area; and use of land in its agricultural or natural state by the public for recreational uses such as walking, hiking, picnicking, fishing, and hunting.

4.3 IMPACTS

4.3.1 Significance Criteria

Potential significant impacts associated with agricultural impacts have been evaluated using the following criteria:

- Type and extent of direct conversion of prime agricultural land to non-agricultural use, or impairment of the agricultural productivity of prime agricultural land.
- Type and extent of indirect conversion of prime agricultural land to non-agricultural use, or impairment of the agricultural productivity of prime agricultural land.

4.3.2 Direct Impacts

IMPACT AG-1:	Direct conversion of prime agricultural land to non-agricultural use.
SIGNIFICANCE:	Significant
MITIGATION:	None identified
RESIDUAL SIGNIFICANCE:	Significant

The development of the project could convert up to 1,500 acres of agricultural land predominantly used for rice farming to other uses. Approximately 75 acres of Prime Farmland, approximately 300 acres of Farmland of Statewide Importance, approximately 900 acres of Unique Farmland, and approximately 150 acres of Farmland of Local Importance are contained within the project area. Approximately 560 acres of farmland would be used for flood control as a result of the creation of the retention basin and includes the areas of the North Basin, South Basin, bypass channel, and low-flow channel. The use of the remaining areas of the project area is not known at this stage, but it is likely that some areas could continue to be used for farming, sold by the City for development or offered by the City for mitigation in association with future surrounding developments.

It is unlikely that remaining areas of the project area would be suitable for rice farming. The parts of the project area not used for retention basin features would likely be only marginally viable for rice farming (Amarel, 2002). The project area soils are difficult to grow crops on, other than rice. However, the basin areas of the retention basin could be suitable for grazing and could contribute to agricultural productivity to the region if this use were implemented. Adjacent surrounding areas are currently used for grazing.

The development of the project area would represent a loss of up to approximately 0.8 percent of Prime Farmland, up to approximately 5.6 percent of Farmland of Statewide Importance, up to approximately 3.8 percent of Unique Farmland, and up to approximately 0.1 percent of Farmland of Local Importance within Placer County (California Department of Conservation, 2002b). A loss of up to approximately 0.0017 percent of Prime Farmland, up to approximately 0.014 percent of Farmland of Statewide Importance, up to approximately 0.084 percent of Unique Farmland and up to 0.0054 percent of Farmland of Local Importance would be experienced in California (California Department of Conservation, 2002b). The proposed project could result in the loss of up to approximately 9 percent of rice farmland within Placer County and approximately 0.3 percent of rice farmland in California (Hill et al., 1997; U.S. Department of Agriculture, 1999b).

Development of the site would likely remove important rice farmland from production. This impact is considered significant pursuant to Appendix G of the CEQA Guidelines. According to Appendix G, projects involving conversion of important farmland to non-agricultural uses are generally considered to have a significant impact on the environment. This is also in conflict with the Placer County General Plan and the Placer Legacy Open Space and Agricultural Conservation Program, which promote agricultural viability within the economy. Although the rice farmland occurring within the project area is of marginal viability and the loss of important farmland appears fairly small, the project could result in the potential loss of up to 10 percent of the important farmland within Placer County. The conversion of this land would be regarded as a significant impact because farmland within Placer County is declining and under pressure from other uses in the area. No mitigation has been identified to reduce this impact to a less than significant level. Therefore, this impact is considered to be significant and unavoidable.

IMPACT AG-2:	Conflict with Williamson contract areas.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measure AG-1 (Preserve portion of the project area under an Open Space Preserve Contract).
RESIDUAL SIGNIFICANCE:	Less than significant

The development of the project would convert farmland areas currently subject to an active Williamson Act contract to non-agricultural use. The primary use would be for flood control (approximately 560 acres), but it is likely that some areas could continue to be used for farming, sold by the City for development, or offered by the City for mitigation in association with future surrounding developments.

Conversion of Williamson Act contract areas to non-agricultural use is considered significant pursuant to Appendix G of the CEQA Guidelines. However, this impact can be reduced to a less than significant level with the implementation of Mitigation Measure AG-1, described in Section 4.4, Mitigation Measures.

Mitigation Measure AG-1 would reduce the impact of the loss of the Williamson Act contract area to a less than significant level because, although farming would not continue, the area would be preserved as Public Open Space in accordance with Placer County's implementing rules for Williamson Act contracts.

4.3.3 Indirect Impacts

IMPACT AG-3:	Indirect conversion of prime agricultural land to non-agricultural use.
SIGNIFICANCE:	Significant
MITIGATION:	None identified
RESIDUAL SIGNIFICANCE:	Significant

The development of the proposed project could facilitate the development of surrounding areas, potentially including the proposed WRSP and the MOU area between the City of Roseville and Placer County. This is because it includes capacity for retention of stormwater/flood waters generated from future growth that could be associated with these projects pursuant to a separate permitting process, including environmental review, that has recently been initiated. The development of these areas, or other undeveloped areas that could be facilitated by the proposed project, could result in the conversion of approximately 3,100 acres of agricultural land, including important farmland, within the WRSP, and an additional approximately 2,800 acres of agricultural land, including some important farmland, within the remainder of the MOU area, to other uses.

The WRSP and the MOU area are used for agricultural purposes, including rice cultivation, grain and hay crops, pasture and other "native" vegetation (California Department of Water Resources, 2000). A loss of approximately 0.3 percent of Prime Farmland and 2.8 percent of Farmland of Local Importance within Placer County and 0.0007 percent of Prime Farmland and 0.12 percent of Farmland of Local Importance within California would be experienced if the West Roseville Specific Plan area were developed (California Department of Conservation, 2002b). An additional loss of approximately 2.1 percent of Farmland of Local Importance within Placer County and approximately 0.084 percent of Farmland of Local Importance within California would be experienced if the remainder of the MOU area were developed (California Department of Conservation, 2002b).

Conversion of important farmland areas to non-agricultural uses as a result of other changes in the existing environment is considered significant pursuant to Appendix G of the CEQA Guidelines. The proposed project could indirectly facilitate the conversion of important farmland to non-agricultural use as a result of its accommodation of storm water runoff from the proposed WRSP and the potential future

development of the remainder of the MOU area. If development does not occur in these areas, then the retention storage capacity of the proposed project could be used to facilitate conversion of important farmland to non-agricultural use in other areas, the amount of which is unknown.

The proposed project's indirect facilitation of conversion of important farmland areas to non-agricultural use is considered significant. Given the retention requirements of the proposed project, no feasible mitigation has been identified to reduce this impact to a less than significant level. Therefore, this impact is considered to be significant and unavoidable.

4.4 MITIGATION MEASURES

Mitigation Measure AG-1: Preserve the southwestern portion of the project area under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves for a period of twenty years.

Mitigation Measure AG-1 applies to Impact AG-2.

Mitigation Measure AG-1 would preserve the southwestern portion of the project area currently subject to the Williamson Act under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves for a period of twenty years. The implementation of Mitigation Measure AG-1 would reduce the impact of the loss of the Williamson Act contract area to a less than significant level. This is because although farming would not continue, the area may be preserved as Public Open Space in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserve. The Administrative Rules implement the provisions of the Williamson Act within the County. The preservation of the portion of the project area may also provide opportunities for passive recreation and biological preservation, enhancement, and restoration. Therefore, the resultant level of impact is less than significant.

5.0 AIR QUALITY

5.1 ENVIRONMENTAL SETTING

Ambient air quality is generally determined by climatological conditions, the topography of the air basin, and the type and amounts of pollutants emitted. The area of the proposed project is subject to a combination of topographical and climatic factors that create the potential for high concentrations of regional and local air pollutants. The following section describes relevant characteristics of the air basin that affect pollutant dispersion in the project area. This section also discusses types of air pollutants, health effects, and existing air quality levels.

5.1.1 Climate and Topography

The proposed project is located in Sacramento Valley Air Basin (SVAB), within the western portion of Placer County. Weather patterns throughout the SVAB are affected by the geography. SVAB is bounded by the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. The Carquinez Strait breaches the Coast Range, exposing the midsection of the SVAB to the Pacific Coast marine weather. This geography channels winds through the Sacramento Valley, but also inhibits dispersion of pollutant emissions in portions of the valley. Typically, marine air enters the SVAB through the Carquinez Strait and transport pollutants out of the valley to the north. However, conditions can lead to the prevailing winds circling back south, particularly between July and September, elevating pollution levels in the basin. The marine influence can result in pollutants being carried from the San Francisco Bay Area and Sacramento region to the western portion of Placer County.

The climate of the SVAB is Mediterranean in character, with mild, rainy winter weather from November through March, and hot, dry weather from May through September. January temperatures in the area range from an average low in the 30s (°F) to an average high in the 50s (°F). July temperatures range from an average low in the 50s (°F) to an average high in the 90s (°F). These high temperatures, combined with low humidity, produces hot, dry summers which contribute to ozone (commonly referred to as smog) buildup.

Pollutant dispersion is also affected by temperature inversions which are common throughout the year, but are most severe 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. Both types of inversions inhibit vertical air dispersion. Coupled with the lack of winds during the late summer and fall, inversions contribute to high pollutant concentrations near ground level.

5.1.2 Air Quality Standards and Existing Concentrations

The federal and state governments have each established their own ambient air quality standards. The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient

Air Quality Standards (NAAQS) in terms of allowed ambient concentrations for criteria pollutants under the provisions of the Clean Air Act. Primary NAAQS are established at levels necessary, with an adequate margin of safety, to protect the public health. Similarly, secondary NAAQS specify the levels of air quality determined appropriate to protect the public welfare from any known or anticipated adverse effects associated with air contaminants. Allowed ambient concentrations are set for ozone (O_3), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), lead (Pb), and sulfur dioxide (SO_2). Table 5-1 summarizes the NAAQS for these pollutants. The 8-hour O_3 and $PM_{2.5}$ standards listed in the table were promulgated in 1997 but were challenged in the courts. In 2002, the courts upheld these two standards, and now EPA and the states are working together to implement the new standards. In California, the California Air Resources Board (CARB), which is part of the California Environmental Protection Agency, has promulgated more stringent ambient air quality standards for O_3, PM_{10}, CO, NO_2, SO_2, and Pb, as shown in Table 5-1. CARB has also developed standards for sulfates and hydrogen sulfide.

Counties and metropolitan areas are classified as being in attainment or non-attainment with respect to these federal and state ambient pollutant standards. An area's classification is determined by comparing actual monitored air pollutant concentrations with state and federal standards. More than 200 air monitoring stations are located in California and are part of the State and Local Air Monitoring Network. These stations are operated by the California Air Resources Board, local Air Pollution Control Districts (APCDs) or Air Quality Management Districts (AQMDs), private contractors, and the National Park Service (NPS). Based on concentrations measured at these stations, the proposed project's region is in compliance with the National Ambient Air Quality Standards for all pollutants except O_3 and is in compliance with the state ambient air quality standards except for O_3 and PM_{10}. Also, the EPA redesignated the region as being in attainment for the national 8-hour CO standard in 1998.

The nearest ambient pollutant monitoring station is located at 151 North Sunrise Avenue in Roseville. Table 5-2 summarizes measured criteria pollutant concentrations over the past five years at this station. The following discusses the local measured concentrations and the health impacts and other characteristics of O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2. Pb, sulfates, and hydrogen sulfide are of least concern in this project area since levels are well below standards and no major sources of these pollutants exist in the area.

Ozone

O_3 is a colorless gas with a pungent odor which causes eye and lung irritation, visibility reduction, and crop damage. A primary constituent of smog, O_3 is formed in the atmosphere in the presence of sunlight by a series of chemical reactions involving oxides of nitrogen (NO_X) and reactive organic gases (ROG). Because these reactions occur on a regional scale, ozone is considered a regional air pollutant. Motor vehicles are a primary source of NO_X and ROG.

Table 5-1
Federal and California Ambient Air Quality Standards

Pollutant	Averaging Time	Federal[a]	State
O_3	1 hour	0.12 ppm	0.09 ppm
	8 hour	0.08 ppm	None
PM_{10}	24 hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	Annual Geometric Mean	None	30 $\mu g/m^3$
	Annual average	50 $\mu g/m^3$	None
$PM_{2.5}$	24 hour	65 $\mu g/m^3$	None
	Annual average	15 $\mu g/m^3$	None
CO	1 hour	35 ppm	20 ppm
	8 hour	9 ppm	9.0 ppm
	8 hour (Lake Tahoe)	None	6 ppm
NO_2	1 hour	None	0.25 ppm
	Annual average	0.053 ppm	None
Pb	30 days	None	1.5 $\mu g/m^3$
	Calendar quarter	1.5 $\mu g/m^3$	None
SO_2	1 hour	None	0.25 ppm
	3 hour	0.5 ppm [b]	NA
	24 hour	0.14 ppm	0.04 ppm
	Annual average	0.03 ppm	None
Sulfates	24 hour	None	25 $\mu g/m^3$
Hydrogen Sulfide	1 hour	None	0.03 ppm

Source: CARB ADAM website, www.arb.ca.gov/aqs/aaqs2.pdf
Notes:
[a] Primary NAAQS unless otherwise noted
[b] Secondary NAAQS

Table 5-2
Maximum Measured Concentrations at Roseville Monitoring Station (on North Sunrise Boulevard)

Pollutant	Averaging Time	Units	Standards		Maximum Measured Concentration [b]				
			Federal	State	1997	1998	1999	2000	2001
O_3	1 hour	ppm	0.12	0.09	***0.111***	***0.153***	***0.136***	***0.128***	***0.122***
	8 hour	ppm	0.08	None	***0.091***	***0.117***	***0.113***	***0.100***	***0.102***
PM_{10}	24 hour	$\mu g/m^3$	150	50	50.0	***67.0***	***89.0***	***58.0***	***59.0***
	Annual geometric mean	$\mu g/m^3$	None	30	20	19	22	22	21
	Annual average	$\mu g/m^3$	50	None	21	22	26	23	24
$PM_{2.5}$	24 hour	$\mu g/m^3$	65	None	NA	NA	79.0	51.0	49.0
	Annual average	$\mu g/m^3$	15	None	NA	NA	13.4	12.2	11.9
CO	1 hour	ppm	35	20	3.7	4.2	3.9	3.2	3.1
	8 hour	ppm	9	9.0	2.1	2.4	2.2	2.4	1.9
NO_2	1 hour	ppm	None	0.25	.080	.097	.093	.082	0.086
	Annual average	ppm	0.053	None	0.015	0.016	0.012	0.017	0.015

Source: CARB ADAM website, www.arb.ca.gov/adam, June 10, 2002
EPA AIRData website, http://www.epa.gov/air/data/index.html, June 10, 2002

Note:
[a] Items in bold and italics exceed either the federal or state standard
NA = not available

As shown in Table 5-2, O_3 concentrations have exceeded federal and state ambient air quality standards at the Roseville monitoring station. However, since 1998, concentrations have gradually dropped as a result of greater controls of stationary and mobile sources (except for a slight increase in the 8-hour average O_3 measurements between 2000 and 2001). These violations, together with violations throughout the region, have resulted in the Sacramento Air Quality Maintenance Area, a broader area of Sacramento which includes western Placer County, being designated as in severe non-attainment of the federal 1-hour O_3 standard. Placer County is also designated as being in non-attainment of the state ozone standard.

Particulate Matter

Particulate matter is generally composed of particles in the air such as dust, soot, aerosols, fumes, and mists. Of particular concern are inhalable particulates which have aerodynamic diameters of 10 micrometers or less (PM_{10}). A subgroup of these particulates is fine particulates (particles with aerodynamic diameters less than 2.5, $PM_{2.5}$), which have very different characteristics, sources, and potential health effects than coarse particulates (particles with aerodynamic diameter between 2.5 to 10 micrometers). Coarse particulates are generated by sources such as windblown dust, agricultural fields, and dust from vehicular traffic on unpaved roads. $PM_{2.5}$ are generally emitted from activities such as industrial combustion, vehicle exhaust, and residential wood-burning stoves and fireplaces. $PM_{2.5}$ are

also formed in the atmosphere when gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds emitted by combustion activities are transformed by chemical reactions. PM_{10} affects breathing and respiratory systems and in particular can damage lung tissue, cause cancer, and lead to premature death. Separate standards for the $PM_{2.5}$ were set in 1997, since these smaller particles can reach even lower regions of the respiratory tract and cause their own unique adverse health effects.

Table 5-2 shows that measured concentrations at the Roseville monitoring station have not exceeded federal PM_{10} standards over the past five years, and $PM_{2.5}$ measurements have not exceeded federal $PM_{2.5}$ standards over the last two years. However, measured concentrations of PM_{10} have exceeded the state 24-hour average standard. Similar trends have been seen throughout Placer County; this has resulted in the region being classified as in non-attainment of the state 24-hour average standard.

Carbon Monoxide

CO is an odorless, colorless gas that can impair transport of oxygen in the bloodstream and aggravate cardiovascular disease, and that can cause fatigue, headache, confusion, and dizziness. CO forms through incomplete combustion of fuels from vehicles, wood stoves, and fireplaces. In Placer County, vehicular exhaust is a major source of CO. CO tends to dissipate rapidly into the atmosphere and consequently is generally a concern at the local level, particularly at major intersections.

CO concentrations at the Roseville monitoring station have been well below federal and state 1-hour and 8-hour average standards for at least the past nine years. In fact, all of Placer County is in attainment of the CO standards.

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that can irritate the lungs, cause pneumonia, and lower resistance to respiratory infections. Oxides of nitrogen (NO_X), which include NO_2, are an important precursor to O_3 and acid rain. NO_X forms when fuel is burned at high temperatures and principally comes from transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Table 5-2 shows that measured concentrations of NO_2 have been well below the federal and state standards at the Roseville monitoring station for at least the past nine years. With similar trends throughout the region (and state), the area is well within federal and state NO_2 standards.

Sulfur Dioxide

High concentrations of SO_2 affect breathing and may aggravate existing respiratory and cardiovascular disease. SO_2 is also a primary contributor to acid deposition, which causes acidification of lakes and streams and can damage trees, crops, historic buildings, and statues. In addition, sulfur compounds in the air can contribute to visibility impairment. The major source of SO_2 is fuel-burning equipment in fuel oil and coal.

SO_2 is not measured at the Roseville monitoring station. However, stations throughout California have measured concentrations well within federal and state standards.

5.1.3 Existing Emission Sources

The concentrations presented above are a result of emissions from various sources. Anthropogenic sources of emissions are generally divided into three types: stationary, area-wide, and mobile sources. The contribution of each source varies from region to region. CARB maintains an emission inventory to determine the sources and quantities of air pollution within the state's counties and air basins. Table 5-3 presents a summary of the 2001 pollutant emission data for Placer County, including the percent contribution of each type. Emissions from mobile sources constitute the majority of ROG, CO, NO_X, and SO_X emissions in the County. Area-wide emissions contribute more than 90 percent of the PM_{10} emissions in the County.

Table 5-4 lists the percent of total emission attributable to CARB source categories that would at least partially include emissions from construction activities. Not all of the emissions listed as "unpaved road dust" and "off-road equipment" in the table would be from construction activities. However, even considering only emissions from "area-wide: construction and demolition," the table shows that the sum of all construction activities, though short term, contributes to at least 16.7 percent of the total PM_{10} emissions in the region.

Table 5-3
Summary of Emissions in Placer County

Category		ROG	CO	NO_X	SO_X	PM_{10}
Stationary Sources	Emissions (tons/day)	7.00	1.24	1.54	0.02	1.02
	Percent of Total	23.0%	0.6%	5.7%	1.8%	4.3%
Area-Wide	Emissions (tons/day)	6.66	48.44	1.07	0.16	21.46
	Percent of Total	22%	25%	4%	14%	91%
Mobile Sources	Emissions (tons/day)	16.82	144.23	24.53	0.96	1.02
	Percent of Total	55%	74%	90%	84%	4%
Natural	Emissions (tons/day)	0.02	0.34	0.01	0.00	0.06
	Percent of Total	0.066%	0.175%	0.037%	0.0%	0.255%
Total	Emissions (tons/day)	30.50	194.25	27.15	1.14	23.56

Source: CARB website, http://arbis.arb.ca.gov/emisinv/emsmain/emsmain.htm, June 10, 2002.

Table 5-4
Percentage of Total Emissions from CARB Source Categories
Partially Attributable to Construction Activities

Construction Related Categories	ROG	CO	NO_X	SO_X	PM_{10}
Area-Wide: Construction and Demolition	0	0	0	0	16.7%
Area-Wide: Unpaved Road Dust	0	0	0	0	27.0%
Area-Wide: Fugitive Windblown Dust	0	0	0	0	0.6%
Mobile Source: Off-Road Equipment	3.4%	5.5%	13.9%	41.2%	1.1%

Source: CARB website, http://arbis.arb.ca.gov/emisinv/emsmain/emsmain.htm, June 10, 2002.

5.2 REGULATORY SETTING

Air Quality in the project area is regulated by several agencies, including EPA, CARB, and the Placer County Air Pollution Control District (PCAPCD). Each of these agencies develops rules and regulations to attain various air quality goals. Although EPA regulations may not be superseded, both state and local regulations may be more stringent than federal air quality regulations. In general, federal and state agencies are responsible for regulating emissions from on-road and off-road vehicles and establishing air quality standards. Local APCDs are responsible for implementing federal and state regulations, permitting stationary sources of air pollution, and developing plans aimed at attaining ambient air quality standards. Emissions from indirect sources such as automobile traffic associated with development projects are addressed through the PCAPCD air quality plans.

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. Since air quality is sometimes regulated on a county-by-county basis and sometimes on a regional basis (e.g., within an air basin), air quality regulations and planning efforts in Placer County are intricate and require close coordination between several agencies. For example, since the southwestern part of Placer County lies within the SVAB, PCAPCD coordinates with other SVAB air districts (e.g., Sacramento Metropolitan Air Quality Management District) to resolve basin-wide air pollution problems.

The following three subsections describe in more detail the roles and requirements at the three levels of government (federal, state, and local) and how these levels interact with each other to maintain and improve air quality.

5.2.1 Federal

As discussed previously, the federal government, through the U.S. EPA, has established primary and secondary NAAQS for criteria pollutants under the provisions of the Clean Air Act (see Table 5-1). EPA has also promulgated new 8-hour O_3 and $PM_{2.5}$ ambient air quality standards. These standards have been upheld in the courts, and EPA and states are now working together to implement them.

A large region consisting of Sacramento and parts of Yolo, Placer (including the project area), and Solano counties have received a severe non-attainment designation for the ozone NAAQS. This non-attainment area is called the Sacramento Air Quality Maintenance Area. The EPA, under the provisions of the Clean Air Act, requires each state with regions that have not attained the NAAQS to prepare a plan, called the State Implementation Plan (SIP), detailing how these standards are to be met in each local area. The SIP is not a single document but a compilation of new and previously submitted plans, programs, district rules, state regulations, and federal controls. In the state of California, CARB is the lead agency for developing this SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards the SIP revisions to EPA for approval and publication in the Federal Register.

The Air Districts within the non-attainment area have developed the 1994 Sacramento Area Regional Ozone Attainment Plan to satisfy the SIP requirement. This Attainment Plan identifies source controls and trip reduction strategies aimed at achieving the federal ozone standard by the year 2005. The attainment strategy requires reductions of approximately 38 percent of ROG and 40 percent of NO_X (ozone precursors) from 1990 baseline emissions. The strategy relies heavily on mobile source NO_X reductions since, as shown previously, mobile sources generate approximately 90 percent of regional NO_X emissions. If Placer County does not achieve the federal ozone standards by 2005, the federal government can withhold federal transportation funding from the county as well as institute increased controls on industrial source emissions.

5.2.2 State

The state has established its own ambient air quality standards for criteria air pollutants which are, in general, more stringent than the federal standards (see Table 5-1). CARB, the state's air quality management agency, enforces these standards by regulating mobile emission sources and oversees activities of the County APCDs and regional AQMDs. As stated previously, the proposed project is located in a non-attainment area for state O_3 and PM_{10} standards.

The California Clean Air Act requires that areas exceeding the state ambient air quality standards develop a plan aimed at achieving those standards. The California Health and Safety Code Section 40914 requires air districts to design such a plan that achieves an annual reduction in district-wide emissions of five percent or more, averaged every consecutive three-year period. To satisfy this requirement, PCAPCD has developed an Air Quality Attainment Plan (AQAP) outlining strategies for achieving the state ambient air quality standards. The AQAP outlines both stationary and mobile emission source control measures and emphasizes Transportation Control Measures and Indirect Source Control Measures to reduce mobile source emissions.

5.2.3 Local

At the local level, PCAPCD regulates air quality by establishing local air quality regulations, permitting stationary sources, and reviewing and planning activities related to air quality. PCAPCD is also

responsible for enforcing and implementing federal and state standards. Through its enhanced CEQA review process, PCAPCD has developed significance thresholds for land use projects that generate air pollutants. These thresholds apply to both short-term and long-term air pollutant emissions. Projects with the potential to generate emission exceeding the thresholds would have a significant impact on air quality. These significance thresholds are discussed in Section 5.3.1.

Placer County also manages air quality through land use and development planning practices. The Placer County General Plan contains an Air Quality Element which defines county-wide goals and policies aimed at improving air quality. These elements are designed to be consistent with the federal and state air quality attainment plans.

The City of Roseville also has an Air Quality Element in the City's General Plan that is consistent with PCAPCD plans and policies. This element contains goals, policies, and implementation measures pertaining to air quality in the City and encourages cooperation between agencies involved in improving regional air quality. The policies are divided into five categories that affect air quality and are listed below (Roseville General Plan, November 18, 1992):

1. General
   a) Cooperate with other agencies to develop a consistent and effective approach to air pollution planning.
   b) Work with the Placer County Air Pollution Control District to monitor air pollutants of concern on a continuous basis.
   c) Develop consistent and accurate procedures for evaluating the air quality impacts of new projects.
   d) As part of the development review process, develop mitigation measures to minimize stationary and area source emissions.

2. Transportation and Circulation
   a) Develop transportation systems that minimize vehicle delay and air pollution.
   b) Develop consistent and accurate procedures for mitigating transportation emissions from new and existing projects.
   c) Encourage alternative modes of transportation including pedestrian, bicycle and transit usage.

3. Land Use
   a) Separate air pollution-sensitive land uses from sources of air pollution.
   b) Encourage land use policies that maintain and improve air quality.

4. Energy Conservation
   Conserve energy and reduce air emissions by encouraging energy efficient building designs and transportation systems.

5. Hazardous Materials
   Protect City residents from the risks involved in the transport, distribution, storage, use, and disposal of hazardous materials.

5.3 IMPACTS

5.3.1 Significance Criteria

The air quality impacts of a project are considered significant if any of the following are true:

- Construction or operation of the project results in emissions that exceed 82 lb/day for either ozone precursors (NO_X or ROG), PM_{10}, or SO_X, or 550 lb/day for CO. These emission thresholds have been developed by PCAPCD.
- Project emissions lead to exceedances of the federal or state ambient air quality standards. In instances where existing concentrations already exceed the standard, an emission increase exceeding five percent of the applicable standards would be significant.
- The proposed project conflicts with the goals and policies in the State Implementation Plan, local Air Quality Attainment Plan, or the City General Plan.
- The proposed project has the potential to frequently expose members of the public to objectionable odors.

5.3.2 Construction Impacts

IMPACT AQ-1:	Construction activities would increase short-term criteria air pollutant emissions.
SIGNIFICANCE:	Short-term: Significant Long-term: Less than significant
MITIGATION:	Mitigation Measure AQ-1 (Develop and implement a Construction Emission/Dust Control Plan).
RESIDUAL SIGNIFICANCE:	Short-term: Significant Long-term: Less than significant

In general, construction activities generate short-term criteria pollutant emissions, particularly PM_{10}. The potential emissions from the proposed construction were calculated and compared to the emission thresholds presented in Section 5.3.1. The construction planned for the project consists of three major activities for the North and South basins:

1. excavation and grading of the bypass and low flow channels,
2. fill and compaction of the embankments, and
3. construction of the inlet and outlet structures.

As a worst case, the analysis assumed that all three groups of activities would occur on the same day and that the North and South basins would be worked on concurrently. Existing facilities would also be demolished and removed off site and a rock access road would be constructed on the embankments. However, these two activities are not expected to take place on the same day that the construction is most active.

Emissions from the above activities can be categorized into three source groups:

1. fugitive dust from earthmoving activities
2. construction equipment exhaust, and
3. worker vehicle exhaust.

Fugitive dust emissions were estimated using emission factors from U.S. EPA's *Compilation of Air Pollutant Emission Factors, AP-42* (Volume 1, 5th Edition) and assuming 64 percent of the total suspended particulates (TSP) are PM_{10} (64 percent factor from *Bay Area Air Quality Management CEQA Guidelines*, 1999). Exhaust emissions from construction equipment were calculated using *Sacramento Metropolitan Air Quality Management District (SMAQMD) Draft CEQA Guidelines* (2001). CARB's Emfac2000 emission factor model (version 2.2) was used to estimate exhaust emissions from workers commuting to and from the site.

The emission factors were used in conjunction with the following data to estimate worst-case construction emissions:

- Work to start in 2004 (use early start year for conservatism)
- Number of Worker Vehicles–
  65 vehicles in one day (assume travel 10 miles per one-way trip)
- Construction Equipment Vehicles:

Table 5-5
Equipment Usage on the Most Active Day of Construction

Type of Equipment	Maximum Equipment Usage Per Day
Scraper	15
Grader	2
Bulldozer	6
Water Truck	4
Excavator	2
Compactor	4
Concrete Mixer	15 round trips/day
Trucks/Fork Lift	4

- Amount of Material Excavated:
  18,000 cubic yards/day
- Amount of Material Used for Embankment:
  18,000 cubic yards/day

More details regarding construction emission calculations are presented in Appendix C.

Using the above methodology, the total exhaust and fugitive dust emissions during construction were calculated and are shown in Tables 5-6 and 5-7.

Table 5-6
Exhaust Emissions (lbs/day)

	ROG	NO_X	PM_{10}	CO	SO_X
Vehicle Exhaust from Worker Trips	3.15	2.31	0.11 [(a)]	27.14	0 [(b)]
Equipment Exhaust	117.9	870	33.8	873	183

Source: Worker vehicle emission factors from on Emfac2000 v2.2
Construction equipment emission factors from SMAQMD Draft CEQA Guidelines, September 2001

Notes:
[(a)] Worker vehicle PM_{10} emissions include tire and brake wear.
[(b)] Worker vehicle SO_X emissions assumed negligible given the small number of vehicle trips.

Table 5-7
Fugitive Dust Emissions (lbs/day)

	PM_{10}	
	Uncontrolled	**50% Control**
Excavation	1,062	531
Embankments	751	375
Unpaved Roads	15.9	7.95
Total	1829	914

Source: Emission factors based on EPA's AP-42, 5th Edition.

Tables 5-6 and 5-7 show that emissions of all criteria pollutants are predicted to exceed the PCAPCD's significance thresholds of 82 lb/day for ROG, NO_X, PM_{10}, and SO_X, and 550 lb/day for CO on the worst day. As Table 5-7 demonstrates, even when taking into account watering active sites twice daily (which can generally achieve 50 percent reduction in emissions), the PM_{10} emission would be well above the thresholds. Mitigation Measure AQ-1 is recommended to reduce the impacts from construction activities. This mitigation measure involves developing and implementing a Construction Emission/Dust Control Plan in accordance with the requirements of the PCAPCD. The requirements of this plan are listed in Section 5.4. In addition, the construction activities would be subject to dust control measures outlined in

the City's grading ordinance. These measures will be incorporated into the PCAPCP dust control plan. Watering active sites combined with the rigorous set of other mitigation measures could potentially achieve a 75 percent reduction in emissions. However, even with a 75 percent reduction in emissions, emissions from the construction activities would remain significant. Therefore, the construction activities would have a significant, unavoidable short-term impact on air quality even with implementation of the mitigation measure.

5.3.3 Consistency with Applicable Plans

IMPACT AQ-2:	Inconsistent with the Placer County Air Quality Attainment Plan (AQAP), Placer County General Plan, and Roseville General Plan
SIGNIFICANCE:	Significant
MITIGATION:	None Identified
RESIDUAL SIGNIFICANCE:	Significant

The proposed project is not included in the most recent growth projections of either Placer County or the City of Roseville. The project would accommodate retention requirements of some existing and entitled projects within the City of Roseville, and a portion of the approved Sunset Ranches project in Rocklin (the proposed North Rocklin Annexation Area). However, the basin could also induce substantial population growth as a result of its accommodation of potential development not considered in any current city or county plans. Such development could include the proposed West Roseville Specific Plan and the potential future development of the remainder of the MOU area beyond that required for the West Roseville Specific Plan. This growth is discussed in more detail in Chapter 7.0, Population and Housing, of the Initial Study (Appendix A-2).

By indirectly accommodating growth not included in city or county general plans, the proposed project would also indirectly increase emissions of non-attainment pollutants (ozone and PM_{10}). While these future projects accommodated by the proposed project would undergo separate environmental review, and require their own mitigation measures to reduce air quality impacts, the proposed project's indirect impacts would conflict with the AQAP.

No mitigation measures applicable to the proposed project were identified that would reduce this plan inconsistency to a less than significant level. Therefore, this impact would be significant and unavoidable.

5.4 MITIGATION MEASURES

Mitigation Measure AQ-1: Develop and implement a Construction Emission/Dust Control Plan in accordance with the requirements of the Placer County Air Pollution Control District.

Mitigation Measure AQ-1 applies to Impact AQ-1.

This plan shall consider the recommended mitigation measures outlined below. At a minimum, the plan shall contain the first six measures.

1. The applicant shall submit to the District and receive approval of the Construction Emission/Dust Control Plan prior to groundbreaking.
2. Construction equipment exhaust emissions shall not exceed PCAPCD District Rule 202 *Visible Emission* limitations.
3. The prime contractor shall submit to the District a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment, 50 horsepower or greater, that will be used 40 or more hours for the construction project. District personnel, with assistance from the California Air Resources Board, would conduct initial Visible Emission Evaluations of all heavy-duty equipment on the inventory list.
4. An enforcement plan shall be established to evaluate weekly project-related on- and off-road heavy-duty vehicle engine emission opacities, using standards as defined in California Code of Regulations, Title 13, Sections 2180 – 2194. An Environmental Coordinator, CARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely evaluate project-related, off-road and heavy-duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified and the equipment must be repaired within 72 hours.
5. At least 50 percent of the heavy-duty off-road equipment included in the inventory shall be powered by CARB certified off-road engines, as follows:

175 hp – 750 hp	1996 and newer engines
100 hp – 174 hp	1997 and newer engines
50 hp – 99 hp	1998 and newer engines

   In lieu of or in addition to this requirement, an applicant can use other measures to reduce particulate matter and nitrogen oxide emissions from their project through the use of emulsified diesel fuel and/or particulate matter traps. The District should be contacted to discuss these alternative measures.
6. No open burning of removed vegetation.
7. Clean earth moving construction equipment with water once per day.
8. Water all active construction areas at least twice daily.
9. Cover all trucks hauling loose materials or maintain at least two feet of freeboard.
10. Spread soil stabilizers on unpaved roads and employee/equipment parking areas.
11. Apply soil stabilizers to inactive construction areas (previously graded areas inactive for 96 hours or more).

12. Employ construction activity management techniques, such as reducing the number of pieces used simultaneously; increasing the distance between emission sources; reducing or changing the hours of construction; and scheduling activity during off-peak hours.
13. Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less.
14. Suspend all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.
15. Install wheel washers or wash all trucks and equipment leaving the site.
16. Keep idling time of any vehicle or equipment to 10 minutes or less.
17. Use low sulfur fuel for stationary construction equipment.
18. Minimize construction activities near the adjacent residences.

6.0 BIOLOGICAL RESOURCES

6.1 ENVIRONMENTAL SETTING

This section describes the existing biological resources on the project site. The project site is defined as the entire Reason Farms property, as shown in Figure 6-1. Information presented in this section is based on the following sources:

- Previous studies conducted in the project site (ECORP, 2001a, 2001b; URS/PWA, 2002; URS 2002)
- Field surveys of the project site conducted on January 9, March 15, and April 23, and August 21, 2002 by URS biologists;
- Other studies conducted in the immediate vicinity (ESA, 1996; Foothill Associates, 2001; Glazner, 2000; Miriam Green Associates, 2000; Thomas Reid Associates, 1999; URS, 2001);
- Pertinent literature and information from individuals knowledgeable about the study area, and
- Existing data on occurrences of special-status species, including the California Natural Diversity Data Base (CDFG, 2002a), a U.S. Fish and Wildlife Service list of special status species that occur or have historically occurred in the U.S. Geological Survey (USGS) "Pleasant Grove" and "Roseville" 7.5 minute quadrangles (Appendix D-1), and a previous special status species report (ECORP, 2001a).

Field Surveys

An aerial reconnaissance of the project site was conducted by URS biologists on January 9, 2002 from a helicopter. The extent of wetlands and upland habitat types were mapped from the air because it was too wet to traverse the site via foot or vehicle. Wetlands and habitat features were mapped onto USGS topographic maps and aerial photographs.

URS biologists conducted additional land-based surveys on March 15 and April 23, 2002. The objective of these surveys was to map and describe biological communities, develop a list of plant and animal species on the project site, verify the wetland delineation conducted by ECORP (2001b), conduct additional wetland delineations, determine the potential for special-status species to occur on the project site, and assess impacts of the proposed project to biological resources. Aerial photographs and an existing wetland delineation (ECORP, 2001b) were used to map wetland and upland habitats. Wetland data points, wetland delineation boundaries, and rare plant occurrences were mapped using a global positioning system (GPS) receiver.

A field survey on August 21, 2002 was conducted to determine the extent of wetlands and other Waters of the U.S. at the location where the proposed access road to the North Basin would be constructed over the North Branch of Pleasant Grove Creek.

6.1.1 Plant Communities, Wildlife Habitats, and Waters of the U.S. on the Project Site

The project site is located in western Placer County in a transitional zone between the Sierra Nevada foothills and the lowlands of the Central Valley (Placer Legacy, 2000). Undeveloped areas support a mix

of cultivated rice fields, grasslands, perennial or seasonal streams, riparian woodland, freshwater marsh, and vernal pools and other seasonal wetlands. Table 6-1 identifies the approximate acreages of plant communities and wildlife habitats present on the project site, and Figure 6-1 shows their location.

Waters of the U.S., including wetlands, have been delineated on the project site in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual. ECORP (2001b) delineated the entire project site in 2001 except for 170 acres located in the southwestern corner of the project site, south of Pleasant Grove Creek. URS biologists delineated the waters in that 170-acre area and the immediate vicinity on April 23, 2002. On August 21, 2002, URS biologists delineated the Waters of the U.S. where the proposed access road to the North Basin crosses the North Branch of Pleasant Grove Creek. The total area of waters of the U.S. on the project site are summarized by type in Table 6-2.

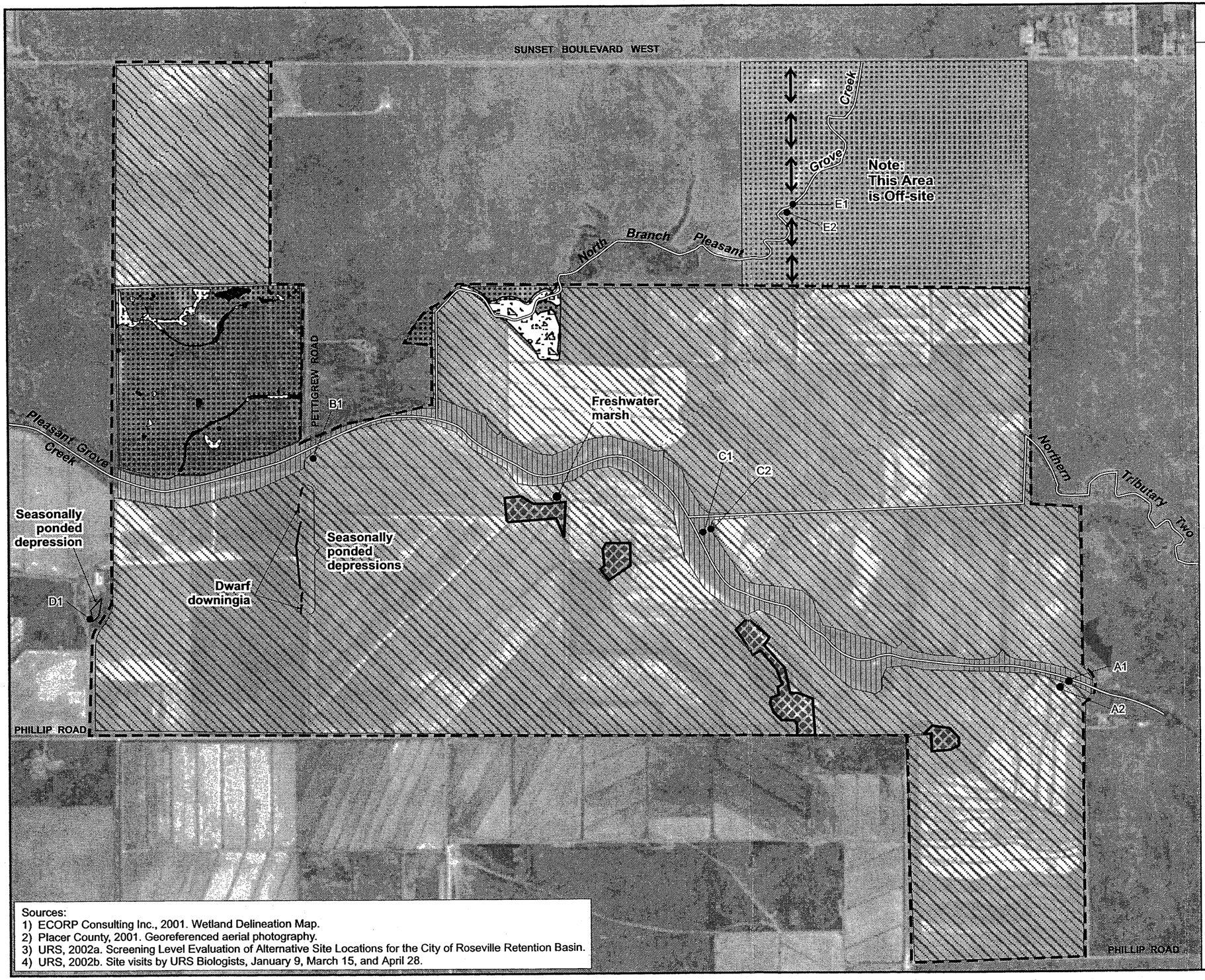
Table 6-1
Plant Communities and Wildlife Habitats on the Project Site

Type	Existing Acreage
Cultivated Rice Fields	1,286
Grasslands	107
Seasonal or Perennial Stream	53
Riparian Forest	21
Developed	15
Freshwater Marsh	13
Vernal Pools, Seasonal Swales, and other Seasonal Wetlands	5
Total	1,500

Table 6-2
Formally Delineated Waters of the U.S. on the Project Site

Classification	Type	Existing Acreage
Non-wetland Water of the U.S.	Seasonal Stream	53.35
Wetland	Freshwater Marsh	13.23
Wetland	Seasonal Wetland	2.36
Wetland	Seasonal Swale	1.57
Wetland	Vernal Pool	0.94
Total		71.45

Cultivated Rice Field – Rice fields on the project site have been leveled and terraced to facilitate seasonal inundation necessary to cultivate rice. Fields are typically inundated during the growing season from late May to early August. Some of the fields are flooded again during the winter months after the end of pheasant hunting season, to attract waterfowl for hunting. Native vegetation is excluded from the



Sources:
1) ECORP Consulting Inc., 2001. Wetland Delineation Map.
2) Placer County, 2001. Georeferenced aerial photography.
3) URS, 2002a. Screening Level Evaluation of Alternative Site Locations for the City of Roseville Retention Basin.
4) URS, 2002b. Site visits by URS Biologists, January 9, March 15, and April 28.

LEGEND

HABITAT TYPES
- Grassland
- Developed
- Rice Field
- Riparian Forest

WETLAND FEATURES
- Freshwater Marsh
- Seasonally Ponded Depression
- A1 Wetland Delineation Data Point
- Seasonal Wetland
- Seasonal Swale
- Vernal Pool
- Seasonal Stream
- Access Road

N

1750 0 1750 3500
Scale (feet)

Figure 6-1
EXISTING BIOLOGICAL RESOURCES

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

URS PWA

10/14/02 vsa \28065805\F6-1_ExistBioRes.cdr

cultivated portions of the rice fields by application of herbicides. Cultivated and/or fallow rice fields encompass approximately 1,286 acres throughout the project site. Many species of migratory waterfowl, cinnamon teal (*Anas cyanoptera)*, Canada goose (*Branta canadensis*), and American widgeon (*Anas americana*) occupy flooded rice fields during the winter months and forage there during the spring when the water is low.

Grassland – Grassland is typical of upland areas that have not been previously cultivated. Typical species include ryegrass (*Lolium* sp.), barley (*Hordeum* sp.), ripgut brome (*Bromus diandrus*), and filaree (*Erodium* sp.). Approximately 107 acres of annual grassland occur on the project site north of Pleasant Grove Creek, and approximately 0.92 acre of grasslands exists off site in the area of the proposed North Basin Access Road. Grasslands typically provide habitat for species such as western meadowlark (*Sturnella neglecta*), red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferus*), western fence lizard (*Sceloporus occidentalis*), voles (*Microtus* sp.), deer mice (*Peromyscus maniculatus*), coyote (*Canis latrans*), and other species.

Seasonal and/or Perennial Stream – These are areas contained within the ordinary high water mark of seasonal or perennial streams, creeks, or rivers. Pleasant Grove Creek and all of its tributaries are considered seasonal or perennial streams. Tributaries include the Northern Branch of Pleasant Grove Creek, and the channelized drainage ditch, Northern Tributary Two. Historically, these features were likely seasonal in nature, but due to runoff from irrigation of the adjacent cultivated fields, Pleasant Grove Creek and its tributaries contain water year-round. The 53 acres of seasonal and/or perennial streams on the project site represents the combined area of waters below the ordinary high water mark and the adjacent wetland waters of the U.S. (ECORP, 2001b). Fish species likely to occur in Pleasant Grove Creek include California roach (*Lavinia symmetricus*), Sacramento sucker (*Catostomus occidentalis*), black bullhead (*Ictalurus melas*), bluegill (*Lepomis macrochirus*), smallmouth bass (*Micropterus dolomieui*), and spotted bass (*Micropterus punctulatus*). Local anglers report catching catfish (Family Ictaluridae) and bass (Family Percichthyidae) in Pleasant Grove Creek (Ruiz 2002).

Riparian Forest – Riparian forest borders most of the central part of the main branch of Pleasant Grove Creek. Typical species include Goodding's willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*) and understory herbaceous vegetation. Of the riparian forest that borders Pleasant Grove Creek, 21 acres occur outside of the ordinary high water mark. The majority of the 53 acres of seasonal and/or perennial stream area contains additional riparian forest overstory. The riparian woodland on Pleasant Grove Creek supports a high diversity of resident and migratory bird species, such as scrub jay (*Aphelocoma coerulescens*), black-crowned night-heron (*Nycticorax nycticorax*), ruby-crowned kinglet (*Regulus calendula*), Wilson's warbler (*Wilsonia pusilla*), Lincoln's sparrow (*Melospiza lincolnii*), great horned owl (*Bubo virginianus*), and Bullock's oriole (*Icterus bullockii*).

Developed – There are 15 acres of developed land on the project site, including a farm compound, several residences, and associated roads, buildings, and ornamental vegetation. Developed land provides low-

quality habitat for plant and wildlife species. Typical species include non-native species such as European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

Freshwater Marsh – Freshwater marsh habitats are characterized by saturated or periodically flooded soils that support some combination of rushes (*Juncus* spp.), sedges (*Cyperus* spp.), cattail (*Typha* spp.), and bulrush (*Scirpus* spp.). Approximately 9 of the 13 acres of freshwater marsh on the project site are located at one site, adjacent to the northernmost tributary of Pleasant Grove Creek (Figure 6-1). An additional 4 acres of freshwater marsh exists just south of Pleasant Grove Creek in the central part of the project site. Freshwater marsh on the project site is dominated by broad-leaf cattail (*Typha latifolia*) and Pacific rush (*Juncus effusus*). Bird species such as mallard (*Anas platyrhynchos*), American widgeon (*Anas americana*), and red-winged blackbirds (*Agelaius phoeniceus*) use the freshwater marsh on the project site.

Vernal Pools, Seasonal Swales, and other Seasonal Wetland – Two types of vernal pools occur in Placer County: northern hardpan vernal pools, and northern volcanic mudflow vernal pools (Brussard, 1999). All of the vernal pools on the project site are hardpan vernal pools formed on coarse-textured alluvium with an impermeable or semi-permeable hardpan. Vernal pool vegetation is dominated by species such as coyote thistle (*Eryngium vaseyi*), popcorn flower (*Plagiobothrys stipitatus* var. *micranthus*), downingia (*Downingia pusilla*), quaking grass (*Briza minor*), and buttercup (*Ranunculus bonariensis*). The proposed project site contains approximately 4.87 acres of seasonal wetlands, including vernal pools and seasonal swales. Most of these features are located within grasslands in the northwestern parcel, but several other small seasonal wetlands are located along a north-south access road within the areas of the South Basin (Figure 6-1). Table 6-2 lists the area of Waters of the U.S. on the project site by type, including all the seasonal wetlands. Invertebrates, including various aquatic insects and vernal pool fairy shrimp (*Branchinecta lynchi*) may occupy vernal pools and other seasonal wetlands on the project site.

6.1.2 Special-Status Species

Special-status plant and animal species are in the following categories:

- Plants and animals listed or proposed for listing as threatened or endangered under the federal ESA (50 Code of Federal Regulations [CFR] 17.1 and various notices in the Federal Register [FR]);
- Plant and animal candidates for possible future listing as threatened or endangered under the federal ESA (plants – 62 FR 49397; animals – 54 FR 554);
- Birds species protected by the Migratory Bird Treaty Act (16 USC §§703-712)
- Plants and animals that meet the definition of rare or endangered under the California Environmental Quality Act (CEQA) (CEQA Guidelines, Section 15380);
- Plants and animals listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 California Code of Regulations 670.5);

- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B and 2 in CNPS, 2001);
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS, 2001);
- Animal species of special concern to California Department of Fish and Game (CDFG and PRBO, 2001 [birds]; Williams, 1986 [mammals]; Jennings and Hays, 1994 [reptiles and amphibians]; and Moyle et al., 1995 [fish]); and,
- Animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

The full list of special-status species evaluated for the proposed project, their preferred habitat, and likelihood to occur on the project site can be found in Appendix D-2. Species accounts (below) are provided for all species that are considered reasonably likely to occur within the vicinity of the project site. A list of special-status species determined to have potential to occur on the proposed project site is shown in Table 6-3.

Table 6-3
Special-Status Species with Potential to Occur on the Retention Basin Site

Scientific Name	Common Name
Threatened or Endangered Species	
Gratiola heterosepala	Boggs Lake hedge hyssop
Elanus leucurus	white-tailed kite
Buteo swainsoni	Swainson's hawk
Grus canadensis tabida	greater sandhill crane
Branchinecta lynchi	vernal pool fairy shrimp
Lepidurus packardi	vernal pool tadpole shrimp
Other Special-Status Species	
Downingia pusilla	dwarf downingia
Myotis yumanensis	Yuma myotis bat
Myotis ciliolabrum	small-footed myotis bat
Eumops perotis californicus	greater western mastiff bat
Asio flammeus	short-eared owl
Lanius ludovicianus	loggerhead shrike
Circus cyaneus	northern harrier
Phrynosoma coronatum frontale	California horned lizard
Clemmys marmorata	northwestern pond turtle
Linderiella occidentalis	California linderiella

6.1.2.1 Special-Status Plants

A list of special-status plants that could occur in the study area was compiled based on a California Natural Diversity Data Base records search (CDFG, 2002a), a review of the CNPS Inventory of Rare and Endangered Plants in California (CNPS, 2001), a list of special-status species provided by the USFWS with potential to occur in the Pleasant Grove and Roseville USGS quadrangle maps, and previous special-status plant survey information (ECORP, 2001a). The CNDDB record search did indicate the presence of several rare plants, but none mapped to the project site. Those plant species observed on the project site are indicated in Appendix D-3.

Habitats on the project site that have the potential to support special-status plant species include annual grassland, freshwater marsh, and vernal pool/seasonal wetlands. Appendix D-2 summarizes the legal status, distribution, habitat association and suitability of habitats in the study area for special-status plant species with the potential to occur in the study area.

Based on the review of CNDDB records, a USFWS-provided species list (Appendix D-1), other relevant information and studies, it was determined that one state listed plant species and one CNPS List 2 species have the potential to occur on the project site.

Listed Plant Species

Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is a state listed endangered species. It is also a CNPS 1B species. This annual herb is endemic to vernal pool habitats with clay soils, and has been recorded in 13 Central Valley counties, including Placer County. Boggs Lake hedge-hyssop blooms from April to June. The closest known occurrence is 9 miles southeast of the project site. URS biologists searched vernal pools and seasonal wetland habitat on the project site for Boggs Lake hedge-hyssop on April 23, 2002. Boggs Lake hedge-hyssop was not observed; however, a related species of hedge-hyssop (*Gratiola ebracteata*) was observed.

Other Special-Status Plant Species

The following special-status plant species are not expected to occur in the project site because no suitable habitat exists, fields surveys did not detect their presence, they have been extirpated from the area, or historical records indicate they do not occur: hispid bird's beak (*Cordylanthus mollis hispidus*), Sanford's arrowhead (*Sagittaria sanfordii*), and Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*).

Legenere (*Legenere limosa*) is a USFWS Species of Concern and is classified by CNPS as 1B. Generally found in pristine vernal pool habitat, this species' range has been greatly reduced over the past several decades. Legenere is documented in eleven counties, from Tehama County in the north to San Mateo County in the south. There are only four known occurrences in Placer County (CDFG, 2002b). Suitable habitat is present within the project site, but is somewhat degraded due to current and past agricultural

activities and non-native species. No occurrences of legenere were observed during reconnaissance level surveys of the project site.

Dwarf downingia (*Downingia pusilla*) has no federal or state status, but this species is included on the CNPS List 2. This small herb is generally found on clay soils in mesic valley and foothill grasslands, and vernal pools. It has been recorded from Merced, Mariposa, Napa, Placer, Sacramento, Shasta, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yolo counties. This species typically occurs in vernal pools with low overall vegetative cover. Fifteen occurrences are known from Placer County (CDFG, 2002b).

Dwarf downingia was recorded on the project site during surveys by URS biologists on April 23, 2002. The plants were observed on the western side of the project site within two seasonally ponded depressions (tire tracks) located along a north-south dirt access road. The locations of these populations were recorded with a GPS receiver and are mapped on Figure 6-1.

6.1.2.2 Special-Status Wildlife

Based on the review of CNDDB records, a USFWS-provided species list (Appendix D-1), other relevant information and studies, it was determined that 6 state or federally listed or fully protected species and 13 other special-status species have the potential to occur in the project site or immediate vicinity (Appendix D-4).

The following species are evaluated in this Draft EIR because suitable habitat for the species is present, there is a nearby record of the occurrence of the species, or the species was recorded on the project site: bank swallow, white-tailed kite, Swainson's hawk, mountain plover, greater sandhill crane, Central Valley spring-run chinook salmon, Central Valley fall-run chinook salmon, Sacramento Valley winter-run chinook salmon, Central Valley steelhead, vernal pool fairy shrimp, vernal pool tadpole shrimp, Valley elderberry longhorn beetle, Yuma myotis bat, small-footed myotis bat, greater western mastiff bat, western burrowing owl, short-eared owl, Lawrence's goldfinch, loggerhead shrike, Lewis' woodpecker, long-billed curlew, northern harrier, California horned lizard, northwestern pond turtle, western spadefoot, and California linderiella.

The following special-status wildlife species are not expected to occur in the project site because no suitable habitat exists, they have been extirpated from the area, or historical records indicate they do not occur: American peregrine falcon, Aleutian Canada goose, bald eagle, little willow flycatcher, western yellow-billed cuckoo, giant garter snake, California red-legged frog, Delta smelt, Sacramento splittail, San Joaquin pocket mouse, fringed myotis bat, long-legged myotis bat, long-eared myotis bat, Pacific western big-eared bat, tricolor blackbird, ferruginous hawk, white-faced ibis, grasshopper sparrow, Vaux's swift, black swift, black tern, rufous hummingbird, green sturgeon, and longfin smelt. Appendix D-2 contains a list of these species, their state and federal status, preferred habitat, and reason that they are not likely to occur on the project site.

Listed Wildlife Species

Bank Swallow. Nesting bank swallow (*Riparia riparia*) is listed as threatened under the California ESA. Typically associated with lowland habitats containing vertical, sandy banks or cliffs, this bird is a colonial nester. The project site was surveyed for potential bank swallow habitat. Northern Tributary Two has an extremely deep and relatively wide embankment where it joins the main branch of Pleasant Grove Creek, likely due to previous channelization and bank failure (URS/PWA, 2002). The steep banks and sandy soil may provide a suitable nesting substrate, but the confined bank area within the Northern Tributary Two is unlikely to provide a large enough space for this colonially nesting species. During site visits on March 15 and April 23, 2002, no bank swallows or nests were observed at this location.

White-Tailed Kite. The white-tailed kite (*Elanus leucurus*) is a state fully protected species. White-tailed kites are year-round residents of the Central Valley and are typically found foraging in agricultural areas, feeding on small mammals, birds, and reptiles (CPIF, 2000). They nest in tall trees near grassland or agricultural foraging areas. A pair of kites were recorded on the project site on both March 15 and April 23, 2002, but no nesting behavior was observed at that time. The nearest kite nest was recorded approximately three miles east of the project site (CDFG, 2002b).

Swainson's Hawk. Swainson's hawk (*Buteo swainsoni*) is listed as threatened under the California ESA. In California, Swainson's hawks nest in the Central Valley of California and in the juniper woodlands of Modoc County. Nests are typically found in scattered trees or along riparian corridors adjacent to annual grasslands, pastures, alfalfa, and other crops that provide foraging habitat (CDFG, 1994). Swainson's hawks also nest in urban areas, although the reproductive success of pairs in urban areas has been shown to be lower than that of birds that nest in rural areas (England et al., 1995). The current population of nesting Swainson's hawks in California is believed to be 10 percent of historic numbers due to loss of breeding habitat in the state and wintering habitats in Mexico, Central, and South America. Elimination of breeding habitat is the result of several land conversion activities, including loss of small farms with shelterbelts and tree plantings to larger agribusiness, increasing development of woody perennial crops (i.e., orchards and vineyards), and urban development (England et al., 1997).

Swainson's hawks forage primarily on small rodents and reptiles during the breeding season and on insects during the non-breeding period (England et al., 1997). Agricultural areas are most often used by foraging Swainson's hawks just after harvest or irrigation when prey populations become exposed or brought to the surface (Smallwood, 1995). The CDFG (1994) considers dry rice land and fallow fields to be foraging habitat for Swainson's hawk.

The Reason Farms site has mature trees along Pleasant Grove Creek suitable for nesting, and 1,286 acres of rice fields that would be suitable as foraging habitat during the portion of the year when they are dry. At least two active Swainson's hawk nests have been documented within ten miles of the project site during the last five years (CDFG, 2002b; Miriam Green Associates, 2000). Each of these nest sites is located to the east of the project site. Other records of the hawk have also been documented in the

vicinity (ESA, 1996; URS, 2001). No Swainson's hawks were observed on the site during reconnaissance level surveys on March 15 and April 23, 2002.

Mountain Plover. The mountain plover (*Chraradrius montanus*) is proposed for threatened status under the federal ESA and is a state species of concern. The mountain plover is a winter resident of California that is locally common in the Central Valley from Sutter and Yuba counties southward, and in the foothill valleys west of the San Joaquin Valley. Mountain plovers prefer heavily grazed native rangelands and recently cultivated contiguous croplands (Knopf and Rupert, 1995) for foraging, where they have a generalist's diet of invertebrates (Knopf, 1998). Alkali flats, now virtually nonexistent, were historically a common foraging habitat for mountain plovers.

The 107 acres of grassland on the project site have the potential to provide foraging habitat for wintering mountain plover, in areas that are not inundated with water. Cultivated rice fields would also potentially support foraging mountain plovers, during the times when they are not inundated. However, most rice fields, including those on the project site, are flooded during the winter months when mountain plovers would potentially be resident in California. Therefore, it is unlikely that mountain plovers would utilize the 1,286 acres of rice fields on the project site.

Greater Sandhill Crane. The greater sandhill crane (*Grus canadensis tabida*) is listed as threatened under the California ESA and is a fully protected species under the California Fish and Game Code. Sandhill cranes breed in the northeast counties of California and winter in the Sacramento and San Joaquin valleys where they forage in open grassland habitats, wetlands, and grain fields (corn, rice and wheat). This species has the potential to forage in rice fields on the project site during the winter. However, the project site is not located within range of breeding sandhill cranes.

Salmonids. Chinook salmon (*Oncorhynchus tshawytscha*) historically ranged from the Ventura River in California to Point Hope, Alaska (Federal Register, 2000). The general life history of the anadromous chinook salmon includes both freshwater and oceanic phases of development. Incubation, hatching, and emergence occur in freshwater, followed by migration to the ocean, at which time smoltification occurs. Maturation is initiated and completed upon return to freshwater habitats. Once maturation is complete, spawning occurs in natal streams.

The National Marine Fisheries Service (NMFS) classifies and lists salmon by Evolutionarily Significant Unit (ESU). "To be considered an ESU, a population or group of populations must (1) be substantially reproductively isolated from other populations and (2) contribute substantially to the ecological or genetic diversity of the biological species" (Myers et al., 1998). Factors used in determining ESUs include spatial, temporal, and genetic isolation, maturation rates, and other life history traits. Three chinook salmon ESUs are known to occur in western Placer County, and they all receive some federal and state protection.

The *Central Valley Spring Run ESU* spawns in the Sacramento River basin and is state and federally listed as threatened. This ESU typically enters fresh water between April and June, with spawning occurring between August and October. Juvenile out-migration typically occurs between October and December.

Central Valley Fall/Late-Fall Run ESU spawns in the Sacramento and San Joaquin river basins and is a candidate for federal listing. This ESU may enter fresh water anytime between August and March, with spawning occurring between October and March. Juveniles may out-migrate between November and May.

The *Sacramento Valley Winter Run ESU* spawns in the Upper Sacramento River below Keswick Dam and is state and federally listed as endangered. This ESU typically enters fresh water between January and May, with spawning occurring May through July. Juvenile out-migration occurs during February and March.

All the three chinook salmon ESUs described above have designated critical habitat. All accessible tributaries of the Sacramento River are considered critical habitats for these ESUs. Pleasant Grove Creek and its tributaries are accessible to chinook salmon. However, Pleasant Grove Creek and its tributaries have only intermittent flow from late winter to early spring and may be dry or contain only stagnant water during summer months. Therefore, temperatures in Pleasant Grove Creek are likely to be high enough to cause mortality to juvenile and adult salmon between the months of May and September. Therefore, chinook salmon are likely to occur very infrequently, if at all, in Pleasant Grove Creek and its tributaries.

Central Valley Steelhead. The Central Valley steelhead ESU (*Oncorhynchus mykiss*) is federally listed as threatened. This ESU occurs in river basins from the Sacramento River to San Francisco Bay. This species can be either anadromous, meaning it migrates from fresh water to the ocean and returns to spawn in fresh water, or it can complete its entire life cycle in fresh water. Those fish that remain in fresh water are referred to as rainbow trout. Steelhead, the anadromous form of *O. mykiss*, can spend several years in fresh water prior to smoltification and can spawn more than once before dying, unlike most other salmonids (Busby et al., 1996).

The entire Sacramento River Basin is listed as critical habitat for Central Valley steelhead (Federal Register, 2000). The total annual hatchery and wild populations for the Sacramento River was estimated in the early 1990s. The population, based on Red Bluff Diversion Dam counts, hatchery counts, and past natural spawning escapement estimates for some tributaries, was estimated to be no greater than 10,000 adult fish (McEwan and Jackson, 1996). Adult steelhead typically enter freshwater between December and May, with most spawning occurring before the end of May. Juvenile out-migration typically occurs during April and May.

Similar to chinook salmon, steelhead are unlikely to occur in Pleasant Grove Creek and its tributaries because they have only intermittent flow from late winter to early spring and may be dry or contain only

stagnant water during summer months. Temperatures in Pleasant Grove Creek likely reach temperatures high enough to cause juvenile and adult salmon mortality between the months of May and September. Therefore, steelhead are likely to occur very infrequently, if at all, in Pleasant Grove Creek and its tributaries.

Branchiopods. Two federally listed branchiopods potentially occupy suitable habitats on the project site. Vernal pool fairy shrimp and vernal pool tadpole shrimp are known to occur in seasonally ponded depressions in the vicinity of the project site. These species hatch from resting eggs when the pools become inundated by runoff from fall and winter rains. The resting eggs, called cysts, remain in the bottom of the dry pool through the summer. Branchiopods can complete their life cycle in as few as 10 to 12 days to take advantage of short-lived vernal pools, swales, or puddles (Eriksen and Belk, 1999). These species use artificial depressions, tire tracks, and other sites that pond water only during the winter. Suitable habitat for listed branchiopod species on Reason Farms includes approximately 4.48 acres of vernal pools, seasonal wetlands, and seasonal swales in the northwestern section of the site, and 0.39 acre along a north-south access road in the southwestern section of the site (Figure 6-1). An additional 0.082 acre of seasonally ponded depression exists south of Pleasant Grove Creek approximately 100 feet west of the westernmost project boundary (Figure 6-1), outside of the project site. A large, high-quality vernal pool complex exists immediately to the east of the project site.

The vernal pool fairy shrimp (*Branchinecta lynchi*) is a federally listed threatened species. This species is widely distributed through the grasslands of California, from Shasta County south to Riverside County. Populations of vernal pool fairy shrimp are often small, and this species tends to be outnumbered by other co-occurring species. Vernal pool fairy shrimp occur in a wide variety of pool types, but are most commonly found in small swales, or vernal pools in unplowed grasslands (Eriksen and Belk, 1999). They are widely distributed throughout the Central Valley. The CNDDB contains occurrence records for *B. lynchi* in several locations east of the project site. The nearest occurrence is directly adjacent to Reason Farms on the east side (CDFG, 2002b).

The vernal pool tadpole shrimp (*Lepidurus packardi*) is a federally listed endangered species. This species is found mainly in the northern and eastern portions of the Central Valley, in vernal pools and swales containing highly turbid water, often in unplowed grasslands. Other tadpole shrimp species are known to prey upon fairy shrimps, and although it has not been documented, the vernal pool tadpole shrimp probably preys on fairy shrimp when they co-occur (Eriksen and Belk, 1999). The CNDDB documents several occurrences of vernal pool fairy shrimp within 10 miles of the project site. These occurrences are located west and south of Reason Farms. The nearest occurrence is approximately five miles west of the site.

Valley Elderberry Longhorn Beetle. The Valley elderberry longhorn beetle is a federally threatened species which occurs exclusively in elderberry shrubs (*Sambucus* species). The beetle's range extends throughout California's Central Valley, and elderberry shrubs occur most often in riparian areas. The riparian areas on the project site are suitable for elderberry; however, URS biologists detected none

during site reconnaissance on March 15 and April 23, 2002. Therefore, the Valley elderberry longhorn beetle is not likely to occur on the project site.

Other Special-Status Wildlife Species

Bats. The following special-status bat species are known to occur in California and have some potential to occur in the vicinity of the project area:

- Yuma myotis bat (*Myotis yumanensis*), a federal species of concern;
- Small-footed myotis (*Myotis ciliolabrum*), a federal species of concern; and
- Greater western mastiff bat (*Eumops perotis californicus*), a state and federal species of concern.

These bat species are generally widespread throughout many regions of California. Bats are commonly found in association with open forests and woodlands where there is a water source over which to feed. Suitable roosting and nesting areas include caves, mines, tree snags, buildings, and other human-made structures. In California, these species generally mate during the late fall and give birth to their young between early May and the end of July (Jameson and Peeters, 1988). Loss of riparian foraging areas and roosting habitat presents the biggest threat to declining bat populations in the state.

Some of the bat species listed above likely forage over the proposed project site, particularly over wet areas such as rice fields, vernal pools, and seasonal drainages. Potential roosting sites on the project site are associated with the 15 acres of developed land, where structures such as houses and barns exist. Dead trees or snags within the Pleasant Grove Creek riparian corridor may also provide potential roosting site for special-status bats.

Western Burrowing Owl. The western burrowing owl (*Athene cunicularia hypugea*) is a federal and state species of concern. Burrowing owls prefer annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, they are found in close association with California ground squirrel burrows (*Spermophilus beecheyi*), which provide them with year-round shelter and seasonal nesting habitat. Burrowing owls also use human-made structures such as culverts, debris piles, or openings beneath pavement as shelter and nesting habitat (CDFG, 1995). Burrowing owl populations have been on the decline due to diminishing habitat (CDFG, 1995) and burrowing mammal control (Zarn, 1974). Burrowing owls exhibit a high degree of nest site fidelity.

No ground squirrel burrows or burrowing owls were observed on the project site during reconnaissance surveys. The absence of ground squirrel burrows may be due to active cultivation of the rice fields and potential rodent control measures. Burrowing owl nests are known from locations near the project site, including one nest two miles to the southeast, another nest six miles to the southwest, and a third nest located approximately eight miles to the south (CDFG, 2002b; Miriam Green Associates, 2000).

Short-Eared Owl. The short-eared owl (*Asio flammeus*) is a federal and state species of concern. This species is a winter resident of the Central Valley, especially in the western Sierra Nevada foothills, and locally in the southern desert region (CDFG, 2002b). It forages for small mammals over grassland, irrigated croplands, and occasionally marshes. This species has the potential to occur on the project site in winter, and use cultivated rice fields, grasslands and marshes as foraging habitat.

Lawrence's Goldfinch. Lawrence's goldfinch (*Carduelis lawrencei*) is a federal species of concern. It has a highly variable distribution, and within California this species is uncommon in foothills surrounding Central Valley from spring through fall. Lawrence's goldfinch breeds in open oak or other arid woodland and chaparral, near water (CDFG, 2002b). This species forages for seeds and to a lesser extent, invertebrates in grassland or other herbaceous habitat. There is low potential for this species to occur on the project site in riparian woodland or grassland habitat, and it was not observed during reconnaissance level surveys.

Loggerhead Shrike. The loggerhead shrike (*Lanius ludovicianus*) is a federal and state species of concern. It is a year-round resident of the Central Valley lowland and foothills, occurring most frequently in open habitats (CDFG, 2002b). This species prefers areas with perches such as shrubs, trees, fences, or utility lines. Loggerhead shrikes build nests in shrubs or trees, and forage primarily for insects from a stationary perch. This species was not observed on the project site, but has the potential to occur there.

Lewis' Woodpecker. Lewis' woodpecker (*Melanerpes lewis*) is a federal species of concern. It is an uncommon local winter resident of the Central Valley that uses open oak savannas, deciduous woodland, and coniferous forest habitats (CDFG, 2002b). There is moderate potential for this species to occur on the project site in the riparian woodland adjacent to Pleasant Grove Creek. No Lewis' woodpecker were observed on the project site during multiple biological surveys.

Long-Billed Curlew. The long-billed curlew (*Numenius americanus*) is a federal and state species of concern. It is locally common during winter in the Central Valley and it breeds in northeast California. Large numbers of non-breeding individuals have occurred in the Central Valley during the summer in some years (Cogswell, 1977). This curlew forages for invertebrates in grasslands and croplands. The long-billed curlew has a low potential to forage in grassland areas on the project site during the winter. No long-billed curlews were observed during site reconnaissance.

Northern Harrier. The northern harrier (*Circus cyaneus*) is a state species of concern. It nests in scattered locations throughout California, in grasslands, marshes, fallow agricultural fields, and open rangelands (CDFG, 2002b). Nests are often in emergent wetlands along rivers or lakes, but it may also nest in grassland or grain fields several miles from water. This species was observed on the project site foraging over cultivated rice fields.

California Horned Lizard. The California horned lizard (*Phrynosoma coronatum frontale*) is a federal and state species of concern, and is protected under the California Fish and Game Code. This lizard typically inhabits foothill woodland and riparian habitat with scattered grassland. In Placer County, it is

known from more mountainous regions in the central portion of the County (CDFG, 2002b). There is moderate potential for the California horned lizard to occur in riparian habitat along Pleasant Grove Creek.

Northwestern Pond Turtle. The northwestern pond turtle (*Clemmys marmorata*) is a state and federal species of concern. In California, this subspecies of western pond turtle occurs throughout the mountains and valleys of northern California. The pond turtle uses ponds and streams in grasslands, meadows, wetlands, woodlands, forests, and brushlands. It lays its eggs in upland areas. This species has declined for a variety of reasons, including loss and alteration of aquatic and wetland habitats, loss of breeding areas near aquatic habitats, and habitat fragmentation. This species was observed basking on emergent ground within the Pleasant Grove Creek channel.

Western Spadefoot. The western spadefoot (*Scaphiopus hammondii*) is a federal and state species of concern. This amphibian occurs in the central and southern Coast Ranges, the Central Valley, and the foothills of the Sierra Nevada (Stebbins, 1985). Western spadefoot has lost substantial portions of its breeding habitat to urban and agricultural development. The western spadefoot primarily inhabits washes, floodplains of rivers, alluvial fans, playas, and alkali flats in the foothills and mountain valleys up to 3,000 feet. It prefers areas of open vegetation and short grasses where the soil is sandy or gravelly (Stebbins, 1985). Breeding habitat consists of seasonally inundated pools or occasionally low-gradient, seasonal streams (Jennings and Hayes, 1994). Spadefoots are strictly nocturnal. During the day and during long dry periods they hide in deep, almost vertical burrows. Most of the year is spent in these underground burrows that are up to 36 inches deep (Stebbins, 1972). Adult spadefoots consume insects, worms, and other terrestrial invertebrates. Spadefoots do not move around much except during the breeding season, and are sit-and-wait predators.

One record of western spadefoot is reported in the vicinity of the project area, approximately five miles southeast (CDFG, 2002b). Western spadefoot has also been documented from a seasonal stream immediately east of the new City of Roseville Wastewater Treatment Plant on Phillip Road (ESA, 1999). Vernal pools and other seasonal wetlands in the project area may provide suitable habitat for the western spadefoot.

California Linderiella. California linderiella (*Linderiella occidentalis*) is a federal species of concern and is typically associated with seasonal pools found in unplowed grasslands. The life history of this species is similar to the listed branchiopods discussed above. This species is known from many sites within Placer County, the nearest of which is approximately 1.5 miles southwest of the project site (CDFG, 2002b). Suitable habitat for California linderiella on the proposed project site includes approximately 4.48 acres of vernal pools and seasonal wetlands in the northwestern section of the site, and 0.39 acre along a north-south access road in the southwestern section of the site (Figure 6-1).

6.1.3 Oak Trees

The wooded riparian corridor adjacent to Pleasant Grove Creek is comprised primarily of Valley oaks (*Quercus lobata*) and a few interior live oaks (*Quercus wislizenii*). Several Valley oaks with diameter at

breast height (dbh) less than 6 inches are also found scattered in fallow rice fields. Most of the trees are in fair to good health.

The City of Roseville Municipal Code Ordinance Section 19.66.070, Oak Tree Planting and Replacement Program, regulates oak trees within the City with a dbh of 6 inches or greater. In the vicinity of the south basin bypass channel diversion, approximately 18 oak trees were identified with a dbh of 6 inches or greater. In the vicinity of the South Basin bypass channel outlet, approximately 4 oak trees were identified with a dbh of 6 inches or greater. At the outfall of the new Northern Tributary Two, there are approximately 19 oaks. Where the proposed south basin embankment would cross the north-south access road, just south of Pleasant Grove Creek, there are approximately 4 oaks of 6 inches dbh or greater. Along the westernmost extent of the proposed South Basin embankment (where it runs north-south), there are approximately 3 oaks of 6 inches dbh or greater.

6.2 REGULATORY SETTING

6.2.1 Federal

Federal regulations that apply to biological resources at the project site include the federal ESA, Section 404 of the Clean Water Act, and the Migratory Bird Treaty Act.

Federal Endangered Species Act

The federal ESA prohibits take of endangered or threatened species. Take is defined to include harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Actions that result in take can result in civil or criminal penalties.

The federal ESA and U.S. EPA Section 404 guidelines prohibit the issuance of wetland permits for projects that would jeopardize the existence of a threatened or endangered species. The U.S. Army Corps of Engineers must consult with the U.S. Fish and Wildlife Service (USFWS) under the Fish and Wildlife Coordination Act when threatened or endangered species may be affected by a proposed project if issuance of a Section 404 permit would potentially impact the species. In the context of the project site, the federal ESA would be triggered if the project might result in the take of a threatened or endangered species or if issuance of a Section 404 permit or other federal action could adversely affect or jeopardize a threatened or endangered species.

Sections 404 and 401 of the Clean Water Act

The U.S. Army Corps of Engineers and U.S. EPA regulate the discharge of dredged and fill material into "waters of the United States" (waters) under Section 404 of the Clean Water Act. U.S. Army Corps of

Engineers jurisdiction over non-tidal waters encompasses navigable waters and their tributaries, and wetlands adjacent to each that will either be directly or indirectly impacted by a proposed project.

Under Section 401 of the Clean Water Act, States can require a Water Quality Certification for all projects regulated under Section 404. In California, the State Water Quality Control Board is the responsible agency.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC § 703-712) prohibits the take of any migratory bird. Under the Act it is unlawful to take, possess, import, export, transport, sell, barter, offer for sale, purchase, or barter any migratory bird, or any part, nest, or eggs of any such bird except under the terms of a valid permit. Under the Act, "take" is defined as the action of or attempt to pursue, hunt, shoot, collect or kill.

6.2.2 State

California state regulations that apply to biological resources include the California ESA, Section 1600 of the California Fish and Game Code, the Porter-Cologne Act, and the Native Plant Protection Act.

California Endangered Species Act

The California ESA is similar to the federal ESA but pertains only to state threatened and endangered species. The California ESA requires state agencies to consult with CDFG when preparing documents under CEQA to ensure that the actions of the state lead agency do not jeopardize the continued existence of listed species. The California ESA requires agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy to listed species would occur, and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if the agency determines that there are overriding considerations; however, the agencies are prohibited from approving projects that would cause the extinction of a listed species.

Mitigating impacts to state listed species involves avoidance, minimization, and compensation. Unavoidable impacts on state listed species are typically addressed in a detailed mitigation plan prepared in accordance with CDFG guidelines. CDFG exercises authority over mitigation projects involving state listed species, including those resulting from CEQA mitigation requirements.

The California ESA prohibits "take" of state listed plant and animal species, CDFG may authorize take if there is an approved habitat management plan or management agreement that avoids or compensates for impacts on listed species.

Fish and Game Code Section 1600: Streambed Alteration Agreements

Under Chapter 6 of the California Fish and Game Code, CDFG is responsible for the protection and conservation of the state's fish and wildlife resources. Section 1600 et seq. of the code defines the responsibilities of CDFG and the requirements for public and private applicants to obtain an agreement to "divert, obstruct, or change the natural flow or bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resources or from which those resources derive benefit, or will use material from the streambeds designated by the department." Public agencies file 1601 applications, and private parties file 1603 applications for streambed alteration agreements.

The local CDFG warden or unit biologist typically has responsibility for issuing streambed alteration agreements. These agreements usually include specific requirements related to construction techniques and remedial and compensatory measures to mitigate for adverse impacts. CDFG may also require long-term monitoring as part of an agreement to assess the effectiveness of the proposed mitigation.

Porter-Cologne Act

The Porter-Cologne Water Quality Control Act of 1970 grants the State Water Resources Control Board (SWRCB) and its regional offices power to protect water quality and is the primary vehicle for implementation of California's responsibilities under Section 401 of the federal Clean Water Act. The Porter-Cologne Act grants the SWRCB authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants.

Native Plant Protection Act

The Native Plant Protection Act of 1977 designates rare and endangered plants and provides specific protection measures for identified populations.

6.2.3 Local

The City of Roseville Tree Preservation Ordinance (Chapter 19.66 of the City of Roseville Municipal Ordinances) provides protection of native oak trees at least six inches in diameter at breast height during construction, and requires replacement of removed trees. This Ordinance would apply to the area within the proposed project site if purchased by the City.

Placer County acknowledges the value of native trees and has a tree preservation ordinance that prohibits the following actions from occurring without County approval: removal of landmark or preserved trees or groves of natives trees, native tree corridors, and significant stands of native tree habitats. Placer County's Tree Preservation Ordinance also prohibits the removal of trees from riparian areas without prior

identification of environmental impacts and mitigation measures (Placer County Code 36.310 B). The ordinance is applicable to the project unless the site is purchased by the City of Roseville.

6.3 IMPACTS

The Initial Study for the proposed project found that all impacts to biological resources would be less than significant with mitigation. Biological resources have been included in this Environmental Impact Report to facilitate natural resource agency review and permitting. Mitigation measures previously presented in the Initial Study/NOP have been renumbered here to correspond to the order of the discussion, below.

6.3.1 Significance Criteria

Impacts to biological resources are considered significant if they meet any of the following criteria:

- Have a substantial effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional or state habitat conservation plan.

6.3.2 Plant Communities, Wildlife Habitat, and Waters of the U.S.

IMPACT B-1:	Loss of high quality riparian habitat.
SIGNIFICANCE:	Less than significant
MITIGATION:	Mitigation Measure B-1 (Seed temporarily disturbed riparian areas with native plant species), and Mitigation Measure B-2 (Replace oak trees).
RESIDUAL SIGNIFICANCE:	Less than significant

A well-developed riparian forest comprised primarily of valley oaks (*Quercus lobata*), sandbar willows (*Salix exigua*), and Fremont cottonwoods (*Populus fremontii*) borders the main branch of Pleasant Grove Creek (Figure 3-4). The project would protect these habitats except for encroachments at the inlet and outlet structures associated with the retention basins. North and South basin embankments would be set

back approximately 100 feet from the ordinary high water mark of the creek or at least 70 feet from the top of the bank, whichever provides the greatest offset from the top of the bank. The bypass channel diversion and outlet structures would be located away from the center section of Pleasant Grove Creek, where the highest quality riparian woodland exists. They would instead be located in the eastern and western ends of the project site where the riparian corridor narrows.

The area of impact to riparian habitat is summarized in Table 6-4. At the location of the new Northern Tributary Two outlet structure on the north bank of Pleasant Grove Creek, approximately 0.07 acre of riparian habitat would be permanently impacted, and 0.03 acre would be temporarily impacted by construction activities. This would result in the removal of approximately 15 riparian trees greater than 6 inches dbh, three of which are greater than 25 inches dbh, including one Goodding's willow greater than 30 inches dbh. On the south bank of Pleasant Grove Creek, the construction of the bypass channel diversion structure would permanently impact approximately 0.05 acre and temporarily impact 0.11 acre of riparian habitat. This would result in the removal of approximately seven riparian trees greater than 6 inches dbh, three of which are greater than 25 inches dbh, including one Goodding's willow greater than 30 inches dbh. Also on the south bank, the construction of the bypass channel outlet structure would permanently impact 0.02 acre and temporarily impact 0.03 acre of riparian habitat, including three riparian trees greater than 6 inches dbh. The filling of existing channelized Northern Tributary Two would permanently remove approximately 0.18 acre of riparian habitat.

Table 6-4
Area of Impacts to Riparian Habitat (in Acres)

Location	Permanent	Temporary
New Northern Tributary Two Outfall	0.07	0.03
Existing Northern Tributary Two Channel	0.18	-
South Basin Bypass Channel Outlet	0.02	0.03
South Basin Bypass Channel Diversion	0.05	0.11
Totals	**0.32**	**0.17**

Permanent loss of riparian habitat as a result of the proposed project would be offset by the creation of substantial replacement riparian habitat, also as part of the project. The amount of riparian habitat to be created is summarized in Table 6-5. The proposed project would create approximately 6.75 acres of habitat suitable for colonization of riparian trees and shrubs within the South Basin bypass channel. The existing Northern Tributary Two is a linear man-made channelized ditch. The proposed project would restore this tributary to a more natural and sinuous stream course with an adjacent floodplain. Approximately 51.93 acres of habitat would be created within the swale of the new Northern Tributary Two that would be suitable for colonization of riparian trees and shrubs. The swale would also be suitable for plantings of valley oaks, interior live oaks, Fremont cottonwood, and willows that may be required in accordance with the City of Roseville Tree Preservation Ordinance, as discussed in Impact B-8, below.

The permanent loss of 0.32 acre of riparian habitat would be compensated for on site by the creation of 58.68 acres of riparian habitat along the South Basin bypass channel and the new Northern Tributary Two low-flow channels. The ratio of lost riparian habitat to newly created riparian habitat in the project would be nearly 1:183.

Table 6-5
Acres of Riparian Habitat That Would be Created as a Result of the Project

Location	Area (acres)
South Basin Bypass Channel Low-Flow Channel	6.75
New Northern Tributary Two Low-Flow Channel	51.93
Total	**58.68**

Replacement planting identified as mitigation for other impacts would further reduce these less than significant impacts. The creation of riparian habitat on site as part of the proposed project would result in less than significant impacts to riparian habitat.

Less than significant temporary construction-related impacts to 0.17 acre of riparian habitat would be offset by Mitigation Measure B-1, which includes the seeding of disturbed areas with native plant species. Implementation of Mitigation Measure B-1 would further reduce less than significant temporary impacts to riparian habitats.

IMPACT B-2: Loss of seasonal wetlands.
SIGNIFICANCE: Significant
MITIGATION: Mitigation Measure B-3 (Compensate for direct and indirect impacts to listed vernal pool branchiopod habitat).
RESIDUAL SIGNIFICANCE: Less than significant

Approximately 0.39 acre of seasonal wetlands on the proposed project site in the South Basin would be experience periodic inundation from flooding when the basin is filled with water. These seasonal wetlands would not receive fill or dredge material; however, the impact is considered significant due to the potential for listed branchiopod species to utilize the habitat (see Impact B-4, below). Seasonal wetlands suitable for listed branchiopods is also present just west of the South Basin, outside of the project area, but within 250 feet of the westernmost proposed embankment. Construction of an embankment within 250 feet of this seasonal wetland could indirectly alter the hydrology of this habitat, and therefore impact listed branchiopods if present. Restoration of Northern Tributary Two would also indirectly impact the vernal pool complex immediately east of the project site, due to earth moving activities at both the site of the new and existing tributaries. Approximately 0.08 acre of seasonally ponded depression habitat would be indirectly impacted due to the construction of this embankment. Mitigation Measure B-3 would reduce impacts to seasonal wetlands to a less than significant level.

IMPACT B-3: Loss of other jurisdictional wetlands and other Waters of the U.S.

SIGNIFICANCE: Less than significant

MITIGATION: Mitigation Measure B-1 (Seed temporarily disturbed riparian areas with native plant species).

RESIDUAL SIGNIFICANCE: Less than significant

Fill in jurisdictional waters on the project site would be avoided with the exception of activities associated with the following:

- Construction of the South Basin bypass channel outlet structure
- Construction of the South Basin low-flow channel diversion from Pleasant Grove Creek
- Construction of the outlet of new Northern Tributary Two on the north side of Pleasant Grove Creek
- Fill in the existing Northern Tributary Two Channel
- Fill in the North Branch of Pleasant Grove Creek for the construction of an access road

The project is designed to avoid impacts to existing wetlands as much as possible. In addition to design features, no construction equipment would be allowed within Pleasant Grove Creek, except as needed for channel excavation at inlet/outlet structures (see below). Silt fences would be installed at the top of creek banks within the construction area to trap sediment, as well as to discourage entry by personnel and equipment. Prior to commencing construction, sensitive habitat areas such as creeks, wetlands, and vernal pools both within and adjacent to the work area would be enclosed with temporary construction fencing and/or silt fences to prohibit access. The area of wetlands and other Waters of the U.S. to be impacted by the proposed project are summarized in Table 6-6.

Table 6-6
Area of Impacts to Jurisdictional Waters of the U.S. (in Acres)

Location	Permanent		Temporary	
	Wetlands	Waters	Wetlands	Waters
New Northern Tributary Two Outfall	0.02	0.01	0.11	0.02
Existing Northern Tributary Two Channel	-	0.53	-	-
South Basin Bypass Channel Outlet	<0.01	0.01	0.01	0.01
South Basin Bypass Channel Diversion	0.01	-	0.02	-
North Basin Access Road[(a)]	0.005	0.007	0.002	0.003
Total	**0.035**	**0.557**	**0.142**	**0.033**

Note:
[(a)] Off site

A total of approximately 0.035 acre of jurisdictional wetlands would be permanently impacted, and approximately 0.557 acre of other jurisdictional waters would be permanently impacted. Approximately 0.142 acre of jurisdictional wetlands would be temporarily impacted during construction activities. Approximately 0.033 acre of jurisdictional waters would be temporarily impacted during construction activities. The North Basin Access Road would be constructed on property not owned by the City of Roseville, which is therefore not part of the project site. The construction impacts of the North Basin Access Road are included in Table 6-6, although this location is not on the proposed project site. It is likely that the North Basin and accompanying access road would not be constructed for approximately 15 years.

The impacts to seasonal wetlands are discussed above in Impact B-2. The impacts to all other Waters of the U.S. would be compensated for by the creation of new wetlands and other Waters of the U.S. on the project site. The area of Waters of the U.S. to be created is presented in Table 6-7. The relocation of Northern Tributary Two to its original stream course would result in the creation of approximately 1.33 acres of jurisdictional waters and 2.40 acres of jurisdictional wetlands within the low-flow channel and swale. The creation of the low-flow channel in the South Basin would result in the creation of 1.12 acres of jurisdictional waters, and 6.75 acres of jurisdictional wetlands.

Table 6-7
Area of Waters of the U.S. That Would Be Created as a Result of the Proposed Project (in Acres)

Location	Wetlands	Other Waters
South Basin Bypass Channel Low-Flow Channel	6.75	1.12
New Northern Tributary Two Low-Flow Channel	2.40	1.33
Total	**9.15**	**2.45**

The proposed project would create a total of approximately 2.45 acres of jurisdictional waters, which would result in the replacement of the permanently lost waters at a 1:4.6 ratio. The proposed project would create a total of approximately 9.15 acres of jurisdictional wetlands, which would result in the replacement of permanently lost wetlands at a ratio of 1:2,288. Permanent impacts to wetlands and other waters of the U.S. as a result of the proposed project would be less than significant due to the creation of replacement wetlands and waters on site as part of the proposed project. The implementation of Mitigation Measure B-1, which includes the seeding of disturbed areas with native plant species, would also reduce less than significant temporary impacts to jurisdictional wetlands.

6.3.3 Special-Status Species

IMPACT B-4: Direct and indirect impacts to listed vernal pool branchiopods.
SIGNIFICANCE: Significant
MITIGATION: Mitigation Measure B-2 (Compensate for direct and indirect impacts to listed vernal pool branchiopod habitat).
RESIDUAL SIGNIFICANCE: Less than significant

Habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp is present in seasonally ponded depressions within the South Basin area (Figure 3-4). No surveys for these species have been conducted, but they are presumed to be present. Construction of the South Basin could alter the hydrology of this habitat and may extirpate these species if they are present. Therefore, this impact is considered significant. Approximately 0.39 acre of seasonally ponded depression habitat in the South Basin would be directly affected due to periodic inundation. Habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp is also present just west of the South Basin, outside of the project area, but within 250 feet of the westernmost proposed embankment. Construction of an embankment within 250 feet of this seasonally ponded depression could indirectly alter this habitat, and therefore impact vernal pool fairy shrimp or vernal pool tadpole shrimp if they are present. Approximately 0.08 acre of seasonally ponded depression habitat would be indirectly impacted due to the construction of this embankment. Habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp is also present at the vernal pool complex immediately east of the project. Restoration of Northern Tributary Two could also indirectly impact this habitat and therefore impact vernal pool fairy shrimp or vernal pool tadpole shrimp if they are present.

Potential impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp habitat would be mitigated according to the U.S. Fish and Wildlife Service (USFWS) programmatic consultation with the Sacramento District of the U.S. Army Corps of Engineers (USFWS, 1996). This would include a vernal pool creation component at a ratio of 1:1 (created:impacted) and a preservation component at a 2:1 ratio. Implementation of this mitigation measure would reduce potential impacts to listed vernal pool branchiopods to a less than significant level.

IMPACT B-5:	Potential construction-related disturbance to nesting Swainson's hawk and other nesting birds.
SIGNIFICANCE:	Potentially Significant
MITIGATION:	Mitigation Measure B-4 (Conduct pre-construction surveys for Swainson's hawk and other bird species nests, and avoid construction activities within 0.25 mile of active nests between March 1 and September 15).
RESIDUAL SIGNIFICANCE:	Less than significant

The proposed project would potentially affect nesting Swainson's hawks and other bird species protected under the Migratory Bird Treaty Act. The proposed project is not likely to adversely affect foraging habitat for Swainson's hawk. No Swainson's hawk nests are documented from the project site. However, at least two Swainson's hawk nests have been documented within 10 miles of the project site within the last 5 years (CDFG, 2002b; Miriam Green Associates, 2000).

The CDFG considers the loss of foraging habitat within 10 miles of an active nest to be a substantial adverse impact to Swainson's hawk. Nests are considered active if they have been used at least once during the past 5 years (CDFG, 1994). Dry rice fields provide potential foraging habitat for Swainson's

hawk, but the rice fields in the project area are typically flooded during the late spring and summer months when Swainson's hawk would be most likely to foraging on the project site. The proposed project would potentially increase the area of foraging habitat available because the fields would be inundated less frequently (approximately once every 15 to 30 years).

Mature trees along Pleasant Grove Creek are suitable for nesting Swainson's hawk or other bird species protected under the Migratory Bird Treaty Act. Construction activities within 0.25 mile of active nest sites could disturb nesting birds and cause nesting failure. If construction activities are conducted between March 1 and September 15, Mitigation Measure B-4 will be implemented. Implementation of this mitigation measure will reduce potential impacts to nesting Swainson's hawk and other bird species to a less than significant level.

IMPACT B-6:	Loss of dwarf downingia populations.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measure B-3 (Compensate for direct and indirect impacted to listed vernal pool branchiopod habitat).
RESIDUAL SIGNIFICANCE:	Less than significant

URS biologists observed dwarf downingia on the western side of project site within two seasonally ponded depressions (tire tracks which have formed permanently deepened ruts that pond water during the wet season) located along a north-south access road. These dwarf downingia populations could be adversely affected by periodic inundation of the South Basin. Loss of these rare plant populations would be a potentially significant impact. However, implementation of the proposed mitigation for vernal pool fairy shrimp and vernal pool tadpole shrimp (Mitigation Measure B-3) would preserve vernal pool habitat and create additional vernal pool habitat potentially occupied by dwarf downingia. This would reduce impacts to dwarf downingia to a less than significant level.

6.3.4 Fish

IMPACT B-7:	Diversion and entrapment of fish.
SIGNIFICANCE:	Less than significant
MITIGATION:	None required

Pleasant Grove Creek and its tributaries provide habitat for common native and non-native fish species such as California roach (*Lavinia symmetricus*), Sacramento sucker (*Catostomus occidentalis*), black bullhead (*Ictalurus melas*), bluegill (*Lepomis macrochirus*), smallmouth bass (*Micropterus dolomieui*), and spotted bass (*Micropterus punctulatus*). Pleasant Grove Creek does not currently provide habitat suitable for anadromous fish populations due to downstream diversions, high temperatures, and low dry season flows.

A one- to two-year return interval storm would be expected to cause flows to enter the South Basin via the bypass inlet (on average, there would be flow through the basin every one to two years). Under most conditions, water would not be retained by the basin but would flow through sytem and reenter Pleasant Grove Creek. Nonetheless, with water flowing into and through the basin or with water flowing into and being retained by the basin, the potential exists for fish to enter the basin.

The proposed project incorporates measures designed to minimize the potential for fish to become trapped and stranded within the basin. These measures include:

- keeping the gates in the normally open position so that water can freely move into and through the basins;
- a positive gradient in the bypass channel so that water naturally flows toward the outlet and back into Pleasant Grove Creek;
- a low flow channel in the bottom of the bypass channel to provide a concentrated (deeper) stream of water to assist fish in swimming out of the basin as it drains dry;
- interruption removal of portions of the rice field checks to provide positive drainage toward the bypass channel, thus preventing fish from being trapped in flooded rice fields.

During average winter flows, fish that entered the South Basin from Pleasant Grove Creek would be confined to the low-flow channel. These fish would be able to exit the South Basin without obstruction from either the basin inlet or outlet. During higher flow events, when the South Basin fills above the bank of the bypass channel, fish would have the potential to disperse into shallower portions of the basin defined by the elevations of the existing rice fields. However, the South Basin would be designed and constructed to provide positive drainage toward the bypass channel, therefore the reducing the potential for fish to become trapped as the water recedes from the basin. With the proposed basin design, the potential for fish to become trapped would be similar to what would be expected on a natural floodplain.

Retention of water in the South Basin would be limited to the wet season (November through March) when low water temperatures and high dissolved oxygen levels would be favorable to survival of the fish species likely to occur in Pleasant Grove Creek. The North Basin would not be designed with a flow-through bypass channel and therefore would not represent an opportunity for diversion or entrapment of fish. Therefore, the proposed project would not significantly impact native and non-native fish species likely to occur in Pleasant Grove Creek. No mitigation is required.

6.3.5 Oak Trees

IMPACT B-8:	Loss of oak trees.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measure B-2 (Replace oak trees).
RESIDUAL SIGNIFICANCE:	Less than significant

The City of Roseville Municipal Code Ordinance Section 19.66 (Tree Preservation) regulates the removal and preservation of trees within the City. Although the proposed project would not lie within City boundaries, it would be owned by the City and the City proposes to replace lost oak trees in accordance with its Ordinance. The proposed project site has a substantial number of oak trees, some of which will be removed by the construction activities. All native oak trees (including *Quercus lobata*, valley oak and *Quercus wislizenii*, live oak) 6 inches and greater dbh are protected. The applicant will obtain a tree permit prior to removal of any protected trees according to guidelines in Section 19.66.040 of the Ordinance. Table 6-8 contains a summary of the approximately number of oak trees greater than 6 inches dbh that would be impacted by the proposed project.

Table 6-8
Summary of Approximate Number of Oak Trees
Greater than 6 Inches dbh to be Impacted by the Proposed Project

Location	Number of Oak Trees Greater than 6 Inches dbh
New Northern Tributary Two Outfall	11
South Basin Bypass Channel Outlet	1
South Basin Bypass Channel Diversion	6
Embankment on north side of South Basin	4
Embankment on west side of South Basin	1
North Basin access road	1
Total	**24**

Section 19.66.060 of the Ordinance provides standard policies and procedures for approved work. This includes protective measures for work conducted upon or around protected trees. All applicable standard policies and procedures would be implemented during construction to ensure that oak trees that are not removed are not impacted by the project. Section 19.66.070 of the Ordinance details the oak tree planting and replacement program. The removal of oak trees as a result of the proposed project would be mitigated by replanting trees on site to the extent possible, according to the oak tree planting and replacement project, and as detailed in Mitigation Measure B-2. The replanting of oak trees would reduce impacts to less than significant levels.

6.4 MITIGATION MEASURES

Mitigation Measure B-1: Seed temporarily disturbed riparian areas with native plant species.

Mitigation Measure B-1 applies to Impacts B-1 and B-3.

Those areas of wetlands and/or riparian habitat that are temporarily disturbed during construction will be seeded with native plant species at the conclusion of construction. The composition of the native plant

species mix will be determined by the City based on recommendations from natural resource regulatory agencies.

Mitigation Measure B-2: Replace oak trees.

Mitigation Measure B-2 applies to Impacts B-1 and B-8.

Replace oak trees in accordance with City of Roseville Tree Preservation Ordinance. To the extent possible, replacement plantings will be located on the project site, in the vicinity of the existing and newly created riparian areas. As stated in the Ordinance, the required plantings will be calculated based upon an inch-for-inch replacement of the removed trees.

Mitigation Measure B-3: Compensate for direct and indirect impacts to listed vernal pool branchiopod habitat.

Mitigation Measure B-3 applies to Impacts B-2 and B-6.

Direct and indirect impacts to listed vernal pool branchiopods will be mitigated according to USFWS (1996) Programmatic Formal Endangered Species Act Consultation for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans. This could include purchase of mitigation credits from a USFWS-approved mitigation bank or via equivalent onsite creation and/or preservation of vernal pool habitat. This would include a vernal pool creation component at a ratio of 1:1 (created:impacted) and a preservation component at a 2:1 ratio. Implementation of this mitigation measure would reduce potential impacts to listed vernal pool branchiopods to a less than significant level.

Mitigation Measure B-4: Conduct pre-construction surveys for Swainson's hawk and other bird species nests, and avoid construction activities within 0.25 mile of active nests between March 1 and September 15.

Mitigation Measure B-4 applies to Impact B-5.

Prior to construction, surveys will be conducted for Swainson's hawk and other raptor nests. The surveys will be conducted within ½ mile of the project area, and no new disturbances, such as heavy equipment operation, will be initiated within ½ mile of an active raptor nest between March 1 and September 15. If an active nest is located and construction occurs within ½ mile of it, the nest will be monitored by a qualified biologist to ensure that abandonment does not occur.

Tree removal will be conducted during the non-breeding season, September 15 through March 1. If tree removal is conducted during the breeding season, then all trees to be removed will be surveyed for nesting birds. If any nesting birds are found, the tree will not be removed until the young have fledged from the nest, as determined by a qualified biologist.

7.0 CONSTRUCTION NOISE

7.1 ENVIRONMENTAL SETTING

7.1.1 Characteristics of Environmental Noise

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, perceived importance and suitability of the noise in the setting, time of day and type of activity during which the noise occurs, and sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations, which travel through a medium such as air and are sensed by the human ear. Sound is generally characterized by a number of variables including frequency and intensity. Frequency describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness; this relation holds true for loud sounds and for quieter sounds.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example: 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

The frequency is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a certain number of times per second. A particular tone that makes the drum skin vibrate 100 times per second generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the best human ear.

Sound from a tuning fork (a pure tone) contains one single frequency; however, most sounds heard in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of

the frequencies of a sound according to a weighting system that reflects that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called A-weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve. Table 7-1 lists dBA sound levels for some typical sounds.

Table 7-1
Sound Levels of Typical Noise Sources and Noise Environments
(A-Weighted Sound Levels)

Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
Military Jet Take-off with After-burner (50 ft/15 m) Civil Defense Siren (100 ft/30.5 m)	140 130	Carrier Flight Deck	
Commercial Jet Take-off (200 ft/61 m)	120		Threshold of Pain *32 times as loud
Pile Driver (50 ft/15 m)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft/30.5 m) Newspaper Press (5 ft/1.5 m) Power Mower (3 ft./.9 m)	100		Very Loud *8 times as loud
Motorcycle (25 ft/7.6 m) Propeller Plane Flyover (1,000 ft/305 m) Diesel Truck, 40 mph (50 ft/15 m)	90	Boiler Room Printing Press Plant	*4 times as loud
Garbage Disposal (3 ft/.9 m)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft/7.6 m) Living Room Stereo (15 ft/4.5 m) Vacuum Cleaner (3 ft/.9 m) Electronic Typewriter (10 ft/3 m)	70		Moderately Loud *70 decibels (Reference Loudness)
Normal Conversation (5 ft/1.5 m) Air Conditioning Unit (100 ft/30.5 m)	60	Data Processing Center Department Store	*½ as loud
Light Traffic (100 ft/30.5 m)	50	Private Business Office	*¼ as loud
Bird Calls (distant)	40	Lower Limit of Urban Ambient Sound	Quiet *⅛ as loud
Soft Whisper (5 ft/1.5 m)	30 20 10 0	Quiet Bedroom Recording Studio	Just Audible Threshold of Hearing

Source: Compiled by URS Corporation

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources that create a relatively steady background noise in which no particular source is identifiable. A single descriptor called the L_{eq} (equivalent sound level) is used. L_{eq} is the energy-mean A-weighted sound level during a measured time interval. It is the "equivalent" constant sound level that a given source would need to produce to equal the fluctuating level measured. In addition, it is often desirable to know the acoustic range of the noise source being measured.

7.1.2 Regional Setting

Ambient sound levels can be characterized based on the types of development present; typically, farm equipment and traffic dominate sound levels in rural/agricultural areas. Traffic along Sunset Boulevard West, and to a lesser extent along Phillip Road, contributes to the regional noise environment. During crop dusting and seeding of rice fields, small aircraft are also intermittent contributors.

7.1.3 Local Setting

The study area for the noise analysis includes the proposed project site, and the properties near the proposed project site that would be affected by proposed project construction activities and related traffic. The study area primarily includes residential and agricultural uses. Ambient sound levels in the study area generally depend on the location of noise receptors, and their proximity to roadway and farm equipment sources.

Five potential receptor locations were identified, as shown on Figure 7-1. All potential receptor locations were residences or residential areas, and are shown in Figure 3-9. The ambient noise level at each residential area (numbered 1 through 5, starting at the westernmost residence and continuing clockwise) was measured with a Brüel & Kjær Type 2236 C-007 type 1 Integrating Sound Level Meter (Serial Number 2015788) during a site visit on May 22, 2002. All measurements were made in the immediate vicinity of the residence, with the exception of residences 2 and 5; these measurements were made at the end of the driveway to each home, due to access restrictions. However, in both cases, the noise environment in the vicinity of the measurement was very similar to that near the residence. The sound level meter was calibrated with a Brüel & Kjær Type 4231 Acoustical Calibrator (Serial Number 1850301) following the site visit and was shown to be in compliance.

Table 7-2 indicates the existing ambient noise level at each of the five nearby permanent residential locations. The measurement locations are depicted in Figure 7-1. Noise calculations are provided in Appendix D of the Initial Study (included as Appendix A of this Draft EIR).

Table 7-2
Existing Ambient Noise Levels at Residences Near the Proposed Project

Location Number	Residence Location	Measured Ambient Noise Level
1	8100 Phillip Road	46.5 dBA L_{eq}
2	South end of Pettigrew Road	40.0 dBA L_{eq}
3	Along northern access road	52.8 dBA L_{eq}
4	Sunset Boulevard West & Amoruso Way	60.4 dBA L_{eq}
5	5730 Phillip Road	41.9 dBA L_{eq}

7.2 REGULATORY SETTING

Environmental noise is generally governed at a local level. State and federal agencies have established guidelines for determining acceptable noise levels for various land uses. Individual communities typically adopt state guidelines or slight variations of these guidelines. In addition, individual cities and counties establish plans for achieving their community noise goals through their general plan process.

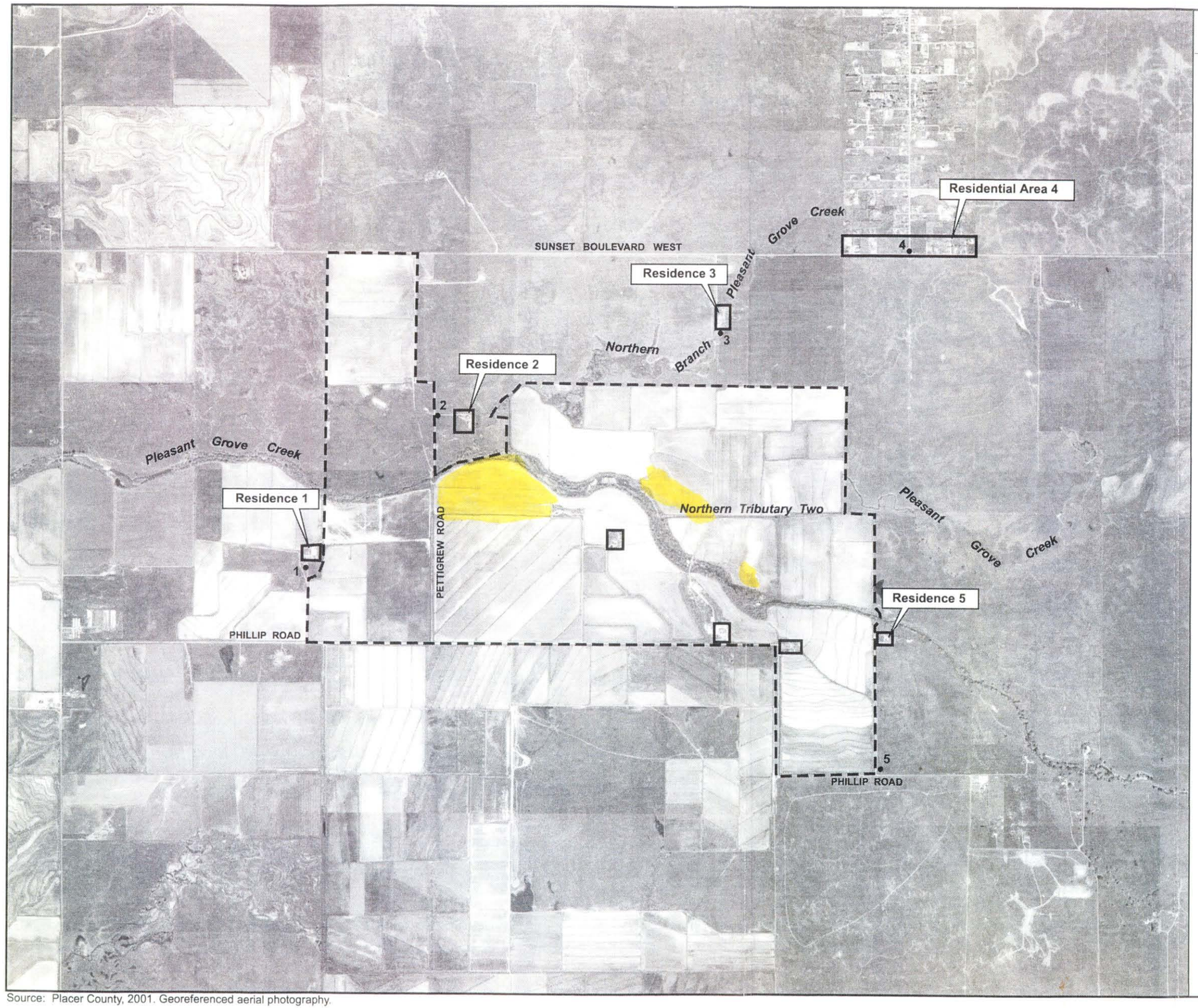
Noise from the proposed project would be limited to construction noise sources. There would be no onsite noise receptors, because removal of existing onsite structures would be the first construction activity undertaken. According to City of Roseville Noise Ordinance Section 9.24.140, City operations and activities are exempt from Noise Ordinance regulation.

Placer County's General Plan contains policies governing noise related to development within Placer County. Because some construction activities would occur near project site boundaries, County noise standards would also apply where construction noise is detectable at offsite locations (adjacent lands under the County's jurisdiction). However, the Placer County Noise Element of the General Plan does not address construction noise level limits. Furthermore, the Placer County Municipal Code does not contain an explicit Noise Ordinance. However, the Placer County Board of Supervisors has issued a Minute Order that controls construction noise by limiting the hours of operation to the daytime hours of 6 A.M. to 8 P.M., Monday through Friday and 8 A.M. to 6 P.M. Saturday. This order also requires proper maintenance of equipment mufflers and the indication of the staging area on the improvement plans.

7.3 IMPACTS

7.3.1 Significance Criteria

As described in Section 7.2, the City of Roseville Noise Ordinance exempts City operations and activities from the Noise Ordinance regulation, and the Placer County Noise Element of the General Plan does not



LEGEND

- Project Area
- Residences/Residental Area
- 1 Noise Measurement Location

N

1000 0 1000 2000

Scale (feet)
1:24:000

Figure 7-1
LOCATIONS OF BASELINE NOISE MEASUREMENTS

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Source: Placer County, 2001. Georeferenced aerial photography.

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address construction noise level limits. In the absence of County standards defining sound level limits for offsite locations, the EPA guidelines were used to evaluate the significance of a noise impact. Research has shown that whenever intrusive noise exceeds approximately 60 dBA indoors, there will be interference with speech communication. A steady A-weighted background level of 60 dBA will produce 98 percent sentence intelligibility; that of 65 dBA will produce 93 percent intelligibility; that of 70 dBA will produce 66 percent intelligibility; and that of 75 dBA will produce 2 percent intelligibility. Therefore, assuming that the building shell of a residential structure will provide at least 15 dBA noise attenuation, exterior sound levels exceeding 75 dBA at offsite locations will be considered significant.

7.3.2 Retention Basin Construction

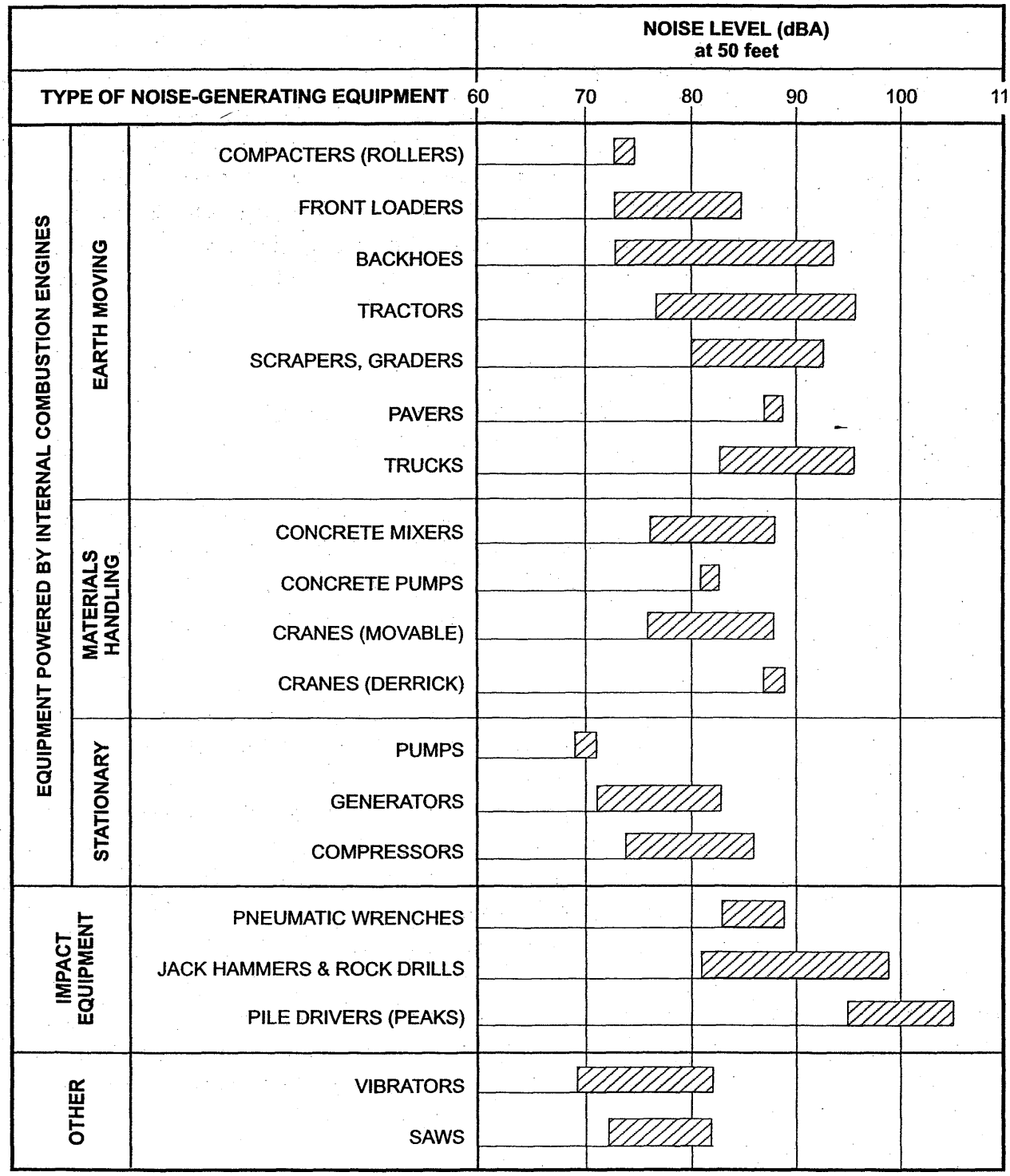
IMPACT N-1: Removal of existing onsite residences.
SIGNIFICANCE: Less than significant
MITIGATION: None warranted

Noise associated with demolition of the three existing residences on the project site will be of a temporary nature. Sound levels may be as high as 85 dBA at 50 feet from the source. The shortest distance between a permanent residence and a residence planned for destruction is approximately 1,500 feet. The sound level from demolition at this distance would be approximately 55 dBA, and would not result in a significant impact.

IMPACT N-2: Onsite retention basin construction equipment would generate short-term sound level increases at noise-sensitive locations.
SIGNIFICANCE: Significant (short-term)
MITIGATION: Mitigation Measure N-1 (Consult with affected residents, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or temporarily boarding up windows facing construction).
RESIDUAL SIGNIFICANCE: Potentially significant (short-term)

Noise impacts from construction would result from the operation of onsite construction equipment. The magnitude of the impact would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the construction phase, and the distance between the noise source and receptor. Figure 7-2 shows average sound levels generated by individual pieces of typical construction equipment.

The number of each type of construction equipment was taken from the description of construction equipment listed in Section 3.5.7.2 of the Project Description. The noise level produced by each type of equipment was taken from the Typical Construction Equipment Noise Generation Levels presented in Figure 7-2. The distances from the construction locations to nearby residences were determined from the City of Roseville Retention Basin Site Map (Figure 3-4) and the City of Roseville Retention Basin Plan View (Figure 3-5) Map.



Source: U.S. EPA, 1971.

Figure 7-2
TYPICAL CONSTRUCTION EQUIPMENT NOISE GENERATION LEVELS

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The following assumptions were made to calculate the expected construction-related noise levels at these residential locations: (1) each piece of equipment is running for the entire hour, (2) any given piece of equipment working on a bypass channel or an embankment is near a sensitive receiver for fifteen minutes in every hour, (3) two concrete mixers are working on an inlet or outlet structure in any hour, and (4) two bulldozers or scrapers, one compactor, and one water truck are working on a given embankment area at one time. Noise from construction equipment would be expected to attenuate at the standard rate of 6 dBA per doubling of distance from the source.

Table 7-3 indicates the expected construction sound level and the existing ambient noise level at each of the five nearby permanent residential locations.

Table 7-3
Expected Construction Sound Levels at Residences Near the Proposed Project

Location Number	Residence Location	Construction Noise Level Range	Measured Ambient Noise Level
1	8100 Phillip Road	68-80 dBA L_{eq}	46.5 dBA L_{eq}
2	South end of Pettigrew Road	55-68 dBA L_{eq}	40.0 dBA L_{eq}
3	Along northern access road	54-67 dBA L_{eq}	52.8 dBA L_{eq}
4	Sunset Boulevard West & Amoruso Way	49-62 dBA L_{eq}	60.4 dBA L_{eq}
5	5730 Phillip Road	73-86 dBA L_{eq}	41.9 dBA L_{eq}

Table 7-4 indicates the distance from each residence to the nearest point of each type of construction associated with the project.

Table 7-4
Distances from Residences to Construction

Location Number	Distance to Nearest Embankment	Distance to Nearest Inlet/Outlet Structure	Distance to Nearest Bypass Channel Area
1	75 feet	2,475 feet	2,625 feet
2	975 feet	2,250 feet	2,625 feet
3	1,650 feet	2,775 feet	2,175 feet
4	5,500 feet	4,500 feet	4,500 feet
5	1,200 feet	300 feet	300 feet

Construction sound levels at 5730 Phillip Road and at 8100 Phillip Road are estimated to be as high as 86 dBA L_{eq}. These sound levels would result in a substantial temporary increase in ambient noise levels in the project vicinity and may disrupt speech communication at these residences during construction, which would be considered a significant impact. Mitigation of the noise levels at these residences will be necessary to comply with EPA guidelines, as described above.

If feasible and if agreed to by the affected residents, mitigation in the form of a sound attenuation barrier or boarding up of windows facing construction will be necessary to protect the residences at 5730 Phillip Road and 8100 Phillip Road from construction noise. Since it is not certain that the residents would allow mitigation to be constructed, construction noise at these two residences is considered a potentially significant and unavoidable impact. No significant noise impacts from onsite retention basin construction equipment would occur to any other residence.

7.3.3 North Basin Access Road Reconstruction

IMPACT N-3:	Northern access road construction equipment would generate short-term sound level increases at 6495 Sunset Boulevard West.
SIGNIFICANCE:	Significant (short-term)
MITIGATION:	Mitigation Measure N-1 (Consult with affected residents, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or temporarily boarding up windows facing construction).
RESIDUAL SIGNIFICANCE:	Potentially significant (short-term)

The northern access road, along which runs an access easement associated with the Reason Farms property, is in disrepair and would be reconstructed as described in Section 3.5.4.7. Reconstruction would likely occur just prior to North Basin construction, which could be more than 15 years in the future.

The northern access road passes within approximately 20 feet of the one residence along this road. Equipment associated with tree removal, grading, excavation and paving would produce noise levels of approximately 93 dBA at the building façade. This would be a short-term (one week) significant impact of reconstruction of the northern access road. Mitigation of the noise levels at this residence will be necessary to comply with U.S. EPA guidelines, as described above.

If feasible and if agreed to by the affected resident, mitigation in the form of a sound attenuation barrier or boarding up of windows facing construction will be necessary to protect the residence at 6495 Sunset Boulevard West from construction noise. Since it is not certain that the resident would allow mitigation to be constructed, short-term construction noise at this residence is considered a potentially significant and unavoidable impact.

7.3.4 Construction Traffic

IMPACT N-4: Construction-related traffic would generate short-term sound level increases at noise-sensitive locations.

SIGNIFICANCE: Less than significant

MITIGATION: None warranted

Up to 65 worker vehicles will travel the northern and southern access roads to the site daily; these vehicles are expected to all arrive within the span of one hour. These roads will also handle the ingress of the heavy construction equipment; however, this equipment is expected to remain on the site for as long as it is needed each season. The routes from SR 70/99 and I-80 to the northern and southern site entrance points pass through land used for industrial, commercial, residential, and farmland purposes. The majority of the roadways comprising this route carry hundreds or thousands of vehicles per day. Only one area of the access routes, the area near the intersection of Sunset Boulevard West and Amoruso Way, will be affected by noise from the addition of this traffic. A group of homes at this intersection (residential area 4) and the residence at 6495 Sunset Boulevard West along the northern access route (residence 3) are the only residences along the access route not protected by a sound attenuation wall. The locations of these residences are shown in Figure 7-1.

Sixty-five cars traveling on a roadway at 45 mph, the speed observed on Sunset Boulevard West in the area, are expected to create a noise level of approximately 60 dB L_{eq} over one hour at residential area 4. This noise level will be much lower at residence 3, because the road material and proximity to the home dictate a maximum safe speed of approximately 25 mph. Since this noise level will only occur during two hours of the day, access traffic does not constitute a significant impact to the residences in the area.

7.4 MITIGATION MEASURES

Mitigation Measure N-1: Consult with affected residents, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or temporarily boarding up windows facing construction.

Mitigation Measure N-1 applies to Impacts N-2 and N-3.

If feasible and if agreed to by the affected residents, mitigation in the form of a sound attenuation barrier or boarding up of windows facing construction will be necessary to protect the residences at 5730 Phillip Road (residence 5), 8100 Phillip Road (residence 1), and 6495 Sunset Boulevard West (residence 3) from construction noise. For the Phillip Road residences, if a barrier is used, it should be placed near the residential buildings. It is estimated that 12-foot-high barriers would reduce the sound level at each of these two residences to a less than significant level. For residence 1, the barrier should be in place until all construction activity within 400 feet of the residence is completed. For residence 5, the barrier should be in place until all construction activity within 1,900 feet of the residence is completed. The exact placement and height of these barriers can be more fully determined at a later stage, when more information on construction sequencing and equipment is available. Since it is not certain that the residents would allow mitigation to be constructed, or that it would be feasible, construction noise at these three residences is considered a potentially significant and unavoidable impact of the proposed project.

8.0 OTHER CEQA SECTIONS

8.1 ALTERNATIVES

The discussion of alternatives is required by CEQA to "focus on alternatives capable of eliminating significant adverse environmental effects..." or reducing such effects to a level that is less than significant (CEQA Guidelines, *§15126.(d).(3)*). This section identifies initial concepts for the retention basin, including several alternatives that were considered and rejected. It also evaluates six alternatives to the proposed project, including the No Project Alternative as required by CEQA. It also identifies the environmentally superior build alternative, which is Alternative 4B.

8.1.1 Alternatives Considered and Eliminated from Further Consideration

In 2000, the City investigated three options for retention storage within the Pleasant Grove Creek Watershed. This was done as part of the Pleasant Grove Watershed Mitigation Fee Hydrology Project Report (Civil Solutions, 2000a). In 2001, developers associated with the WRSP identified another alternative, which would be located at the Reason Farms site (Wood-Rogers, Inc. and Wade Associates, 2001). Subsequently, the City of Roseville undertook a series of studies, which resulted in ten potential design concepts for retention storage, one of which is the proposed project (URS/PWA, 2002a; PWA/URS, 2002a), and two of which are alternatives analyzed in this Draft EIR. Alternatives considered and rejected are discussed below.

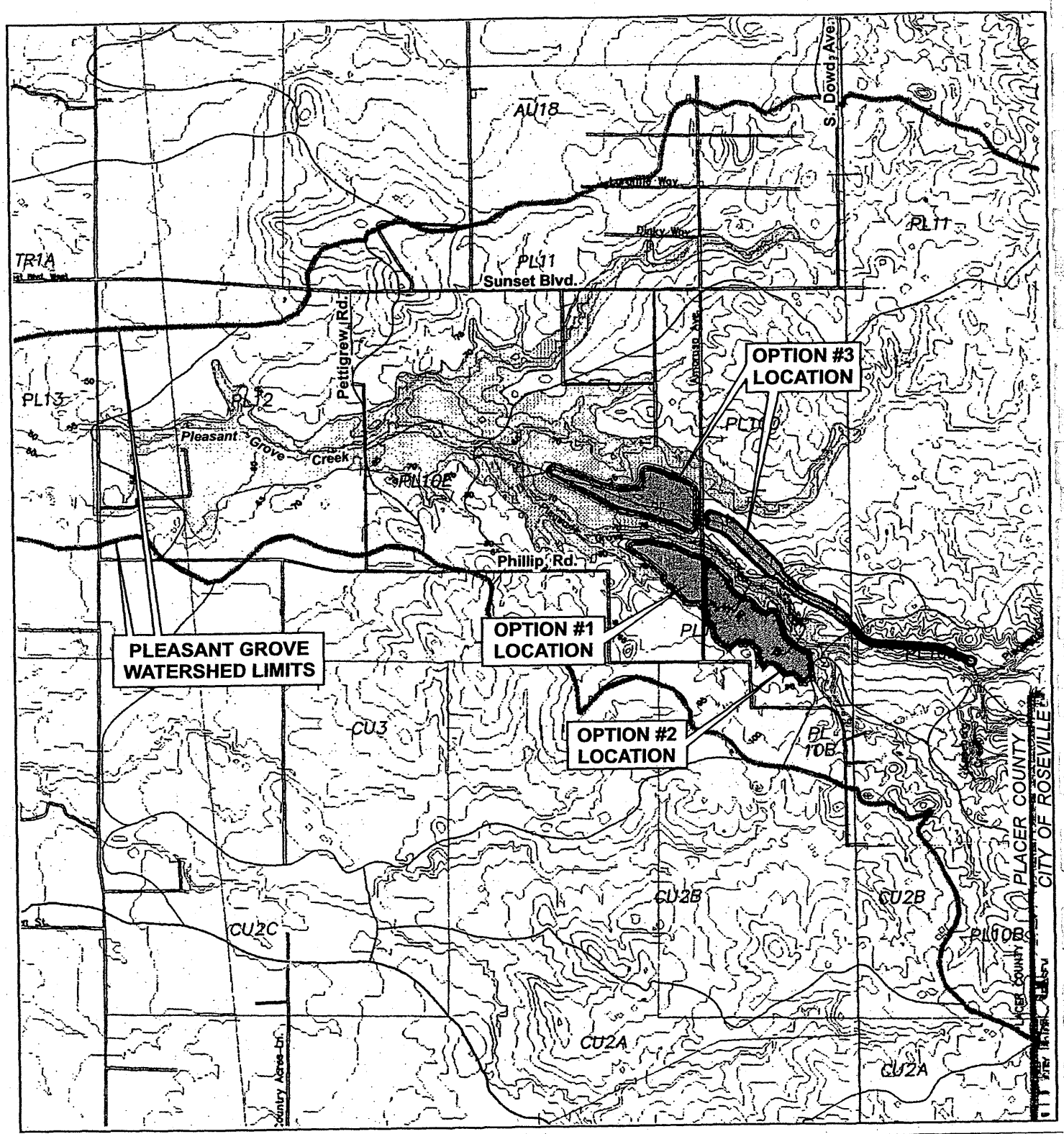
Alternatives include developing retention storage by excavation and/or construction of embankments, and retention on the Reason Farms site and at other sites.

Storage Developed by Excavation

The alternatives developed by Civil Solutions were three preliminary concepts for a retention basin located partially on or near the Reason Farms site (Figure 8-1). All three concepts employed an excavation and disposal method to develop approximately 1,500 acre-feet of retention storage.

The Wood-Rogers and Wade Associates retention basin concept employed a similar method on the Reason Farms site to develop approximately 2,000 acre-feet of retention storage.

The initial concept prepared by URS for the Reason Farms site also considered providing storage volume through excavation. For screening purposes, three conceptual basin locations providing 2,250 acre-feet of storage were identified (URS/PWA, 2002). The URS concept differed from the Civil Solutions and Wood-Rogers concepts primarily in the depth of excavation and the resulting basin surface area.



Source: Civil Solutions (2000). Hydrology Project Report for Fee Revisions, Pleasant Grove Watershed Mitigation Fee for the City of Roseville.

LEGEND

Proposed Retention Storage Areas

N

0 4000

Scale (feet)

Figure 8-1
OPTIONS FOR RETENTION STORAGE STUDIED IN PLEASANT GROVE WATERSHED MITIGATION FEE HYDROLOGY REPORT

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Preliminary estimates of excavation volumes required for all excavation-based concepts ranged from 1,815,000 cubic yards for 1,500 acre-feet of storage volume to 5,630,000 cubic yards for 2,310 acre-feet of storage volume.

Given the City's volume requirements and the prohibitive costs associated with a basin developed primarily through excavation, these alternatives were not considered further.

Storage Developed by Embankment

Six preliminary alternatives (Alternatives A through F) focusing on the use of embankments were then iteratively developed by URS for the Reason Farms site. These alternatives are described in some detail in Appendix A of the Conceptual Design Report (PWA/URS 2002).

These alternatives used a combination of soil excavation and embankment construction on the north and south sides of Pleasant Grove Creek. The main concept was to create the required storage volume by constructing embankments to contain water within storage basins in the lower-lying areas on both sides of the creek. The embankment materials would be generated by excavation of two channels that would convey flows to and through the basins. This concept would reduce the amount of required excavation by more effectively using the existing site topographical features. Similar to the proposed project, flow would be captured from the south side of Pleasant Grove Creek via a bypass channel; on the north side, flow would be captured on-line from Northern Tributary Two.

Alternatives A and B involved developing storage primarily through embankment construction. It was assumed that excavation would be limited to the volume needed for embankment construction (balanced cut and fill). Alternative A involved storage on only the north side of the creek, while Alternative B included basins on both sides. For both alternatives, a portion of the North Basin was allowed to extend off site. This would result in occasional flooding just east of the site, in the vicinity of Northern Tributary Two, resulting in impacts to an existing vernal pool complex in this area. Although Alternatives A and B significantly reduced construction costs when compared to constructing a basin primarily through excavation, the land acquisition and mitigation costs associated with offsite impacts were prohibitive, and these alternatives were not carried forward for more detailed evaluation.

Alternative C was developed to limit the boundary of the North and South basins to be within the Reason Farms site. This alternative would involve embankment construction, plus additional excavation to develop the requisite storage volume. Even with the embankment concept, the costs associated with the amount of excavation required to achieve the requisite retention volume were very high, potentially beyond the range of fees that would be generated to fund the project.

An area of low-lying property west of the Reason Farms site (south of Pleasant Grove Creek) was then examined for its potential to add retention storage to the South Basin. It was determined that the additional storage provided by this property could be used to offset the required size of the North Basin,

thus reducing or eliminating offsite impacts affecting vernal pools. Two alternatives were developed (Alternatives D and E), both of which would require purchase of approximately 170 acres of the offsite property. In Alternative D, the additional retention volume in the South Basin would lower the design water surface of the North Basin by 3 to 4 feet to reduce the extent of offsite inundation. In Alternative E, the North Basin would be limited to the Reason Farms site, so no offsite inundation would occur. Additional excavation would be required for Alternative E to develop the requisite 2,250 feet of retention storage. Both of these alternatives were rejected. Alternative D was rejected because offsite vernal pools would still be affected, resulting in adverse biological impacts and high costs associated with land or easement acquisition and high mitigation costs. Alternative E was rejected because the excavation costs, while lower than for Alternative C, were still considered to be potentially beyond the range of fees that would be generated to fund the project.

Alternative F was similar to Alternatives D and E, except that the water surface in the South Basin would be approximately 1.5 feet higher than the other alternatives described above. This was achieved by raising the height of the embankment in the South Basin to its maximum height, based on hydraulic considerations. Alternative F would therefore provide 2,250 feet of storage without requiring offsite inundation. Alternative F appeared to be a feasible concept, except that the City's additional storage volume requirement (up to 2,530 acre-feet) was better met by the proposed project. Two subsets of Alternative F were found to be generally feasible, and are considered in this Draft EIR as Alternatives 3 and 4A, as described in Sections 8.1.2.3 and 8.1.2.4 below.

Examination of Alternative Sites

To effectively evaluate alternative sites, the project objectives were used to determine the reasonableness and feasibility of each alternative site. The following guidance was initially used to direct development of the alternative sites:

- Alternative sites must be located within a watershed basin capable of generating runoff volume on the order of 2,000 to 3,000 acre-feet during the 100-year, 8-day storm as defined by agreement between Placer and Sutter counties;
- Site selection should allow for a study of a diverse range of retention methods and locations, including in line and off channel techniques;
- Alternative sites should allow for retention capabilities without pumping and minimize the need for relocation or reconstruction of major improvements such as structures or roads; and
- Areas being considered for future development for which no official development application has been submitted shall not be excluded from consideration as potential alternative sites.

URS and PWA prepared a screening level evaluation that considered two locations for a retention basin in addition to the Reason Farms site. These additional locations appeared to meet the criteria described above. One alternative site was identified along Curry Creek, south of the Reason Farms site. This site

was found to be generally feasible at the screening level, and it is considered in this Draft EIR as Alternative 2, as described in Section 8.1.2.2 below. The second alternative site considered in the initial screening level evaluation was comprised of lands to the north and east of Reason Farms, and encompassing the northernmost portion of the Reason Farms site. This alternative (called the Northeast Alternative) is discussed below.

The Northeast Alternative includes two roughly rectangular connected offset areas, totaling 1,493 acres (Figure 8-2). The area to the northwest incorporates a small portion of the northern part of the Reason Farms site, and the other area lies to the southeast. Sunset Boulevard West forms the northern boundary of the Northeast Alternative, and the southern boundary of the southeastern portion extends to Pleasant Grove Creek at about the location where the creek enters the Reason Farms site. This alternative encroaches into the northwestern corner of the Signature Properties portion of the proposed WRSP.

The southeastern portion of this area features vernal pool wetlands, stream environment zones, and riparian areas. Vernal pool fairy shrimp, a federally listed species, potentially occur within the vernal pools that dominate this area. During the screening level evaluation it became clear that in order to meet the storage capacity required by the City, the Northeast Alternative would require periodic inundation in the southeastern portion of the site, adversely affecting high-quality vernal pool habitat and potentially affecting a federally listed species. The Northeast Alternative was eliminated from further consideration due to the conflict with natural resource agency goals, and the likely high cost of mitigating an alternative that would impact the existing high-quality vernal pool complex.

No other feasible site locations were examined.

8.1.2 Alternatives Selected for More Detailed Analysis

Project objectives and feasibility narrowed the alternatives for analysis in this Draft EIR to those described below. The No Project Alternative (Alternative 1) and five "action" project alternatives, one of which involves two sub-alternatives, were selected to represent the range of project options for purposes of evaluating environmental impacts. The primary components that differentiate one alternative from another and from the proposed project are identified on Table 8-1, below. Please note that costs would be relatively proportional to the amount of excavation required.

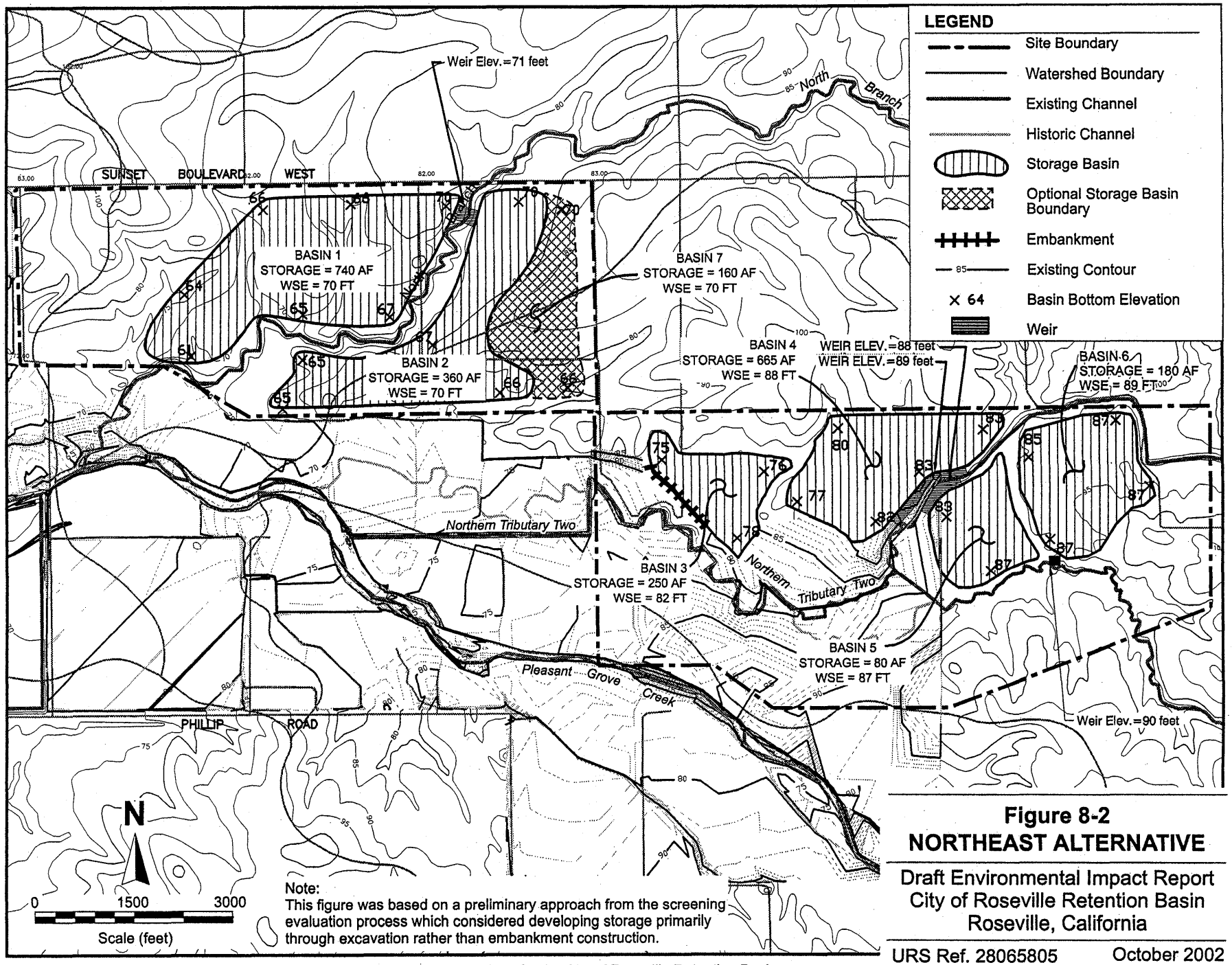


Figure 8-2
NORTHEAST ALTERNATIVE

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Source: URS (2002). Screening Level Evaluations of Alternative Site Locations for the City of Roseville Retention Basin. Prepared in association with Phillip Williams & Associates for the City of Roseville. March 8, 2002.

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Table 8-1
Summary of Primary Components of Alternatives and the Proposed Project

Alternatives		Storage Volume (ac ft)	Excavation Required (cu yd)	Embankments Required (lineal ft)	Offsite Vernal Pool Impacts[1]	Onsite Vernal Pool Impacts
No.	Description					
1	No Project	0	0	0	No	No
2	Curry Creek	2,140-2,530	170,000-799,000	8,600	Yes	Yes
3	Embankment Setback	2,530	1,104,000	28,900	No	No
4A	Reduced Excavation	2,250	652,000	28,900	No	No
4B	South Basin Only	1,850	500,000	17,300	No	No
5	Levee Removal	Note[2]	N/A	N/A	No	No
6	Drainage Conveyance Alternative	Note[2]	N/A	N/A	No	No
	Proposed Project	2,530	761,000	29,300	Yes	No

Notes: 1 Impacts within 250 feet of vernal pools.
2 Parameters would be consistent with the proposed project or whichever alternative is constructed.

8.1.2.1 Alternative 1 – No Project Alternative

This alternative is a "no action" alternative. Under this alternative, the proposed project would not be developed. The basic landform at the site would remain in its present condition, and a retention basin and associated structures would not be built. In addition, other adverse and beneficial effects associated with the proposed project would not occur.

Aesthetics

The No Project Alternative would result in the site remaining in its existing condition. The proposed project would reduce the area used for rice farming, which may reduce the number of winter waterfowl attracted to the site, would remove several trees in the riparian zone, and would introduce man-made structures to the site. The man-made structures would include inlet and outlet structures, bypass channels, embankments, limited fencing, sign posts, maintenance roads, and landscape materials. These modifications to the site as a result of the proposed project would impact aesthetics by changing the visual quality and character of the site. The No Project Alternative would be preferred to the proposed project as the site would remain in its existing condition, and there would be no impact to aesthetics.

Agricultural Resources

The No Project Alternative would result in the site remaining in its existing condition, and it would likely continue to be used for rice farming. The proposed project would convert important farmland to non-agricultural use, and before mitigation, would conflict with an area subject to a Williamson Act Contract.

The No Project Alternative would be preferred to the proposed project, as the site would remain in its existing condition and there would be no impact to agricultural resources.

Air Quality

The No Project Alternative would result in the site remaining in its existing condition. The rice fields are currently ploughed once annually in preparation for planting of rice. The use of the tractor and plough for this activity would generate air emissions and dust. The proposed project would result in air emissions and dust generated from use of equipment during construction. However, while the construction period would generate large-scale emissions, it would do so only once, and thereafter there would be no emissions. Therefore, the proposed project would be preferred to Alternative 1.

Biological Resources

The No Project Alternative would result in the site remaining in its existing condition. As described in Section 6.3, Biological Resources, the proposed project would result in impacts to oak trees, seasonally ponded depression habitat suitable for vernal pool branchiopods, and riparian habitat. However, the project would conserve the existing high-quality riparian habitat along the main branch of Pleasant Grove Creek, and it would also enhance Northern Tributary Two by restoring it to its approximate historic location. As part of the restoration of Northern Tributary Two, the area of the streambed and riparian wetland would be increased, and the width of the floodplain would be increased. Due to the conservation of and increase in riparian habitat, the proposed project would be preferred to the No Project Alternative.

Cultural Resources

The No Project Alternative would result in the site remaining in its existing condition. The proposed project could potentially impact cultural resources. Two cultural sites (one archaeological, one historical) have been recorded for the site, but no evidence of these sites was identified during the field survey. Due to the high level of disturbance present at the site from rice farming, it is likely that these sites may be buried and could be uncovered during construction activities. The No Project Alternative would be preferred to the proposed project, as the site would remain in its existing condition and there would be no risk of impact to cultural resources.

Geology and Soils

The No Project Alternative would result in the site remaining in its existing condition. The rice fields are currently ploughed once annually in preparation for planting of rice. The ploughing of the soil currently generates a small quantity of erosion on an annual basis. The development of the proposed project would result in a short-term increase in erosion associated with grading activities. The proposed project would be slightly preferred to the No Project Alternative because grading would be discontinued after construction of the proposed project.

Hazards and Hazardous Materials

The No Project Alternative would result in the site remaining in its existing condition. Hazardous materials are currently stored on the site for farm use, as described in Section 3.7, Hazards and Hazardous Materials, of the Initial Study (included as Appendix A-2). The proposed project would result in the removal and disposal of the hazardous materials in accordance with applicable regulations for transport and disposal prior to the demolition of structures. The proposed project would be preferred to the No Project Alternative as those hazardous materials present on the site would be removed, thereby eliminating risk of future hazards.

Hydrology and Water Quality

Under the No Project Alternative, existing surface water flow and surface water quality trends in Pleasant Grove Creek and Northern Tributary Two would continue much as they are today. Flood flows passing through the site would not be altered. The retention basin would not be constructed and therefore peak flows and flood elevations in Pleasant Grove Creek would not be reduced. Runoff volumes downstream of the site would not be reduced and the flood hazard reduction, intended to mitigate flood volume increases from development within the City of Roseville and elsewhere in south Placer County, would not be realized.

The No Project Alternative would not involve construction of the retention basin embankments and inlet and outlet structures. The potential for short-term increases in erosion and sedimentation would not occur. However, in the long term, the No Project Alternative could result in higher erosion and sediment loads in Pleasant Grove Creek because Northern Tributary Two would not be restored. In its existing condition, Northern Tributary Two is actively incising along an approximately 500-foot reach. Under the No Project Alternative the incision would continue and would migrate upstream through the project site.

For the No Project Alternative, assuming that rice farming would continue, groundwater would be extracted and used for rice production.

The proposed project would have certain beneficial impacts associated with a reduction in flow rates and flood elevations in Pleasant Grove Creek, the repair of the existing active incision in Northern Tributary Two and the restoration of Northern Tributary Two to a more natural state. These beneficial impacts would not be realized with the No Project Alternative. Therefore, with respect to hydrology and water quality, the proposed project would be preferred over the No Project Alternative.

Land Use and Planning

Objectives, goals and policies of the City of Roseville's General Plan and Bikeway Master Plan, Placer County's General Plan, and the Placer Legacy Open Space and Agricultural Conservation Program

Planning Agreement applicable to the project are presented in Section 3.9, Land Use Planning, of the Initial Study. The Initial Study is included as Appendix A-2.

The No Project Alternative would result in the site remaining in its existing condition and being farmed for rice and dry crops. The No Project Alternative would comply with those objectives, goals and policies relating principally to agricultural use and biological resources. The proposed project would result in the site being used for the retention of flood waters and would be managed as public open space. Riparian habitat would be conserved and would increase in area as a result of the proposed project. The proposed project would also present opportunities for future recreation and trail/bikeway systems. The proposed project would comply with those objectives, goals and policies relating to flood control, protection of biological resources, provision of open space, recreation and provision of trail/bikeway systems. The proposed project would not comply with those objectives, goals and policies relating to agricultural use: however, it would comply to a greater extent to other objectives, goals and policies, principally relating to biology, flood control, recreation, and open space.

When compared to the No Project Alternative, the proposed project complies with a greater number of relevant objectives, goals and policies. Therefore, the proposed project would be preferred to the No Project Alternative.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites are known to be within the project area. There would be no preference between the proposed project and the No Project Alternative, as neither alternative would have an impact.

Noise

The No Project Alternative would result in the site remaining in its existing condition. The No Project Alternative would not result in any change to current noise levels. The proposed project would result in a temporary increase in noise levels from equipment during construction. The No Project Alternative would be preferred to the proposed project as there would be no change to current noise levels.

Population and Housing

The No Project Alternative would result in the site remaining in its existing condition. The project area currently contains one residential area consisting of four mobile homes and two additional residences (Amarel, 2002). Five people reside at the mobile homes, five people reside at one house, and two people reside at the remaining house (Amarel, 2002). The proposed project would result in the demolition of the residences. It could, however, facilitate the development of areas not currently included in City or County General Plans, such as the West Roseville Specific Plan area, the MOU area, or other areas by providing storage for stormwater generated by such development. Such development could result in

additional unplanned population and housing growth to the region. Therefore, the No Project Alternative would be preferred to the proposed project.

Public Services

The No Project Alternative would result in the site remaining in its existing condition. The site is currently used for farming and dry crops and has a low demand for police and fire protection services and no demand or impact on schools, parks or other public facilities. The proposed project would slightly increase fire risk through an increase in vegetation from leaving the rice fields fallow and would also slightly increase demand for public services through maintenance activities undertaken by the City of Roseville's Public Works Department. The proposed project would also slightly increase the demand for police protection services as the site would be managed as public open space and may increase public access to the site. There would be increased potential for trespassing on adjacent private lands, which may also slightly increase the demand for police protection services. Therefore, the No Project Alternative would be preferred to the proposed project.

Recreation

The No Project Alternative would result in the site remaining in its existing condition and would not result in any change to the existing recreational use of the site. The site is currently used for private hunting and fishing. The primary purpose of the proposed project is to provide retention storage for floodwaters. Other uses for the site (compatible with retention of floodwaters) have not been determined; however, they could potentially include opportunities for recreation. These opportunities could include walking, and biking through the potential for future creation of trail/bikeway systems, while potentially still being used for fishing and hunting. The proposed project would be preferred to the No Project Alternative as a greater number of recreational opportunities could potentially be available as a result of the proposed project.

Transportation/Traffic

The No Project Alternative would result in the site remaining in its existing condition. No increase in traffic levels would occur. The development of the proposed project would result in a short-term increase in traffic during construction. Therefore, the No Project Alternative would be preferred to the proposed project.

Utilities and Service Systems

The No Project Alternative would result in the site remaining in its existing condition. The proposed project would generate a modest demand for water for dust control and cleaning, and for solid waste disposal during construction. These demands can be adequately met with onsite groundwater resources and by the Western Regional Sanitary Landfill. The proposed project would not generate wastewater.

The proposed project would provide stormwater retention in accordance with the Placer County Flood Control and Water Conservation District's recommendation for regional stormwater retention in this vicinity (Placer County Flood Control and Water Conservation District, 1993). The proposed project would be preferred to the No Project Alternative due to the stormwater retention benefits it provides, as well as its substantial decrease in demand for groundwater.

8.1.2.2 Alternative 2 – Curry Creek Alternative

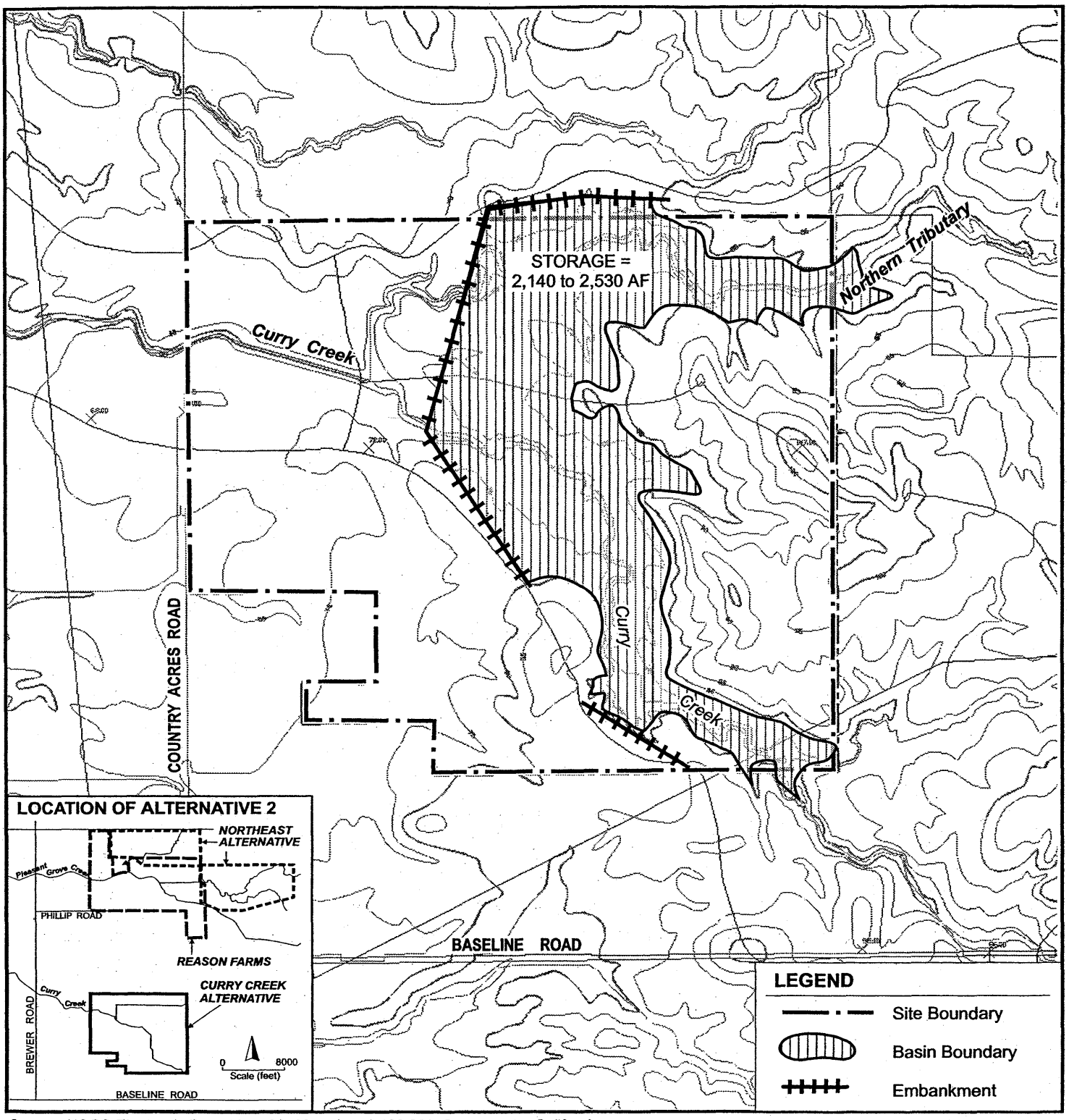
The Curry Creek Alternative is an offsite alternative. Under Alternative 2, a proposed retention basin and associated structures would be built on a site approximately two miles south of the Reason Farms site, and 2¼ miles west of the city limits of Roseville. Roughly square, it is approximately bisected by Curry Creek in a southeast to northwest line. Its southern border is approximately one-half mile north of Baseline Road (Figure 8-3).

Alternative 2 would have a total storage capacity of approximately 2,140 acre-feet. This could be expanded to 2,530 acre-feet through excavation or by raising the height of the embankments, or a combination of both. The water surface elevation in Alternative 2 would be at approximately 79 feet.

In Alternative 2, an embankment would begin near the southern boundary of the Curry Creek site, and extend generally in a northern direction through the site, crossing the main branch of Curry Creek and Curry Creek Northern Tributary One. The embankment would continue to the northern boundary of the Curry Creek site and then follow an easterly path to tie into high ground. The embankment would be approximately 8,600 feet in length, and would have a top width and side slopes similar to the proposed project and would be at an elevation of approximately 84 feet. About 170,000 cubic yards of material would be required to construct the embankment; this material would be generated through onsite excavation.

The two primary outlet locations would be on the main stem of Curry Creek, and on Curry Creek Northern Tributary One. The structures at each location would be similar and would consist of sluice gates and a primary spillway. At each location, two 6-foot by 6-foot gates would normally be open. These would allow passage of water with minimal backwater for flows up to the peak of the 100-year, 24-hour storm. These gates would be set in a reinforced concrete wall measuring approximately 80 feet in length and 15.5 feet in height. The gates would be made of steel and have automatic actuators. Their inverts would be set approximately at the thalweg elevation of both outlet creek locations (63 feet).

The top of the wall would act as a weir and function as the primary spillway. The wall would be set between two reinforced concrete wingwalls to transition to the surrounding earthen embankment. The crest of the embankment would be at approximately elevation 83.5 feet.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California.
PWA (2002). Memorandum - Conceptual Design for Embankment Alternatives, Reason Farms Retention Basin, City of Roseville.

N

0 2000

Scale (feet)

Figure 8-3
ALTERNATIVE 2
CURRY CREEK ALTERNATIVE

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Each outlet structure would have a concrete floor. The upstream and downstream edges of the floor would have a cutoff wall and footing extending about 6 feet beneath the finished grade of the floor. On the downstream side of each outlet structure, concrete thrust blocks would be poured integral to the floor. The thrust blocks would assist with energy dissipation at times when the sluice gates are opened.

An emergency spillway would be located between the two primary outlet locations, providing additional capacity required by the Division of Safety of Dams (DSOD) for the 1,000-year, 24-hour storm. The emergency spillway crest would operate as a broad-crested weir measuring 440 feet in length. It would be grass lined and discharge overland to Curry Creek and Curry Creek Northern Tributary One.

Aesthetics

Alternative 2 presents a range of storage volumes that could be developed. In the event that Alternative 2 has a slightly lower storage volume than the proposed project (2,140 acre-feet compared to 2,530 acre-feet), Alternative 2 would result in a significantly lower quantity of excavation than the proposed project (170,000 cubic yards compared to 761,000 cubic yards, respectively). In this event, Alternative 2 would have a shorter embankment (8,600 lineal feet versus 29,300 lineal feet) of the same height as the proposed project. No excess fill would be generated. The shorter embankment would be less visually intrusive than the proposed project; however, it may be observed by more people because of its proximity to Baseline Road, which has higher traffic loads than Sunset Boulevard West, Phillip Road and Pettigrew Road bordering the proposed project area. Assuming a reduced storage capacity for Alternative 2, there would be no preference between Alternative 2 and the proposed project as both sites would have a similar visual impact.

In the event that Alternative 2 has a storage capacity equal to the proposed project (2,530 acre-feet), Alternative 2 would result in a slightly greater quantity of excavation than the proposed project (799,000 cubic yards versus 761,000 cubic yards, respectively). The embankment under this Alternative 2 scenario would still be shorter than the proposed project, but it could be taller. The excess excavated material generated as a result of increasing the storage capacity could be used to extend the height of the embankment or be spread over remaining areas within the site, or a combination of both. A taller embankment would be more visually intrusive than the proposed project, and may be observed by more people. A lack of taller landscape elements on the site could provide a modulating backdrop as opposed to the riparian habitat along Pleasant Grove Creek. Assuming a project of similar storage capacity as the proposed project, the proposed project would be preferred to Alternative 2.

Agricultural Resources

The Alternative 2 site contains approximately 30 acres of Farmland of Statewide Importance, 834 acres of Unique Farmland and 653 acres of Farmland of Local Importance. No land within the Alternative 2 site is subject to Williamson Act contracts.

The proposed project area contains approximately 75 acres of Prime Farmland, 300 acres of Farmland of Statewide Importance, 900 acres of Unique Farmland and 150 acres of Farmland of Local Importance. The southwestern portion of the project area, including portions of parcels 17-010-033 and 17-090-028, is currently under contract (no. 536) and is active.

The proposed project would have a greater impact on agricultural resources, as the proposed project would impact land subject to Williamson Act contracts and also contains land classified as Prime Farmland. While Alternative 2 would result in significant unavoidable impacts to agricultural resources, impacts would be less severe than those associated with the proposed project. Alternative 2 would be preferred to the proposed project.

Air Quality

Alternative 2 presents a range of storage volumes that could be developed. In the event that Alternative 2 has a slightly lower storage volume than the proposed project, Alternative 2 would result in a significantly lower quantity of excavation and a shorter embankment than the proposed project, as described above. A shorter embankment and significantly less excavation required would require a shorter construction period and use of emission generating equipment. In addition, less fugitive dust would be generated due to less grading. Assuming less storage capacity for Alternative 2, Alternative 2 would be preferred to the proposed project.

In the event that Alternative 2 has a storage capacity equal to the proposed project (2,530 acre-feet), Alternative 2 would result in a slightly greater quantity of excavation than the proposed project (799,000 cubic yards versus 761,000 cubic yards). The impacts of Alternative 2 and the proposed project would be similar, because although Alternative 2 requires a slightly larger quantity of excavation, the proposed project would extend fill placement over a larger area in order to construct the longer embankment. A similar quantity of air emissions would be likely generated. Mitigation measures identified for the proposed project would reduce the severity of impacts associated with these activities, but not to a less than significant level. Assuming a project of similar storage capacity as the proposed project, there would be no preference between Alternative 2 and the proposed project.

Biological Resources

An aerial (helicopter) survey of the Alternative 2 site was undertaken on January 9, 2002. Alternative 2 would impact small areas of riparian vegetation along Curry Creek due to the construction of the inlet and outlet structures. Indirect impacts would occur to vernal pools just outside the inundation area. The proposed project would also impact small areas of riparian vegetation along Pleasant Grove Creek, and vernal pools. These impacts would be fully mitigated under either Alternative 2 or the proposed project. Because the proposed project would create additional riparian habitat and waters of the U.S., the proposed project would be preferred to Alternative 2.

Cultural Resources

A record search of available information was conducted at the North Central Information Center (NCIC) of the California Archaeological Inventory at the California State University Sacramento. Only one historical record was listed as occurring within the Alternative 2 site. This is the Sacramento and Nevada Road and bisects the eastern portion of the site in a north-south direction. This road also bisects the proposed project area, an no evidence of this site was identified during the field survey of the proposed project area. No field surveys for cultural resources have been undertaken within the Alternative 2 site. However, it is likely that additional archaeological sites could occur within the Alternative 2 site due to its proximity to Curry Creek.

The proposed project could potentially impact cultural resources. Two cultural sites (one archaeological, one historical) have been recorded for the site by the NCIC, but no evidence of these sites was identified during the field survey. Due to the high level of disturbance present at the site from rice farming, it is likely that these sites may be buried and could be uncovered during construction activities. Mitigation measures identified for the proposed project would reduce impacts to Alternative 2 to a less than significant level.

There would be no preference between Alternative 2 and the proposed project as the development of both projects could potentially disturb cultural resources.

Geology and Soils

Alternative 2 presents a range of storage volumes that could be developed. In the event that Alternative 2 has a slightly lower storage volume than the proposed project, Alternative 2 would result in a significantly lower quantity of excavation than the proposed project and a shorter embankment, as described above. Less grading and contouring required for Alternative 2 due to less excavation and the shorter embankment would result in less alteration of topography and a lower level of erosion. Mitigation measures identified for the proposed project would reduce impacts to a less than significant level. Assuming less storage capacity for Alternative 2, Alternative 2 would be preferred to the proposed project.

In the event that Alternative 2 has a storage capacity equal to the proposed project (2,530 acre-feet), Alternative 2 would result in a slightly greater quantity of excavation than the proposed project (799,000 cubic yards versus 761,000 cubic yards). Alternative 2 would have a shorter and potentially taller embankment. The excess excavated material generated as a result of increasing the storage capacity could be used to extend the height of the embankment or be spread over remaining areas within the site, or a combination of both. Assuming a project of similar storage capacity as the proposed project, the proposed project would be slightly preferred over Alternative 2 because of the additional excavation and possibility of spreading excess excavated materials at the site required for Alternative 2. Assuming this

storage capacity for Alternative 2, there would be no preference between Alternative 2 and the proposed project.

Hazards and Hazardous Materials

A Phase I Environmental Site Assessment was not completed for the Alternative 2 site, and it is not known whether any hazards or hazardous materials occur within the site. Aerial visual observation was undertaken to determine whether any structures that may potentially contain hazardous substances were present within the site. No features were observed at the Curry Creek site that may potentially contain hazardous substances.

The proposed project area contains hazardous substances for farm use located within the site. The proposed project would result in the removal and disposal of the hazardous materials in accordance with applicable regulations for transport and disposal prior to the demolition of structures.

Alternative 2 would be preferred to the proposed project on the basis that it would not likely impact hazardous materials.

Hydrology and Water Quality

Alternative 2 would have flood hazard reduction benefits similar to the proposed project. It would provides an equal volume of retention storage and would result in reduced flow rates and flood elevations within Curry Creek downstream of the Alternative 2 site. The Curry Creek site is also currently used for rice farming, therefore, with Alternative 2, it would be expected that groundwater extraction for rice production would be reduced. Alternative 2 would require earthwork for embankment and inlet and outlet construction similar to proposed project. Therefore, Alternative 2 would have a similar potential for short-term water quality degradation due to increased erosion and sedimentation.

However, the Curry Creek watershed is much smaller that the Pleasant Grove Creek watershed and would be expected to generate proportionally less runoff. A greater proportion of the overall runoff from the Curry Creek watershed would need to be captured to attain the total storage needed to mitigate for the increase in runoff volume emanating from the City. Because of the comparatively small size of the Curry Creek watershed, the time frame within which to capture runoff would be shorter that with the proposed project. This could present operational challenges and operation criteria would be more critical. With less time to respond and with less water to capture, Alternative 2 would be expected to have a lower probability of capturing and storing water when needed.

With Alternative 2, Northern Tributary Two at the Reason Farms site would not be restored to a more natural condition and the existing active incision on Northern Tributary Two would not be repaired. With Alternative 2, the beneficial impacts of the proposed project on the water quality of Pleasant Grove Creek would not occur.

Although Alternative 2 may be theoretically feasible with hydrologic impacts similar to the proposed project, it would not have beneficial water quality impacts associated with the proposed project. Furthermore, given the smaller watershed for Alternative 2 and therefore the expected lower probability of capturing and storing water when needed, the proposed project would be preferred over Alternative 2.

Land Use and Planning

Objectives, goals and policies of the City of Roseville's General Plan and Bikeway Master Plan, Placer County's General Plan, and the Placer Legacy Open Space and Agricultural Conservation Program Planning Agreement applicable to the project are presented in Section 3.9, Land Use Planning, of the Initial Study (Appendix A-2).

Both Alternative 2 and the proposed project would result in their respective sites being used for the retention of flood waters and being managed as public open space. Riparian habitat would be conserved and would increase in area as a result of both alternatives. Either would comply with those objectives, goals and policies relating to flood control, protection of biological resources, provision of open space, recreation and provision of trail/bikeway systems. Alternative 2 or the proposed project would both conflict with those objectives, goals and policies relating principally to agricultural use, although the proposed project would conflict to a greater degree, as described in Chapter 4.0. Alternative 2 and the proposed project present opportunities for future recreation and trail/bikeway systems, although the existing riparian habitat along Pleasant Grove Creek would provide better amenities associated with passive recreational opportunities. There is no clear preference between Alternative 2 and the proposed project.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites within the project area or the Alternative 2 site. There would be no preference between the proposed project and Alternative 2, as neither alternative would have an impact.

Noise

Alternative 2 presents a range of storage volumes that could be developed. In the event that Alternative 2 has a slightly lower storage volume than the proposed project, Alternative 2 would result in a significantly lower quantity of excavation and a shorter embankment than the proposed project, as described above. Two buildings that could be farm buildings or residences are located within the Alternative 2 site. One building is located along the northern boundary and would not be demolished as a result of Alternative 2. The other building is located to the southwest of the center of the Alternative 2 site and would require demolition. There are no residences which are located adjacent to the Alternative 2 site. The building located along the northern boundary would be a sensitive receptor and subject to an increase in noise during construction. A shorter embankment and significantly less excavation required would require a

shorter construction period and use of noise generating equipment. Assuming less storage capacity for Alternative 2, Alternative 2 would be preferred to the proposed project as fewer sensitive receptors would be subject to a shorter duration of noise during construction.

In the event that Alternative 2 has a storage capacity equal to the proposed project (2,530 acre-feet), Alternative 2 would result in a slightly greater quantity of excavation than the proposed project (799,000 cubic yards versus 761,000 cubic yards). The excess fill could be used to extend the height of the embankment or be spread over remaining areas within the site, or a combination of both. A similar level of use of noise generating equipment would generate similar noise levels and duration for both alternatives. Assuming this storage capacity for Alternative 2, Alternative 2 would be preferred to the proposed project as fewer sensitive receptors would be subject to noise during construction.

Population and Housing

The Alternative 2 site contains several buildings, which may be residences or farm buildings. It is not known how many persons reside in these buildings. These buildings would be demolished if Alternative 2 were developed.

The proposed project area contains one residential area of four mobile homes and two residences (Amarel, 2002). Five people reside at the mobile homes, five people reside at one house and two people reside at the remaining house (Amarel, 2002). These residences would be demolished as a result of the proposed project.

In addition, both Alternative 2 and the proposed project could facilitate the development of areas not currently included in City or County General Plans, such as the West Roseville Specific Plan area, the MOU area, or other areas by providing storage for stormwater generated by such development. Such development could result in additional unplanned population and housing growth to the region. This would be a significant unavoidable impact of Alternative 2. There would be no preference between Alternative 2 and the proposed project.

Public Services

The development of Alternative 2 would result in the Alternative 2 site being managed as public open space and the rice fields left fallow. Leaving the rice fields fallow may slightly increase the density of riparian vegetation available as a fire fuel source and may slightly increase the demand for fire protection services. The management of the Alternative 2 site as public open space would increase public access and may slightly increase illegal trespassing of adjacent areas. The mitigation measure identified for recreation impacts of the proposed project would reduce this impact to a less than significant level. This may increase the demand for police protection services to the Alternative 2 site. Development of Alternative 2 would also increase demand for other public facilities such as the City of Roseville Public Works Department for maintenance activities. Alternative 2 would not impact schools.

The proposed project would result in similar impacts to police protection services, schools and other public facilities such as the City of Roseville Public Works Department, because the project would also be managed as public open space and any rice fields would be left fallow. However, the proposed project may have a slightly greater impact on fire protection services, because the area that is currently occupied by rice farming is larger than Alternative 2 and would result in a larger area left fallow. Therefore, Alternative 2 would be slightly preferred to the proposed project.

Recreation

The development of Alternative 2 would result in the Curry Creek site being managed as public open space. The increased public access at the Curry Creek site may attract individuals seeking passive recreational activities within the site. No hunting or fishing clubs are currently known to operate within the Alternative 2 site.

Wilderness Unlimited currently operates a fishing and hunting club within the proposed project area. The operation of the club is unlikely to continue following the development of the proposed project. However, fishing and hunting may still continue.

The riparian zone along Pleasant Grove Creek is of greater biological value than that along Curry Creek and would likely attract a greater number of individuals to the project area for passive recreation than to the Alternative 2 site. Therefore, the proposed project would be preferred to Alternative 2 as it would provide a greater opportunity for recreational use.

Transportation/Traffic

Construction access to the Alternative 2 site would be via Baseline Road from State Route (SR) 70/99 from the west or SR 65 and Interstate 80 (I-80) from the east. Since more construction traffic would travel along Baseline Road, and Baseline Road already carries more traffic than other access roads for the proposed project, Alternative 2 would have a slightly greater impact on traffic during construction. There would be no difference during operation. The proposed project would therefore be preferred to Alternative 2.

Utilities and Service Systems

The Alternative 2 site is currently used for rice farming and grazing. It is expected that groundwater is extracted for use within the site for rice farming; however, how much groundwater is used annually is not known. The development of Alternative 2 would result in the reduction of groundwater used for farming, as a much smaller area would be suitable for use as rice farming. A small quantity of groundwater would be used during construction for dust control and cleaning of equipment. Solid waste would also be generated during construction; however, this quantity would be adequately met by the Western Regional Sanitary Landfill. Alternative 2 would not generate wastewater, and would therefore not exceed

wastewater requirements, impact additional demand for wastewater treatment services, or result in the construction of new wastewater treatment facilities. The development of Alternative 2 would also not require the construction of new stormwater treatment facilities.

The proposed project would have similar impacts on public services, except for groundwater. The development of either Alternative 2 or the proposed project would result in a reduction of groundwater used for farming. However, the reduction is likely to be greater for the proposed project, as a larger area would be taken out of production.

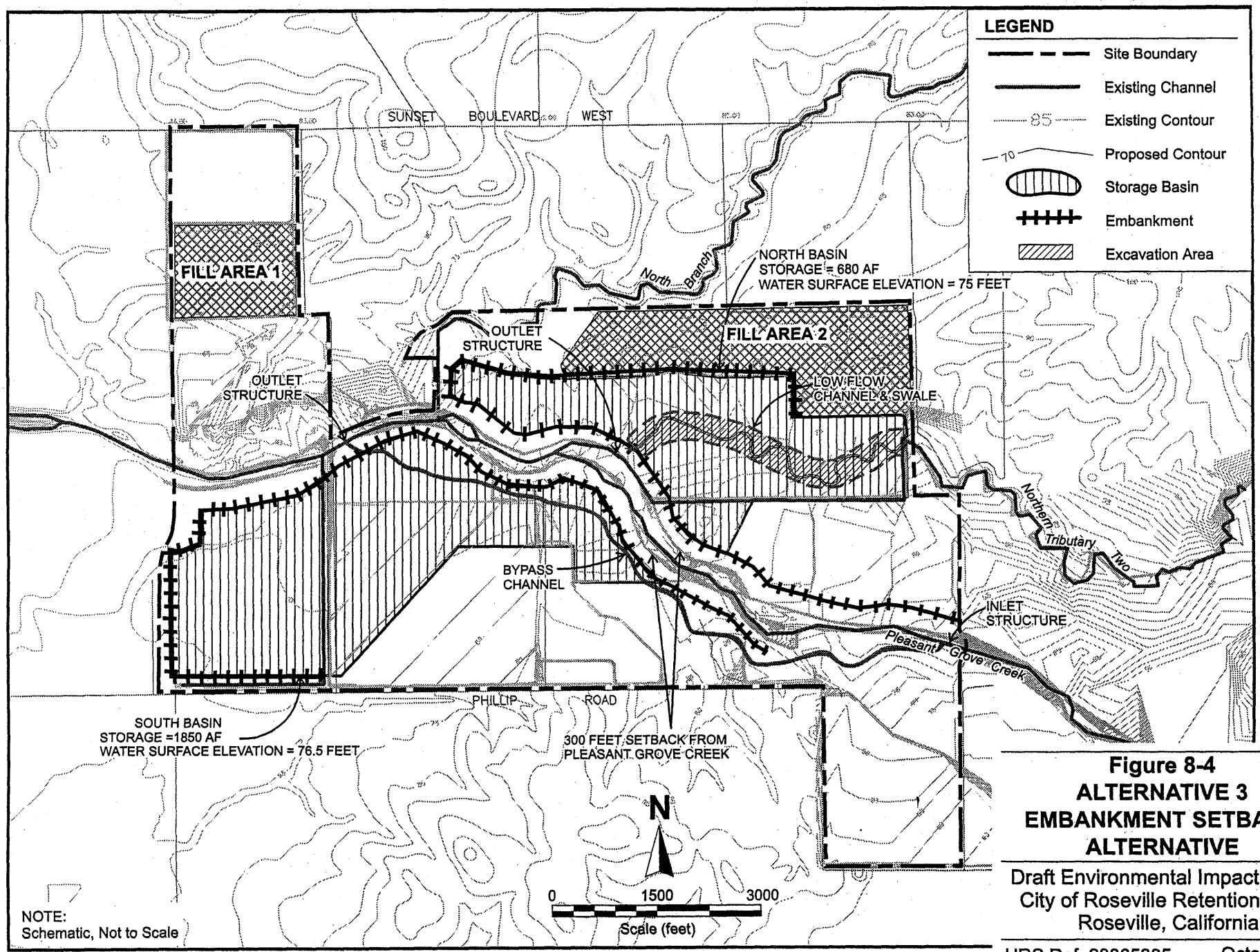
The proposed project would be slightly preferred to Alternative 2 due to the probable more substantial decrease in demand for groundwater.

8.1.2.3 Alternative 3 – Embankment Setback Alternative

Alternative 3 (Figure 8-4) would be a variation of the proposed project, described in Section 8.1.1 above. Similar to the proposed project, Alternative 3 would be comprised of two retention basins: one located north of Pleasant Grove Creek and the second located south of the creek. Each basin would have certain typical features such as embankments, low-flow channels and inlet/outlet structures. The embankment materials would be generated by excavation of low-flow channels and adjacent swale areas in both the South and North basins. (In the proposed project, the embankments on both sides of Pleasant Grove Creek would be set back 100 feet from the ordinary high water mark or 70 feet from the top of the bank, whichever provides the greatest setback from the top of the bank.) Alternative 3 would have the embankments set back 300 feet from the ordinary high water mark of Pleasant Grove Creek. The total length of the embankments would be 28,900 feet, which is slightly shorter than the proposed project.

The total surface area of both the North and South basins would be 415 acres. The location of the outlet structures would be set back from Pleasant Grove Creek approximately 200 feet farther than in the proposed project, although the water would re-enter the creek at approximately the same location as for the proposed project. The South Basin would have an inlet structure located in the bank of Pleasant Grove Creek near the eastern boundary of the site. The inlet structure would regulate the diversion of water from Pleasant Grove Creek into the South Basin. This is different than for the proposed project, where the inlet structure would be located on the bypass channel approximately 2,800 feet from the bank of Pleasant Grove Creek. The embankment locations would provide a greater setback distance from the creek than would the proposed project.

Alternative 3 would require excavation of approximately 1,104,000 cubic yards of earth from the basin areas to obtain a total of 2,530 acre-feet of storage. Excess excavated material would be distributed among the upland portions of the site that are not used for the retention basins. If at a later date the City considers adding additional storage capacity to the retention facility, placement of fill north of the North Basin associated with Alternative 3 could limit future expansion of the North Basin.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California.
Phillip Williams and Associates (2002). Memorandum - Conceptual Design Alternatives for Reason Farms, Reason Farms Retention Basin, City of Roseville. March 20, 2002.

Figure 8-4
ALTERNATIVE 3
EMBANKMENT SETBACK ALTERNATIVE

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City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

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All other components of Alternative 3 would be similar to the proposed project.

Aesthetics

Alternative 3 would visually appear similar to the proposed project; however, it would include two areas to the north of Pleasant Grove where excess excavated material would be distributed. It would also have a setback of 300 feet from Pleasant Grove Creek as opposed to 100 feet. The excess excavated material that would be distributed on the upland areas of the site not used for the retention basin would, in the short-term, appear bare and vacant. It is anticipated that it would take some time for these areas to become vegetated, although in the long term they would integrate well into the surrounding landscape. The larger setback from Pleasant Grove would allow an undisturbed view of the riparian corridor and would be more visually pleasing than the proposed project. Therefore, Alternative 3 is preferred to the proposed project.

Agricultural Resources

Alternative 3 would result in a slightly greater impact to agricultural resources than the proposed project as it would disturb a slightly greater area. Alternative 3 would include areas to the north of Pleasant Grove Creek where excess excavated material would be distributed. This material would not be suitable for topsoil. In terms of the area of land remaining that may be suitable for agricultural use, the proposed project would result in a slightly larger area. Impacts to Williamson Act contract areas would be the same, as both the proposed project and Alternative 3 overlie the areas subject to Williamson Act contract within the site, and the mitigation measure identified for the proposed project would reduce this impact to a less than significant level. The proposed project would be preferred to Alternative 3.

Air Quality

Alternative 3 would result in a greater quantity of air emissions (including fugitive dust) generated than the proposed project, as Alternative 3 would require a longer construction period than the proposed project to conduct the required excavation and distribution of the excess excavated material (1,104,000 cubic yards vs. 761,000 cubic yards, respectively). Mitigation measures identified for the proposed project would reduce the severity of impacts associated with these activities, but not to a less than significant level. The proposed project would be preferred to Alternative 3.

Biological Resources

Alternative 3 would result in greater benefits to biological resources as its setback from the Pleasant Grove Creek is greater than for the proposed project (300 feet versus 100 feet). A larger area of riparian habitat would be allowed to propagate if Alternative 3 were developed, because it would encourage the promotion of additional riparian habitat into the larger setback area. This is the most biologically valuable area of the project area. The additional excavation and disposal areas north of Pleasant Grove Creek currently are rice

fields so impacts to vernal pools or listed branchiopods would be minimal. Other impacts to biological resources would be similar to the proposed project and mitigated to a less than significant level through mitigation measures identified for the proposed project. Alternative 3 would be preferred to the proposed project.

Cultural Resources

Alternative 3 and the proposed project would result in a similar impact to cultural resources as the area of disturbance is similar and both overlie previously recorded sites. The sites were not identified during the field survey; however, due to the existing high level of disturbance, the previously recorded sites or new sites could be uncovered during construction activities. Placement of excess materials on disposal sites would not have high potential to disturb previously unrecorded sites. Mitigation measures identified for the proposed project would reduce impacts to a less than significant level. There would be no preference between Alternative 3 and the proposed project.

Geology and Soils

Alternative 3 would have a slightly greater impact than the proposed project due to the greater area of topographic alteration by excavation in the basin to increase storage volume, and distribution of excess excavated material on northern parcels. The additional grading and contouring required would increase soil erosion during construction. Mitigation measures identified for the proposed project would reduce the severity of impacts associated with these activities to a less than significant level. The proposed project would be preferred to Alternative 3.

Hazards and Hazardous Materials

Alternative 3 and the proposed project would result in similar impacts to hazards and hazardous materials as the area of disturbance is similar and both will require removal of hazardous substances located at farm residences within the site. Therefore, there would be no preference between Alternative 3 and the proposed project.

Hydrology and Water Quality

Alternative 3 is similar to the proposed project except that the embankment would be set back 200 feet farther from Pleasant Grove Creek, and additional excavation would be required within the basins to develop an volume of retention storage equal to the proposed project. Alternative 3 would perform similarly to and provide flood hazard reduction benefits similar to the proposed project. With Alternative 3, peak flows and flood elevations at and upstream and downstream of the site would be similar to the proposed project, as would the reduction in downstream flood volume.

The site would most likely not continue as a rice farm and is apparently not suitable for raising other crops, either dry or irrigated; therefore, groundwater extraction for crop irrigation would likely not occur or be dramatically reduced with Alternative 3.

Alternative 3 would include repair of the existing active incision on Northern Tributary Two and restoration of Northern Tributary Two to a more natural state. Adverse short-term degradation of water quality due to retention basin construction would be similar to that under the proposed project because Best Management Practices (BMPs) would be implemented. Although Alternative 3 would require somewhat more excavation than the proposed projects, the long-term potential for increased erosion and sedimentation along the creek would be similar to the proposed project.

Alternative 3 would provide similar flood hazard reduction benefits and would perform similarly to and have similar beneficial impacts as the proposed project. Although there is no clear preference between Alternative 3 and the proposed project, Alternative 3 may be slightly preferred because the additional embankment setback would increase the amount of floodplain available for conveying floodwaters in excess of the 100-year design event.

Land Use and Planning

To a slightly greater extent, Alternative 3 would meet the objectives and goals the Placer Legacy Open Space and Agricultural Conservation Program. This is because Alternative 3 would encourage growth of new riparian habitat due to the larger setback of the embankment from Pleasant Grove Creek (300 feet versus 100 feet). Alternative 3 would be slightly preferred to the proposed project.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites are known to be within the project area. There would be no preference between the proposed project and Alternative 3, as neither alternative would have an impact.

Noise

Alternative 3 would result in a longer period of noise generated and higher noise levels than the proposed project, as Alternative 3 would require a longer construction period and a greater number of earth moving vehicles to conduct the excavation required and distribution of the excess excavated material. Also, the inlet structure for the South Basin would be constructed near Residence 5. This structure would take longer to construct than the proposed project's bypass inlet at the same location, resulting in a longer-duration noise impact to that residence under Alternative 3. Mitigation measures identified for the proposed project would, if feasible and agreed to by the residents, reduce this impact to a less than significant level. However, because implementation of the mitigation measure is not certain and because

of the longer duration of noise impacts at Residence 5, the proposed project would be preferred to Alternative 3.

Population and Housing

Alternative 3 would result in the same level of impact on population and housing, as the storage capacity of the retention basin is the same. Both projects would indirectly facilitate growth in surrounding areas and would demolish the existing residences within the project area and displace the same number of people. This would be a significant adverse impact of Alternative 3. Therefore, there would be no preference between Alternative 3 and the proposed project.

Public Services

The fire risk and impact on fire protection services for Alternative 3 would be slightly greater than the proposed project due to the larger setback and increase in riparian vegetation available as a fuel source. Alternative 3 would have a similar impact on police services, schools and other public facilities as the area of disturbance and components of the retention basin for the proposed project are similar. The management of Alternative 3 and the proposed project as public open space would both increase public access and may slightly increase illegal trespassing on adjacent areas. The mitigation measure identified for recreation impacts of the proposed project would reduce this impact to a less than significant level. This would increase the demand for police protection services to the Alternative 3 site and the proposed project area. Development of Alternative 3 and the proposed project would also both increase demand for other public facilities such as the City of Roseville Public Works Department for maintenance activities. The proposed project would be slightly preferred to Alternative 3.

Recreation

The development of Alternative 3 would result in the site being managed as public open space. The increased public access and riparian corridor along Pleasant Grove Creek may attract individuals to undertake passive recreational activities within the Alternative 3 site. Wilderness Unlimited currently operates a fishing and hunting club within the project area. The operation of the club is unlikely to continue following the development of the proposed project; however, fishing and hunting may still continue.

The development of the proposed project would result in similar recreational opportunities, as the project area occupies the same boundaries as the Alternative 3 site and would also be managed as public open space. Therefore, there is no preference between Alternative 3 or the proposed project as both alternatives would provide the same level of opportunity and impact on recreational use.

Transportation/Traffic

Alternative 3 would have a slightly greater short-term impact on transportation and traffic than the proposed project. This is because Alternative 3 would have a longer construction period involving a greater number of earth-moving vehicles to conduct the excavation in the basin areas and distribution of excess excavated material north of Pleasant Grove Creek. All other impacts on transportation and traffic would be the same as the proposed project, because both projects have similar components. Therefore, the proposed project would be preferred to Alternative 3.

Utilities and Service Systems

Alternative 3 and the proposed project would have similar impacts on public services. There would be no preference between Alternative 3 and the proposed project.

8.1.2.4 Alternative 4 – Reduced Volume Alternatives

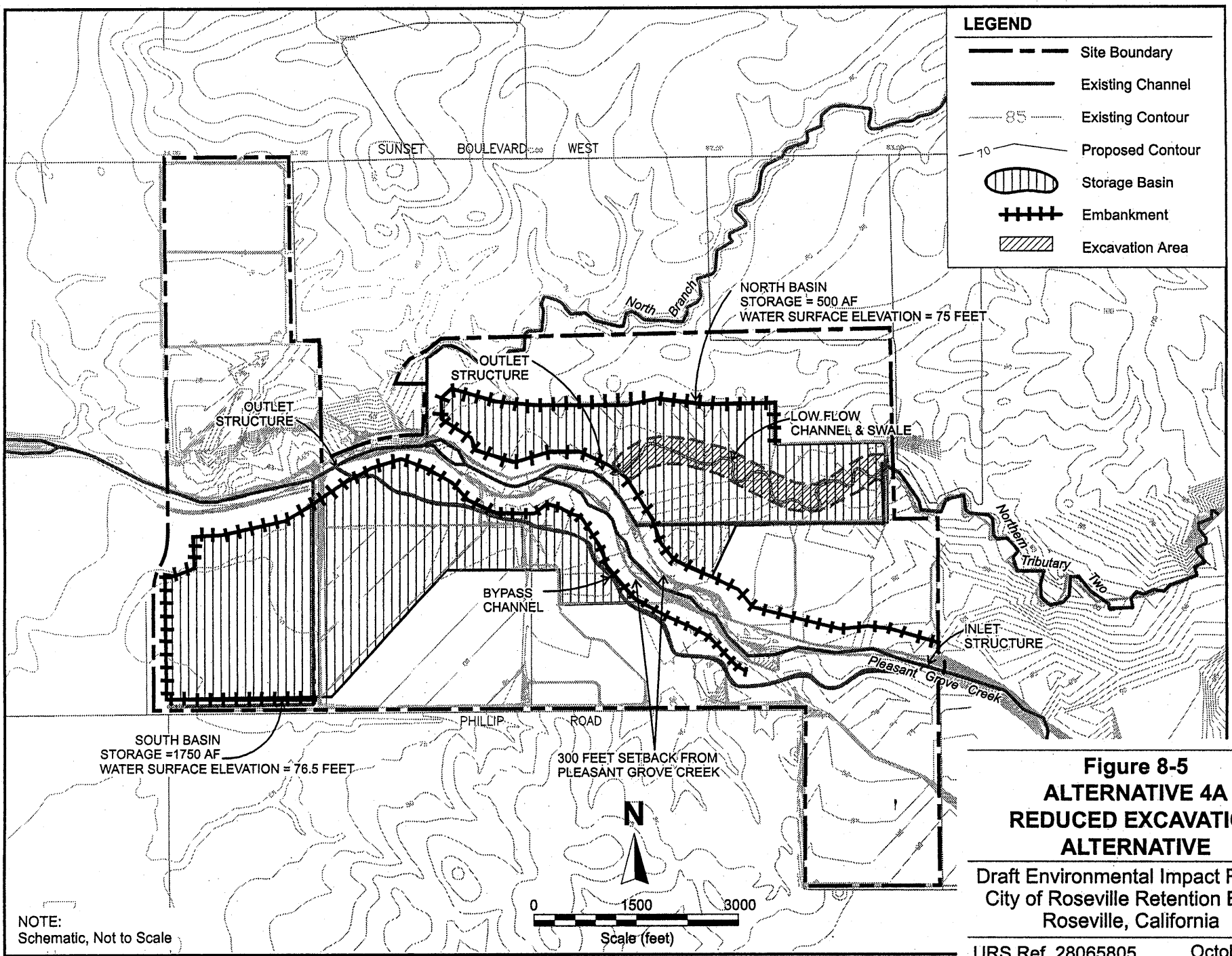
Alternative 4 provides two variations of the proposed project, both of which provide for reduced storage volume within the retention basin.

Alternative 4A – Reduced Excavation Alternative

In the proposed project, the embankments on both sides of Pleasant Grove Creek would be set back 100 feet from the ordinary high water mark or 70 feet from the top of the bank, whichever provides the greatest setback from the top of the bank. The embankment materials would be generated by excavation of low-flow channels and adjacent swale areas in both the South and North basins. In Alternative 4A (Figure 8-5), the embankments both north and south of Pleasant Grove Creek would be located 300 feet back from the ordinary high water mark of the creek, similar to Alternative 3. Unlike Alternative 3, no additional excavation would take place under Alternative 4A. All other components of Alternative 4A would be similar to the proposed project. Alternative 4A would require excavation of 652,000 cubic yards of earth to construct the embankments, for a total retention storage volume of 2,250 acre-feet.

Aesthetics

Alternative 4A would visually appear similar to the proposed project; however, it would have a setback of 300 feet from Pleasant Grove Creek as opposed to 100 feet. The greater setback from Pleasant Grove Creek would allow a better view of the riparian corridor and would be more visually pleasing than the proposed project. Therefore, Alternative 4A would be slightly preferred to the proposed project.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California.
Phillip Williams and Associates (2002). Memorandum - Conceptual Design Alternatives for Reason Farms, Reason Farms Retention Basin, City of Roseville. March 20, 2002.

3/02 v 8580 Alt4a id=300

Figure 8-5
ALTERNATIVE 4A
REDUCED EXCAVATION ALTERNATIVE

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

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Agricultural Resources

Alternative 4A and the proposed project would result in the same level of impact to agricultural resources as the 200-foot-wide area along the creek that would not be used for retention storage under Alternative 4A would not be suitable for agricultural use after construction of the embankments. Both alternatives would therefore result in a similar area of land remaining that may be suitable for agricultural use following development. Impacts to Williamson Act contract areas would be the same, as both Alternative 4A and the proposed project overlie the same areas subject to Williamson Act contract within the site. The mitigation measure identified for the proposed project would reduce impacts related to Williamson Act contracts to a less than significant level. Therefore, there would be no preference between Alternative 4A and the proposed project.

Air Quality

Alternative 4A would result in the generation of a slightly lower quantity of air emissions than the proposed project as Alternative 4A is slightly smaller, with less excavation required than for the proposed project (652,000 cubic yards vs. 761,000 cubic yards, respectively). The construction period and use of earth moving vehicles would be less for Alternative 4A than for the proposed project. Mitigation measures identified for the proposed project would reduce the severity of impacts associated with these activities but not to a less than significant level. Alternative 4A would be preferred to the proposed project.

Biological Resources

Alternative 4A would result in greater benefits to biological resources as the setback from the Pleasant Grove Creek is greater than for the proposed project. The setback from the Pleasant Grove Creek for Alternative 4A is 300 feet, whereas the setback for the proposed project is 100 feet. A larger area of riparian habitat would be retained if Alternative 4A were developed and would encourage the promotion of additional riparian habitat to the larger setback area. This is the most biologically valuable area of the project area. It is assumed that all other impacts would be similar to the proposed project as all other components are the same. These impacts would be mitigated to a less than significant level through mitigation measures identified for the proposed project. Alternative 4A would be preferred to the proposed project.

Cultural Resources

Alternative 4A and the proposed project would result in a similar impact to cultural resources as the area of disturbance is generally similar and both overlie previously recorded sites. The sites were not identified during the field survey; however, due to the existing high level of disturbance at the site, they could be uncovered during construction activities. These impacts would be mitigated to a less than

significant level through mitigation measures identified for the proposed project. There would be no preference between Alternative 4A and the proposed project.

Geology and Soils

Alternative 4A would result in a slightly smaller impact to geology and soils than the proposed project as a slightly smaller quantity of excavation would be required and the embankment would be slightly shorter. The smaller quantity of excavation required would generate less erosion. All other impacts would be the same as the components of the retention basin for both projects are similar. These impacts would be mitigated to a less than significant level through mitigation measures identified for the proposed project. Therefore, Alternative 4A would be preferred to the proposed project.

Hazards and Hazardous Materials

Alternative 4A and the proposed project would result in a similar impact to hazards and hazardous materials, as the area of disturbance in areas where hazardous materials occur is similar, and both would require removal of hazardous substances located at farm residences within the site. Therefore, there would be no preference between Alternative 4A and the proposed project.

Hydrology and Water Quality

Similar to Alternative 3, in Alternative 4A the embankment would be set back 200 feet farther from Pleasant Grove Creek than under the proposed project. However, Alternative 4A would not include excavation of the North and South basins to achieve the same level of storage as the proposed project. Instead, Alternative 4A would have approximately 12 percent less storage volume than the proposed project.

Because Alternative 4A would provide a smaller volume of retention storage, flood hazard reduction benefits would be somewhat less than for the proposed project, although not significantly so.

Similar to the proposed project, Alternative 4A would reduce the extraction of groundwater because rice farming would be discontinued. Also, the existing active incision on Northern Tributary Two would be repaired and Northern Tributary Two would be restored to a more natural state. Therefore, water quality under Alternative 4A would be expected to be similar to the proposed project.

From a hydrologic and water quality perspective, there is no clear preference between this alternative and the proposed project. However, the proposed project would be slightly preferred over Alternative 4A because it would provide a slightly greater volume of retention storage, which would translate into slightly less flood water volume in downstream areas of Sutter County.

Land Use and Planning

Alternative 4A would meet to a greater extent the objectives and goals of the Placer Legacy Open Space and Agricultural Conservation Program Planning Agreement applicable to the project. This is because Alternative 4A would encourage growth of new riparian habitat due to the larger setback (300 feet versus 100 feet). Alternative 4A would be preferred to the proposed project.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites are known to be within the project area. There would be no preference between the proposed project and Alternative 4A, as neither alternative would have an impact.

Noise

Alternative 4A would result in a slightly shorter duration of noise generated than the proposed project, as Alternative 4A would require a slightly shorter construction period due to less required excavation and construction of a slightly shorter embankment. Noise levels generated are likely to be similar for both projects as similar construction equipment would be used. However, similar to Alternative 3, the inlet structure for the South Basin would be constructed near Residence 5. This structure would take longer to construct than the proposed project's bypass inlet at the same location, resulting in a longer-duration noise impact to that residence under Alternative 4A. Mitigation measures identified for the proposed project would, if feasible and agreed to be the residents, reduce this impact to a less than significant level. However, because implementation of the mitigation measure is not certain and because of the longer duration of noise impacts at Residence 5, noise impacts would be potentially significant and unavoidable. The proposed project would be preferred to Alternative 4A.

Population and Housing

Both Alternative 4A and the proposed project have a generally similar area of disturbance, and both projects would demolish the existing residences within the project area and displace the same number of people. Alternative 4A would result in a slightly lower impact on population and housing as the storage capacity of the retention basin would be slightly smaller and would indirectly facilitate slightly less growth in surrounding areas than the proposed project. Indirect facilitation of growth would be a significant unavoidable impact of Alternative 4A. Alternative 4A would be preferred to the proposed project.

Public Services

The fire risk and impact on fire protection services for Alternative 4A would be slightly greater than under the proposed project due to the larger setback and increase in riparian vegetation available as a fuel

source. Alternative 4A would have a similar impact on police services, schools and other public facilities such as the City of Roseville Public Works Department (for maintenance activities), as the area of disturbance and components of the retention basin for the proposed project are similar. The mitigation measure identified for recreation impacts of the proposed project would reduce impacts associated with a potential increase in illegal trespassing to a less than significant level. Therefore, the proposed project would be preferred to Alternative 4A.

Recreation

Similar to the development of Alternative 3 discussed in Section 8.1.2.3, the development of Alternative 4A would result in the site being managed as public open space. The increased public access and riparian corridor along Pleasant Grove Creek may attract individuals to undertake passive recreational activities within the Alternative 4A site. Wilderness Unlimited currently operates a fishing and hunting club within the project area. The operation of the club is unlikely to continue following the development of the proposed project; however, fishing and hunting may still continue.

The development of the proposed project would result in similar recreational opportunities, as the project area occupies the same boundaries as the Alternative 4A site and would also be managed as public open space. Therefore, there would be no preference between Alternative 4A and the proposed project, as both alternatives would provide the same level of opportunity and impact on recreational use.

Transportation/Traffic

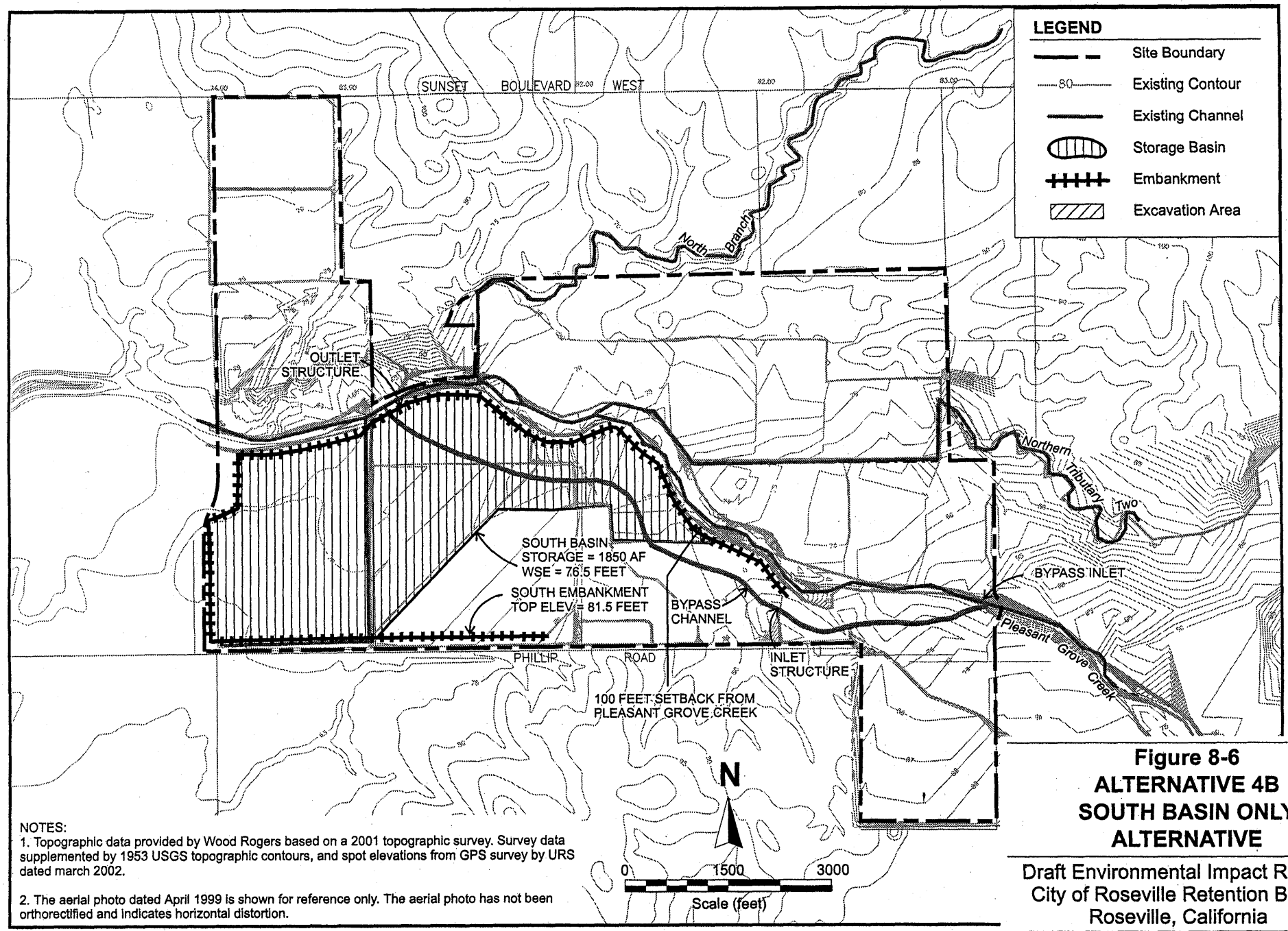
Alternative 4A would have a slightly smaller impact on transportation and traffic than the proposed project. This is because Alternative 4A would have a slightly shorter construction period involving less earth moving vehicles to conduct the slightly smaller quantity of excavation and to construct the slightly shorter embankment. All other impacts on transportation and traffic would be the same as the proposed project as both projects have similar components. Therefore, Alternative 4A would be slightly preferred to the proposed project.

Utilities and Service Systems

Alternative 4A and the proposed project would have similar impacts on public services. There would be no preference between Alternative 4A and the proposed project.

Alternative 4B – South Basin Only Alternative

Alternative 4B would be identical to the proposed project, except that only the retention basin south of Pleasant Grove Creek would be constructed (Figure 8-6). Alternative 4B would require excavation of approximately 500,000 cubic yards to construct the embankments, and would yield a total of 1,850 acre-feet of retention storage.



NOTES:
1. Topographic data provided by Wood Rogers based on a 2001 topographic survey. Survey data supplemented by 1953 USGS topographic contours, and spot elevations from GPS survey by URS dated march 2002.

2. The aerial photo dated April 1999 is shown for reference only. The aerial photo has not been orthorectified and indicates horizontal distortion.

Source: Phillip Williams and Associates (2002).

Figure 8-6
ALTERNATIVE 4B
SOUTH BASIN ONLY
ALTERNATIVE

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

URS PWA

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Aesthetics

Alternative 4B would result in fewer impacts than the proposed project, as Alternative 4B would only disturb the southern portion of the project area below Pleasant Grove Creek. The views of the site and along the Pleasant Grove Creek would remain undisturbed within the northern portion of the project area for Alternative 4B. Therefore, Alternative 4B would be preferred to the proposed project.

Agricultural Resources

Alternative 4B would result in fewer impacts to agricultural resources than the proposed project as Alternative 4B would only disturb the southern portion of the project area below the Pleasant Grove Creek. Alternative 4B could convert up to approximately 20 acres of Farmland of Statewide Importance, approximately 440 acres of Unique Farmland and approximately 440 acres of Farmland of Local Importance. The proposed project could convert up to approximately 75 acres of Prime Farmland, approximately 300 acres of Farmland of Statewide Importance, approximately 900 acres of Unique Farmland and approximately 150 acres of Farmland of Local Importance. This would be a significant unavoidable impact of Alternative 4B; however, it would represent a decrease in the severity of the impact as compared to the proposed project. Both projects would disturb the same areas subject to Williamson Act Contracts. The mitigation measure identified for the proposed project would reduce impacts related to Williamson Act contracts to a less than significant level. However, as Alternative 4B would disturb a much smaller area than the proposed project, a larger area would be available for continued agricultural use. Alternative 4B would be preferred to the proposed project.

Air Quality

Alternative 4B would result in reduced air quality impacts because Alternative 4B would result in construction of a much smaller retention facility (only one basin). It would therefore result in less excavation (500,000 cubic yards vs. 761,000 cubic yards for the proposed project) and require a shorter overall construction period with less overall use of construction equipment required. This would result in a lower quantity of emissions generated. Mitigation measures identified for the proposed project would reduce the severity of impacts but not to a less than significant level. Therefore, Alternative 4B would be preferred to the proposed project.

Biological Resources

Alternative 4B would result in less impact to biological resources as it would disturb a smaller area. Alternative 4B would only disturb the southern portion of the project area below Pleasant Grove Creek. The South Basin would be identical to the proposed project. Biological resources located in the northern portion of the project area above Pleasant Grove Creek would remain undisturbed. Permanent impacts to wetlands and other Waters of the U.S. of 0.56 acre and permanent and temporary impacts to riparian habitat of 0.25 and 0.03 acre, respectively, associated with the North Basin would not occur under

Alternative 4B. Creation of 51.9 acres of new riparian habitat, 2.4 acres of wetlands, and 1.3 acre of other Waters of the U.S. would also not occur. Mitigation measures associated with the proposed project would reduce all impacts to a less than significant level. Alternative 4B would be preferred to the proposed project.

Cultural Resources

Alternative 4B and the proposed project would result in a similar impact to cultural resources as the area of disturbance is the same for the southern portion of the project area and both overlie previously recorded sites. The recorded sites are located south of Pleasant Grove Creek. The sites were not identified during the field survey; however, due to the existing high level of disturbance at the site could be uncovered during construction activities. In addition, sites that have not been recorded could also be potentially buried north of Pleasant Grove Creek. The development of the proposed project could potentially uncover any of these possibly buried sites located north of Pleasant Grove Creek. These impacts would be reduced to a less than significant level through mitigation measures associated with the proposed project. Alternative 4B would be preferred to the proposed project as it has a lower potential to impact cultural resources.

Geology and Soils

Alternative 4B would result in a lower impact to geology and soils than the proposed project as Alternative 4B would not result in the construction of the North Basin. Impacts associated with a greater quantity of excavation and construction of another embankment would not occur. However, the existing active incision at the western end of Northern Tributary Two would not be corrected under this alternative. On balance, therefore, there would be no preference between Alternative 4B and the proposed project.

Hazards and Hazardous Materials

Alternative 4B and the proposed project would result in a similar impact to hazards and hazardous materials as the hazardous materials identified under the proposed project all occur in the South Basin area. Both Alternative 4B and the proposed project would require removal of hazardous substances located at farm residences within this area. There would be no preference between Alternative 4B and the proposed project.

Hydrology and Water Quality

Alternative 4B would be similar to the proposed project, except that the North Basin would be eliminated, thereby reducing the total storage volume provided by the project by roughly 25 percent. The smaller volume of retention storage for Alternative 4B would be associated with a lower level of flood hazard reduction.

Alternative 4B would not include repair of the existing active incision on Northern Tributary Two, and Northern Tributary Two would not be restored to a more natural state. Therefore, with Alternative 4B the water quality of Pleasant Grove Creek would be more degraded, due to increased erosion and sedimentation, than would be expected with the proposed project. Short-term water quality impacts due to construction would be somewhat less with this alternative because of less embankment construction and elimination of one of the two outlet structures.

Alternative 2 presents some loss of operational flexibility, in situations where there might be flooding in Sutter County but not in Placer County in the vicinity of the retention basin. If there is not enough water in the main branch of Pleasant Grove Creek to flow into the bypass channel, no water would be retained under Alternative 4, whereas in the proposed project (and any other alternative that includes a North Basin), the in-line flow characteristics of the North Basin would allow it to capture and retain flow even when the flow is low.

Alternative 4B would provide less flood hazard reduction than the proposed project. The existing active incision would not be repaired and Northern Tributary Two would not be restored, thereby resulting in more degraded water quality than would occur with the proposed project. Furthermore, with continued rice farming on the north parcel, groundwater extraction would not be reduced as much as with the proposed project. For these reasons, the proposed project would be preferred over Alternative 4.

Land Use and Planning

Alternative 4B would convert less land to another use as it would not develop the northern side of Pleasant Grove Creek and agricultural use could continue. It would therefore comply to a greater extent with the objectives, goals and policies of the City of Roseville's General Plan and Bikeway Master Plan, Placer County's General Plan, and the Placer Legacy Open Space and Agricultural Conservation Program Planning Agreement applicable to the project. This is because Alternative 4B. Alternative 4B would be preferred to the proposed project.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites are known to be within the project area. There would be no preference between the proposed project and Alternative 4B, as neither alternative would have an impact.

Noise

Alternative 4B would result in a substantially reduced period of noise exposure and noise levels generated as compared to the proposed project, because there would be no North Basin excavation or construction, and the north access road would not be reconstructed. Since most of the noise-sensitive receptors are associated with construction of the South Basin, Alternative 4B would be beneficial primarily to the

sensitive receptor at Residence 3. No other sensitive receptors are located north of Pleasant Grove Creek. The mitigation measures identified for the proposed project would, if feasible and agreed to by the residents south of Pleasant Grove Creek, reduce noise impacts to a less than significant level. However, because implementation of the mitigation measures is not certain, noise impacts to non-sensitive receptors south of Pleasant Grove Creek would be potentially significant and unavoidable. Alternative 4B would be preferred to the proposed project.

Population and Housing

Alternative 4B and the proposed project have the same area of disturbance south of Pleasant Grove Creek within the project area, and both would demolish the existing residences within the project area and displace the same number of people. Alternative 4B would result in a lower indirect impact on population and housing as the storage capacity of the retention basin would be smaller (due to the construction of only the South Basin) and would indirectly facilitate less growth in surrounding areas than the proposed project. The retention storage requirements of already existing and entitled development in Roseville (1,461.2 acre-feet) and the Pleasant Grove Wastewater Treatment Plant (207 acre-feet) would use most of the storage capacity of the South Basin. If the already entitled Northwest Rocklin proposed Annexation Area would be allocated the remainder of the South Basin capacity, Alternative 4B would not have a significant indirect effect on growth. Therefore, Alternative 4B would be preferred to the proposed project.

Public Services

The fire risk and impact on fire protection services for Alternative 4B would be less than for the proposed project because only the South Basin would be developed. The area north of Pleasant Grove Creek would continue to be farmed for rice; Alternative 4B would result in fewer impacts to fire protection services, as there would be a smaller increase in vegetation available as a fuel source. Alternative 4B would also have slightly fewer impacts on police services, as there would be less area available as public open space which could increase public access and slightly increase illegal trespassing of adjacent areas. The mitigation measure identified for recreation impacts of the proposed project would reduce this impact to a less than significant level. Required maintenance would also be less, as only one basin would require maintenance. Alternative 4B would be preferred to the proposed project.

Recreation

The development of Alternative 4B would result in the site (south of Pleasant Grove Creek) being managed as public open space. The increased public access and riparian corridor along the southern side of the Pleasant Grove Creek may attract individuals to undertake passive recreational activities within the Alternative 4B site. Wilderness Unlimited currently operates a fishing and hunting club within the project area. The operation of the club is unlikely to continue south of Pleasant Grove Creek following development of Alternative 4B, however, it would continue north of Pleasant Grove Creek.

The development of the proposed project would result in similar recreational opportunities but to a greater extent, as development would occur both north and south of the Pleasant Grove Creek and these areas would be managed as public open space. It is unlikely that operation of the fishing and hunting club would continue following development of the proposed project.

Therefore, as the proposed project would provide a greater opportunity for recreational use than Alternative 4B, the proposed project would be preferred to Alternative 4B.

Transportation/Traffic

Alternative 4B would have less impact on transportation and traffic than the proposed project. Alternative 4B would have less impact on all construction traffic routes as there would be a shorter construction period. Roads north of Pleasant Grove Creek, primarily Sunset Boulevard West, would experience less traffic, as no North Basin construction would occur, whereas the proposed project would result in additional traffic on Sunset Boulevard West and the north access road during the construction of the North Basin. Alternative 4B would be preferred to the proposed project.

Utilities and Service Systems

The development of Alternative 4B would result in a reduction of groundwater used for farming, as largely only the northern area would be suitable for rice farming. A small quantity of groundwater would be used during construction for dust control and cleaning of equipment. Solid waste would also be generated during construction; however, this quantity would be adequately met by the Western Regional Sanitary Landfill. Alternative 4B would not generate wastewater, so would not exceed wastewater requirements, impact additional demand for wastewater treatment services, or result in the construction of new wastewater treatment facilities. The development of Alternative 4B would also not require the construction of new stormwater treatment facilities. The proposed project would have similar impacts on public services, except that it would require more water during construction and generate more solid waste. Alternative 4B would be preferred to the proposed project due to the lower demand for groundwater and less solid waste generated.

8.1.2.5 Alternative 5 – Levee Removal Alternative

Alternative 5 proposes an independent design feature for the retention basins that could be implemented within the context of Alternatives 3, 4A, 4B, or the proposed project. Alternative 5 would consist of the removal or breaching of the existing levees along the main branch of Pleasant Grove Creek. Alternative 5 would enhance the ability of Pleasant Grove Creek to overtop its banks and flow into the adjacent floodplain, by eliminating the existing barrier (the levee), and would encourage the natural development of beneficial riparian vegetation. Under Alternative 5, all of the design features, specifications, and mitigation measures of Alternatives 3, 4A, 4B, or the proposed project would remain unchanged.

Aesthetics

Alternative 5 would remove the existing levees along Pleasant Grove Creek and promote development of riparian vegetation within the adjacent floodplain. The removal of the levees would allow Pleasant Grove Creek to be restored to a more natural state and would improve visibility of the riparian zone from adjacent areas. An increase in riparian vegetation due to the availability of flood waters would increase the visual amenity of Pleasant Grove Creek. However, Alternative 5 would result in a greater short-term impact than the proposed project as the removal of the levees would result in unvegetated ground surfaces until the growth of riparian vegetation. These short-term unvegetated ground surfaces would initially appear bare and stark. Alternative 5 would be preferred to the proposed project as the long-term impacts present a greater aesthetic benefit.

Agricultural Resources

Alternative 5 would result in a similar impact to agricultural resources as the proposed project as both would disturb similar areas used for agriculture. It is unlikely (and not the point of this alternative) that the area between the creek and the embankment would be used for agricultural purposes. Impacts to Williamson Act contract areas would be the same as both the proposed project and Alternative 5 overlie the areas subject to Williamson Act contract within the site. The mitigation measure identified for the proposed project would reduce this impact to a less than significant level. There would be no preference between the proposed project and Alternative 5.

Air Quality

Alternative 5 would result in a slightly greater impact than the proposed project as Alternative 5 would require a longer construction period with a greater number of earth moving vehicles and equipment to remove the levees of Pleasant Grove Creek. The longer construction period and greater number of earth moving vehicles and equipment required would result in a greater quantity of emissions generated. Mitigation measures identified for the proposed project would reduce the severity of impacts associated with levee removal, but not to a less than significant level. The proposed project would be preferred to Alternative 5.

Biological Resources

Alternative 5 would result in fewer impacts to biological resources as it would result in generally the same area of disturbance; however, removal of the levees of Pleasant Grove Creek would allow the substantial enhancement of the quality and area of the riparian corridor. Removal of the existing levee would allow water from Pleasant Grove Creek to periodically overtop the banks (during high flow events) and inundate adjacent low-lying areas. Periodic inundation would promote the growth of additional riparian vegetation, thereby increasing the overall width of the riparian corridor. An increased width of riparian corridor would result more wildlife habitat and increased shade for Pleasant Grove Creek, which

would increase the potential for future restoration of fisheries to Pleasant Grove Creek. These changes to the riparian corridor would increase the biological value of the project area. Therefore, Alternative 5 would be preferred to the proposed project.

Cultural Resources

Alternative 5 and the proposed project would result in a similar impact to cultural resources, as the area of disturbance is generally similar and both overlie previously recorded sites. The sites were not identified during the field survey; however, due to the existing high level of disturbance at the site, they could be uncovered during construction activities. There would be no preference between Alternative 5 and the proposed project.

Geology and Soils

Alternative 5 would result in a greater impact to geology and soils than the proposed project as it would require the removal of levees of Pleasant Grove Creek. The removal of the levees could generate more erosion. However, removal of the levees would return the topography to a more natural condition. On balance, there would be no preference between Alternative 5 and the proposed project.

Hazards and Hazardous Materials

Alternative 5 and the proposed project would result in similar impacts to hazards and hazardous materials as the area of disturbance is similar and both projects would require the removal of hazardous substances located at farm residences south of Pleasant Grove Creek. There would be no preference between Alternative 5 and the proposed project.

Hydrology and Water Quality

Alternative 5 is an independent design feature for removal of the existing berm that contains water within the rice fields. In most locations, and under all but extreme storm conditions, flows in Pleasant Grove Creek are contained within the existing channel banks, below the elevation of the existing berms or "levee." Therefore removal of the berm would not be expected to reduce downstream flows or peak flood elevations. Removal of the berm would result in slightly more earthwork, but short-term construction impacts to water quality would be expected to be similar to those with the proposed project. Therefore, there would be no clear preference between the proposed project and Alternative 5 in terms of hydrology and water quality.

Land Use and Planning

Alternative 5 would comply to a slightly greater extent with the objectives, goals and policies of the City of Roseville's General Plan, Placer County's General Plan, and the Placer Legacy Open Space and

Agricultural Conservation Program Planning Agreement applicable to the project. Alternative 5 would comply to the same extent as the proposed project with goals and policies of the City of Roseville's Bikeway Master Plan. This is because Alternative 5 would remove the levees next to Pleasant Grove Creek and allow floodwaters to overtop the banks and flow into the floodplain. The increase in availability of floodwaters would promote the growth of riparian vegetation. The opportunity to enhance riparian vegetation is greater for Alternative 5 than for the proposed project, and the levee area would be returned to a more natural state. Alternative 5 would be preferred to the proposed project.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites are known to be within the project area. There would be no preference between the proposed project and Alternative 5, as neither alternative would have an impact.

Noise

Alternative 5 would result in a greater impact in noise to all receptors, except for Residence 5, as a greater number of earthmoving vehicles and equipment would be required to remove the levees of Pleasant Grove Creek. Noise levels generated would be of longer duration due to the additional vehicles and equipment required and the longer construction period required. The proposed project would be preferred to Alternative 5.

Population and Housing

Both Alternative 5 and the proposed project would have a similar area of disturbance, and both projects would demolish the existing residences within the project area and displace the same number of people. Alternative 5 and the proposed project would result in a similar level of impact on population and housing as the storage capacity of the retention basin would be similar (Alternative 5 does not propose any additional storage capacity) and would indirectly facilitate the same amount of growth in surrounding areas. Therefore, there would be no preference between Alternative 5 and the proposed project.

Public Services

The fire risk and impact on fire protection services for Alternative 5 would be slightly greater than for the proposed project due to the removal of the levees of Pleasant Grove Creek and subsequent increase in riparian vegetation available as a fuel source. Alternative 5 would have a similar impact on police services, schools, and other public facilities as the area of disturbance and all other components of the retention basin for the proposed project are similar. Therefore, the proposed project would be slightly preferred to Alternative 5.

Recreation

Alternative 5 would result in the site being managed as public open space, similar to the proposed project. To the extent that the area next to the creek would take on a more pleasing aspect and attract more wildlife, the increased public access and riparian corridor along Pleasant Grove Creek may attract additional individuals to undertake passive recreational activities within the Alternative 5 site, or promote longer duration recreational activities. Therefore, Alternative 5 would be preferred to the proposed project.

Transportation/Traffic

Alternative 5 would have a slightly greater impact on transportation and traffic than the proposed project. This is because the proposed project would have a slightly longer construction period involving a greater number of earth moving vehicles to remove the levees. The earth moving vehicles would be restricted to the project area. The proposed project would be slightly preferred to Alternative 5.

Utilities and Service Systems

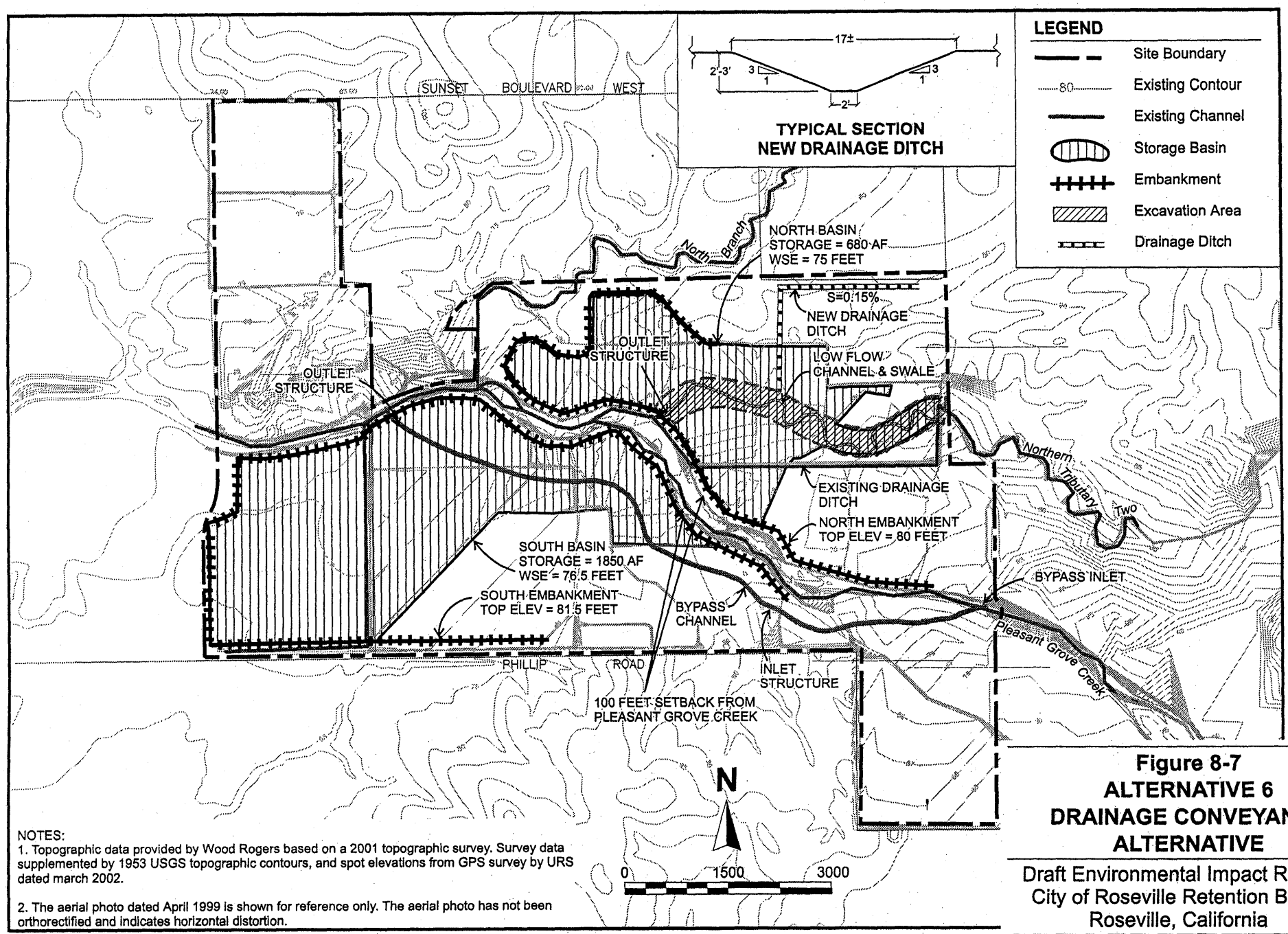
Alternative 5 and the proposed project would have similar impacts on public services. There would be no preference between Alternative 5 and the proposed project.

8.1.2.6 Alternative 6 – Drainage Conveyance Alternative

Alternative 6 proposes an independent design feature that could be implemented within the context of the proposed project or Alternatives 3, 4A, or 5. This alternative would consist of excavating a drainage ditch along the northeastern boundary of the site to improve drainage of the adjacent property (Figure 8-7). The proposed ditch would run west along the northeastern boundary and then south along the proposed access road, terminating at the new swale for the North Basin. This alternative could also be implemented with Alternative 4B, although without construction of the North Basin, the new drainage ditch would terminate farther south at the existing drainage ditch.

The new ditch would collect runoff from an approximately 340-acre drainage area northeast of the site. The ditch was sized to provide conveyance capacity for an estimated 25-year storm event. The new drainage ditch would have an approximately 2-foot bottom width and 17-foot-wide top width, and would be roughly 2.5 feet deep and 4,200 feet long. The drainage ditch would have a relatively flat slope (approximately 0.15 percent). Construction of the drainage ditch would require approximately 3,700 cubic yards of excavation.

Under Alternative 6, all the design features, specifications, and mitigation measures of Alternatives 3, 4A, 4B, 5, and the proposed project would remain unchanged.



NOTES:
1. Topographic data provided by Wood Rogers based on a 2001 topographic survey. Survey data supplemented by 1953 USGS topographic contours, and spot elevations from GPS survey by URS dated march 2002.

2. The aerial photo dated April 1999 is shown for reference only. The aerial photo has not been orthorectified and indicates horizontal distortion.

Source: Phillip Williams and Associates (2002).

Figure 8-7
ALTERNATIVE 6
DRAINAGE CONVEYANCE ALTERNATIVE

Draft Environmental Impact Report
City of Roseville Retention Basin
Roseville, California

URS Ref. 28065805 October 2002

URS PWA

9/23/02 vsa \28065805\F8-7_Alt6_draincon-100ft.cdr

Aesthetics

Alternative 6 would visually appear similar to the proposed project. However, it would also have a drainage ditch along the northeastern boundary of and into the site to improve drainage of the adjacent property. The drainage ditch would not be very noticeable from viewers at ground level, as it would be depressed. There would be no preference between Alternative 6 and the proposed project.

Agricultural Resources

Alternative 6 has similar components to the proposed project but would also have a drainage ditch along the northeastern boundary of and into the site to improve drainage of the adjacent property. Alternative 6 would improve farming of land on adjacent property. Impacts to Williamson Act contract areas would be the same, as both the proposed project and Alternative 6 overlie the areas subject to Williamson Act contract within the site. The mitigation measure identified for the proposed project would reduce this impact to a less than significant level. Alternative 6 is slightly preferred to the proposed project.

Air Quality

Alternative 6 would result in a slightly greater impact than the proposed project as Alternative 6 would require a slightly longer construction period with a greater number of earth moving vehicles and equipment to excavate the drainage ditch. The slightly longer construction period and greater number of earth moving vehicles and equipment required would result in a slightly greater quantity of emissions generated. Mitigation measures identified for the proposed project would reduce the severity of impacts associated with Alternative 6, but not to a less than significant level. The proposed project would be slightly preferred to Alternative 6.

Biological Resources

Alternative 6 would not impact any existing sensitive biological resources, because it would be constructed within cultivated rice fields. Alternative 6 would likely result in the natural development of wetlands and riparian habitat within the ditch equal to approximately 0.96 acre. Alternative 6 would be slightly preferred to the proposed project.

Cultural Resources

No cultural resources have been recorded in the area identified for the drainage ditch. Alternative 6 would disturb slightly more ground surface than the proposed project, and therefore the potential to disturb uncovered previously unknown sites during construction activities would be slightly higher under Alternative 6. Therefore, the proposed project would be slightly preferred to Alternative 6.

Geology and Soils

Alternative 6 would result in a slightly greater impact to geology and soils than the proposed project as it would require additional excavation associated with the drainage ditch. The excavation of the drainage ditch could result in more erosion, and therefore the proposed project is preferred to Alternative 6.

Hazards and Hazardous Materials

Alternative 6 would have no additional impact on hazards and hazardous materials. There would be no preference between Alternative 6 or the proposed project.

Hydrology and Water Quality

Alternative 6 is an independent design feature for excavation of a drainage conveyance along the northeastern boundary of the site to improve drainage of the adjacent property. The proposed ditch would convey runoff from a relatively minor offsite drainage area onto the project site. This additional runoff would flow through the North Basin. The runoff rate and volume from this minor area would be relatively negligible when compared to inflow rate and volume conveyed by Northern Tributary Two. In addition, because most of the drainage ditch excavation would occur outside the limits of the North Basin, this alternative would not increase storage capacity of the retention basin.

This alternative would improve drainage and reduce ponding on the adjacent property. Although the existing drainage condition does not appear to be significantly problematic, the implementation of this alternative, in combination with another alternative that includes the North Basin, would provide some additional flood management benefit to the adjacent property and the northern access road and therefore would be slightly preferred.

Land Use and Planning

Alternative 6 would comply to a greater extent with the objectives, goals and policies of the City of Roseville's General Plan, Placer County's General Plan, and the Placer Legacy Open Space and Agricultural Conservation Program as applicable to the project. Alternative 6 would comply to the same extent as the proposed project with the City of Roseville's Bikeway Master Plan. The addition of drainage ditch in Alternative 6 would increase wetlands and riparian habitat by 0.96 acre and add value to biological resources within the site, assist in flood control on adjacent property and promote agricultural resources by facilitating farming on adjacent property. Therefore, Alternative 6 is preferred to the proposed project.

Mineral Resources

Currently no mineral resources or mineral resource recovery sites are known to be within the project area. There would be no preference between the proposed project and Alternative 6, as neither alternative would have an impact.

Noise

Alternative 6 would not significantly impact any sensitive receptors beyond those identified in the proposed project. There would be no preference between Alternative 6 and the proposed project.

Population and Housing

Alternative 6 would not impact population and housing beyond the impacts identified for the proposed project. Therefore, there would be no preference between Alternative 6 and the proposed project.

Public Services

Alternative 6 would have no impact on fire protection services, police services and schools beyond those identified for the proposed project. There may be a slightly increased impact on other public facilities as the drainage ditch may require additional maintenance by the City of Roseville Public Works Department. Therefore, the proposed project is slightly preferred to Alternative 6.

Recreation

Alternative 6 would have no impact on recreation beyond those identified for the proposed project. Therefore, there would be no preference between Alternative 6 and the proposed project.

Transportation/Traffic

Alternative 6 would have a slightly greater impact on transportation and traffic than the proposed project. This is because the proposed project would have a slightly longer construction period involving a greater number of earth moving vehicles to excavate the drainage ditch. The earth moving vehicles would be restricted to the project area. The proposed project would be slightly preferred to Alternative 6.

Utilities and Service Systems

Alternative 6 would have similar impacts on public impacts to the proposed project, except for groundwater and solid waste. A slightly larger quantity of groundwater would be used during construction for dust control and cleaning of equipment as the drainage ditch would be excavated. In addition, a slightly larger quantity of solid waste would be produced. The proposed project would be slightly preferred to Alternative 6.

8.1.3 Summary of Alternatives Analysis

Table 8-2 summarizes the comparison of the alternatives to the proposed project by environmental issue area, and provides an indication of overall environmental superiority of either a given alternative or the proposed project. The analysis involved a qualitative process which did not result in equal weighting of impacts.

Table 8-2
Summary of Alternatives Analysis

Issue Area	No Project (Alt. 1)	Curry[1] Creek (Alt. 2)	Embankment Setback (Alt. 3)	Reduced Volume Alternatives		Levee[2] Removal (Alt. 5)	Drainage[2] Conveyance (Alt. 6)
				Reduced Excavation (Alt. 4A)	South Basin (Alt. 4B)		
Aesthetics	●	O	●	●	●	●	Ø
Agricultural Resources	●	●	O	Ø	●	Ø	●
Air Quality	O	Ø	O	●	●	O	O
Biological Resources	O	O	●	●	●	●	●
Cultural Resources	●	Ø	Ø	Ø	●	Ø	O
Geology and Soils	O	O	O	●	Ø	Ø	O
Hazards and Hazardous Materials	O	●	●	Ø	Ø	Ø	Ø
Hydrology and Water Quality	O	O	●	O	O	Ø	●
Land Use and Planning	O	Ø	●	●	●	●	●
Mineral Resources	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Noise	●	●	O	O	●	O	Ø
Population and Housing	●	Ø	Ø	●	●	Ø	Ø
Public Services	●	●	O	O	●	O	O
Recreation	O	O	Ø	Ø	O	●	Ø
Transportation/ Traffic	●	O	O	●	●	O	O
Utilities and Service Systems	O	O	Ø	Ø	●	Ø	O
Preference	O	O	O	●	●	●	●

Note:
[1] Assumes similar retention storage volume as for the proposed project.
[2] Assumed to be additive to the proposed project or other alternatives.

Key: O Proposed project preferred over the alternative.
● Alternative preferred over the proposed project.
Ø No clear environmental preference between the alternative and the proposed project.

The alternatives analysis concluded that the No Project Alternative – Alternative 1, would be the environmentally superior alternative. Among the build alternatives, the South Basin Alternative – Alternative 4B – is environmentally superior to the proposed project Alternatives 2, 3, or 4A.

Alternatives 5 and 6 were identified as preferred over the proposed project, even though the "sum" of preferences by category would indicate a preference for the proposed project. This is because for each of these alternatives, which would be additive to the proposed project, the relative degree of difference between them and the proposed project is very minor and is almost entirely related to construction activities. Once completed, the features of Alternatives 5 and 6 would be of added environmental benefit to the proposed project.

8.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The potentially significant environmental impacts that would result from implementation of the proposed project are summarized in Table 2-1 in Chapter 2.0 of this Draft EIR. In some cases, incorporation of mitigation measures would reduce the impacts to levels that are less than significant. Those impacts that cannot be mitigated to a less than significant level would remain as significant unavoidable adverse impacts. They are listed below.

- Direct conversion of prime agricultural land to non-agricultural use.
- Indirect conversion of prime agricultural land to non-agricultural use.
- Inconsistent with the Placer County Air Quality Attainment Plan (AQAP), Placer County General Plan, and Roseville General Plan.
- Northern access road construction equipment would generate short-term sound level increases at 6485 Sunset Boulevard West.
- Onsite retention basin construction equipment would generate short-term sound level increases at noise-sensitive locations.
- Indirect inducement of cumulative growth, including population growth.

These impacts are primarily short-term and/or construction related. These impacts are considered an unavoidable adverse consequence of fulfilling the objectives of the proposed project.

8.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Implementation of the proposed project would result in the short-term commitment of non-renewable and/or slowly renewable energy resources and natural resources including a minor amount of sand and gravel, steel, other metals, and water due to construction activities.

Development of the proposed project site would result in an irreversible environmental effect, as the site is not likely to revert to its original or present condition, although restoration of Northern Tributary Two

of Pleasant Grove Creek to its approximate historic location would reverse a pre-existing environmental change.

8.4 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

CEQA Guidelines require an EIR to evaluate the indirect or secondary effects of a project which may include growth-inducing effects. Section 15126(g) of the CEQA Guidelines states that a project could be considered growth-inducing if it could "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." A development project may have growth-inducing potential if, for example, (1) it extends infrastructure (e.g., water, sewer roads, etc.) to undeveloped areas or increases the capacity of existing infrastructure; (2) promotes similar development to occur on adjacent parcels; (3) increases the area's housing supply; or (4) introduces new employment to an area.

In the absence of other favorable conditions, however, it is unlikely that any one of these components, by itself, could induce significant growth. The magnitude, location and timing of growth are ultimately determined by a mix of economic, political, physical and social factors. Variables including regional economic trends, housing demand, land availability and cost, quality of infrastructure and public services, proximity to employment centers, and regulatory considerations affect the way in which growth occurs.

This section evaluates the extent to which growth could be induced, accelerated, intensified or shifted as a result of development of the City of Roseville Retention Basin. Key growth issues associated with this project are:

- Additional development (residential, commercial, and/or industrial) which could occur on vacant or underutilized lands in the Cross-Canal watershed, which could use retention storage capacity of the proposed project to mitigate for impacts associated with stormwater runoff volumes; and
- Changes in the use of the area's agricultural land, some of which is currently under Williamson Act contracts.

Section 15126(g) of the CEQA Guidelines provides the framework for a discussion of these potential growth-inducing impacts as follows:

- *Would the project foster economic or population growth or the construction of additional housing?*
- *Would the project remove obstacles to population growth?*
- *Would the project tax existing community facilities?*
- *Would the project encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively?*

The proposed project would not directly foster economic or population growth or the construction of additional housing. It could, however, indirectly facilitate substantial population and housing growth as it

includes capacity for retention of stormwater generated from existing, entitled, and potential future growth in the region. This is discussed below.

8.4.1 Current Constraints to Growth

The principal constraints to substantial new growth in south Placer County include (1) impending build-out of planned residential land uses in the City of Roseville; (2) Placer County General Plan land use designations and existing land uses; (3) Williamson Act contracts; and (4) lack of infrastructure. Much of the vacant land in south Placer County is designated Agriculture. Most surrounding parcels have been developed with agricultural uses such as cultivated row crops or rice farming. Scattered parcels are under Williamson Act contracts.

Since no sewer lines extend to these areas, residential development relies on individual septic systems. Domestic and irrigation water is provided by wells. The absence of wastewater collection facilities also acts as a constraint to large-scale development in the study area.

8.4.2 Current Population and Population Growth Trends

A housing boom, created by new industry and commercial job growth over the past two decades, has turned the once rural areas of south Placer County into rapidly expanding communities. While the vast majority of growth has occurred in the cities of Roseville and Rocklin, recent developments north of these cities (Lincoln, Loomis) have also shown significant increases in population and housing expansion. Placer County Office of Economic Development reports that between 1990 and 1997 the Valley region (west and south of Auburn) was the fastest growing region of Placer County, increasing in population by 32.8 percent, compared with 21.4 percent for the County as a whole (SACOG, 1995; SACOG, 1998).

The City of Roseville, located at the southern edge of Placer County, typifies the phenomenal growth in the South Placer region. The onetime railroad town has rapidly expanded in its industrial, commercial and housing sectors since 1980, when the number of residents totaled 24,347. The Sacramento Council of Governments' (SACOG) 1998 population estimates show the City's current household population at 66,110, representing a 172 percent increase over the past 18 years. SACOG projects that between 1995 and 2020 household population growth in Roseville's Regional District Analysis (RDA) will increase by 68 percent.

Rocklin has grown at a rapid pace over the past two decades. In 1980, this former mining town's population totaled 7,298. In the last two decades the City has evolved into a modern bedroom community. Rocklin having grown 300 percent to 29,250 since 1980, SACOG projects that between 1995 and 2020 household population growth in Rocklin's RAD will increase by 140 percent.

Additional unincorporated areas in the south and west regions of Placer County are also experiencing residential growth and are expected to be sources of population increase in the next two decades. The

State Department of Finance shows Placer County's unincorporated population to be 94,421 as of January 1998. SACOG projects that unincorporated communities such as Granite Bay and North Auburn, as well as the City of Auburn, will continue to experience population expansion through 2020, but at slightly lower rates than the South Placer area.

8.4.3 Proposed Project Design Capacity

As shown on Table 3-2 in the Project Description, projects included in the proposed project's design storage capacity are:

- The proposed West Roseville Specific Plan (WRSP), which would be annexed to the City of Roseville, and the remainder of the MOU area (see Figure 3-3 in the Project Description) which would be added to the City's Sphere of Influence. If developed, these areas would increase the projection of Roseville's population in 2020 from about 111,000 to about 137,000, with the City's buildout population (including development after 2020) projected at 147,000 (MuniFinancial, 2001a, 2001b).
- The proposed Roseville Energy Facility, which would have a negligible effect on population (URS, 2001).
- Effluent storage for the City of Roseville's Pleasant Grove Wastewater Treatment Plant (WWTP) to satisfy Mitigation Measure 6-2 of the Roseville Regional Treatment Service Area Masterplan EIR (ESA, 1996) (Phase 1 is currently under construction), which has a planned total capacity of 21 million gallons per day (mgd). If the plant were to provide wastewater treatment to the proposed WRSP area and the remainder of the MOU area, or such other areas that may be developed and served by the Wastewater Treatment Service Area Master Plan, the plant would require additional treatment capacity. The project requirement for the WRSP area and the remainder of the MOU area would be for an additional 4.12 mgd of plant capacity. Since the logical expansion of the plant is in 3 mgd increments, accommodation of the additional 4.12 mgd would require construction of two new treatment units of 3 mgd each (Montgomery Watson Harza, 2001). To build two new units on the WWTP site, the existing onsite effluent storage facility (for storage of tertiary treated effluent during a 24-hour wet weather flow condition) could be displaced. The existing onsite effluent storage facility could also be displaced by other plant operational modifications that may be identified in the future. For maximum operational flexibility, therefore, the storage requirement of 207 acre-feet could be conveyed instead to the proposed retention basin. If new treatment units were to be constructed within the area of the Pleasant Grove WWTP currently reserved for effluent storage, this could indirectly facilitate the additional population identified above.
- Potentially, a portion of the Northwest Rocklin Annexation Area, if the City of Rocklin elects to participate in the proposed project. This project has been approved and is currently proposed for annexation and would result in a population increase in the City of Rocklin of approximately 11,620 residents at buildout. Because this project has already been approved, the proposed project could not be responsible for inducing this population (EIP Associates, 2001).
- Existing and entitled projects in the City of Roseville, which require 1,461.2 acre-feet of retention.

Of these projects, the retention basin could indirectly induce substantial population growth and the construction of additional housing as a result of its accommodation of the proposed WRSP and the potential future development of the remainder of the MOU area. The additional treatment capacity of the Pleasant Grove WWTP could also accommodate this growth, and provides an additional increment of capacity for growth beyond that identified above, because of the requirement that treatment units be constructed in 3 mgd increments. If development does not occur in these areas, then the retention storage capacity could be used to facilitate population growth in other areas, the amount of which is unknown.

8.4.4 Removal of Growth Constraints

The indirect effects of growth associated with the retention basin are those potential impacts resulting from development it facilitates. This development is discussed below.

The proposed WRSP is a 3,100-acre site to the west of Fiddyment Road, near the Pleasant Grove Wastewater Treatment Plant. This area is being considered for future residential, commercial, and industrial development and annexation into the City of Roseville. The WRSP lies almost entirely within a larger land area that is the subject of an MOU between Placer County and the City of Roseville, which the City of Roseville is currently proposing to add into its Sphere of Influence. This MOU identifies the area west of the Roseville city limits as an area for future development, and sets forth a process to be followed for development in it. Included in this process are mitigation requirements relating to Fiscal, Transportation and Circulation, Utilities and Services, Affordable Housing, and Groundwater impacts of any proposed development, e.g., that impacts in these areas will be mitigated to a level that is less than significant unless *both* the County and the City agree that specific overriding considerations render such mitigation measures infeasible. A specific development plan within the MOU area must demonstrate that adequate surface water, sewer capacity, and the necessary distribution and collection systems including transportation exist or can be built to serve the proposed project, and must also demonstrate that the legal, financial, and practical ability to provide a full range of public services exists. The MOU also requires that all physical development, infrastructure development, and public services be constructed, installed, financed or provided at an "urban" standard of development or service.

The MOU would suggest that the MOU area is a logical planning area for growth to occur (it states that development should proceed in an orderly east-to-west progression), and sets forth expectations that most impacts of such development would be mitigated to a less than significant level, unless both parties agree that mitigation is infeasible. "The purpose of the MOU is to promote interagency communication and foster cooperative land use planning between the City and Placer County. The MOU establishes both procedures for review of any development proposal, as well as standards for mitigating development-related impacts. Through these procedures, the MOU also provides the City greater control over development on its western boundary, thereby assuring that any such development result in impacts that are neutral or beneficial to the City." (City of Roseville, 2002)

In June 2001, the City adopted thirteen Guiding Principles, which, together with applicable General Plan policies, are to be applied to any development proposed west of the City to establish minimum standards that a future annexation and associated development would have to meet. The City then prepared a number of technical studies that analyzed the opportunities and constraints of development in this area, especially as they relate to traffic, water, wastewater, solid waste, electricity, and fiscal impacts. Collectively, these technical studies are called the Feasibility Analysis (City of Roseville, 2002). The information and conclusions drawn from the Feasibility Analysis were used by the City Council to provide information for the decision to begin a more detailed evaluation and environmental review of the proposed WRSP and the proposed change in the City's Sphere of Influence. The Feasibility Analysis was the first step in a comprehensive planning process undertaken by the City to determine appropriate land uses on the western border of the current City limits and the potential impacts and benefits of the proposed WRSP. The conclusions of the Feasibility Analysis are presented below:

> **III. Executive Summary Conclusions**
>
> **Staff recommends that Council reaffirm the Guiding Principles which would require the WRSP, or any development west of the City, to provide full funding and maintenance of new improvements and services at no cost to existing residents; ensure that new development not burden/increase costs or diminish supply/reliability of services; that new development provide "public benefit" to the City and residents; and that new development comply with the General Plan service levels and expectations.**
>
> **As previously noted in the action items, Staff will continue to work with the Landowners to meet the Guiding Principles. Compliance with the Guiding Principles will likely require revisions to the proposed plan. To meet the challenges set forth in the Guiding Principles, direct Staff to give particular attention and effort to the mitigation of impacts relating to traffic, fiscal, funding capacity, and water. As the processing of the project further proceeds and should Staff determine that it is not feasible to comply with a Guiding Principle, Staff will return for Council discussion and direction.** (City of Roseville, 2002)

The direct impacts resulting from future projects within the MOU planning area would be analyzed as part of the environmental review process for future development, and mitigation, if required, would be the responsibility of the project applicants. This process has been initiated for the WRSP.

In assessing the proposed retention basin project's indirect cumulative impacts resulting from its facilitation of growth, it would be necessary to first identify the probable environmental impacts of such growth. Given the early stage of the WRSP planning process, and because no development has been proposed in the remainder of the MOU area, it would be speculative to identify the specific scope of such impacts at this time. It would, however, be prudent to turn to the MOU, the Guiding Principles, and the Feasibility Analysis for guidance. Issues important to the City of Roseville and Placer County are addressed in these documents, as described above. The direction of the Guiding Principles and the entire MOU process are focused on reducing environmental impacts to a less than significant level. The

Feasibility Analysis reaffirms this principle, and identifies that potential changes to the proposed WRSP may be necessary to achieve the objectives of the MOU. If the WRSP and other future growth in the MOU planning area cannot achieve these objectives, then it is possible that such developments would not be approved. Again, such future action is unknown at this time.

It is likely, however, that any substantial development facilitated by the proposed project would result in some impacts that would be cumulatively significant. These impacts could include changes in land use from agricultural to other uses, and impacts related to air quality and population growth, as discussed in Sections 3.2, 3.3, and 3.12 of the Initial Study (Appendix A). Impacts to other resources may more easily be mitigated, or are specific targets of the planning process to reduce impacts to less than significant levels, described above. For this reason, conclusions regarding the proposed project's indirect contribution to cumulative impacts (except for potential changes in land use from agricultural to other uses, and impacts to air quality and population growth) are unknown. A process is in place to rigorously reduce impacts to less than significant levels, although it is possible that some cumulatively considerable impacts would occur if such development is approved.

The proposed project would also accommodate additional treatment capacity or operational modifications of the Pleasant Grove WWTP. The retention basin will accommodate up to 207 acre-feet of storage for the plant's tertiary treated effluent during a 24-hour wet weather flow condition. The provision of this storage capacity in the retention basin would allow the current and planned storage areas at the plant site to be displaced by the addition of up to two new wastewater treatment units, or other operational modifications that may be identified in the future. Any such expansion or modification would first need to be designed and approved by the City of Roseville and approved by the South Placer Wastewater Authority, which consists of the City of Roseville, Placer County, and the South Placer Municipal Utilities District. The construction of two new units, or other operational modifications, at the Pleasant Grove Wastewater Treatment Plant would remove one barrier to as-yet unplanned growth, i.e., provision of wastewater treatment to service new development. Such development could include the proposed WRSP and the potential future development of the remainder of the MOU area, plus some additional unidentified development within the wastewater treatment service area (Roseville, Rocklin, Loomis, Sunset Industrial Area, Granite Bay, and Dry Creek/West Placer). If the proposed West Roseville Specific Plan is not approved, the new wastewater treatment capacity could be used to service other development, although if and where this growth would occur is speculative at this time. Because the proposed project could facilitate additional expansion of the Pleasant Grove WWTP, it could indirectly contribute to unavoidable air quality impacts resulting from operation of the WWTP. Odor impacts associated with equipment failure or downtime were identified as a significant and unavoidable impact of the WWTP, and although mitigation was identified to reduce this impact (install odor control systems), this mitigation was not sufficient to reduce the impact to a less than significant level (ESA, 1996).

Finally, the proposed project could facilitate growth in other, unknown areas if development in the MOU planning area were not approved, or it could be constructed so as to accommodate only growth that has

been approved. The potential impacts of such future actions are as speculative as these actions themselves.

8.5 CUMULATIVE IMPACTS

8.5.1 Agricultural Resources

The development of the project could convert up to approximately 75 acres of Prime Farmland, approximately 300 acres of Farmland of Statewide Importance, approximately 900 acres of Unique Farmland, and approximately 150 acres of Farmland of Local Importance to other uses, primarily open space within Placer County. This represents a loss of approximately 0.8 percent of Prime Farmland, approximately 5.6 percent of Farmland of Statewide Importance, approximately 3.8 percent of Unique Farmland, and approximately 0.1 percent of Farmland of Local Importance. Although it may be possible that adjacent landowners with existing farming operations would consider portions of the site to be viable for rice farming or grazing, as an extension of their existing operations, it is likely that some remaining areas would not be suitable for agricultural use. Although the percentage of important farmland in Placer County that could be lost as a result of the project appears fairly small, this is regarded as a potentially significant impact, as important farmland in Placer County is currently declining and under pressure from future developments. Given the retention requirements of the proposed project, no feasible mitigation has been identified to reduce this potential impact to a less than significant level.

8.5.2 Air Quality

Watering of active construction sites, combined with a rigorous set of other mitigation measures, could potentially achieve a 75 percent reduction in air quality emissions resulting from proposed project construction. However, this level of control is not expected to be sufficient to reduce non-attainment emissions (i.e., O_3 and PM_{10} emissions) to less than significant levels. Since the proposed project alone is expected to generate significant levels of emissions during construction, the proposed project would also result in a cumulatively significant short-term increase in these non-attainment pollutants.

8.5.3 Growth

The proposed project could indirectly contribute to cumulative impacts, due to unplanned growth that may be facilitated by the retention basin. Population and housing growth, as well as commercial and industrial growth, could be indirectly facilitated by the proposed project if it accommodates the retention requirements of such currently unplanned projects. While the nature and extent of such unplanned projects are unknown, it is likely that such projects would result in changes in land use from agricultural to other land uses, and other impacts generally associated with development. This is discussed in more detail in Section 8.4, Growth Inducing Impacts of the Proposed Project.

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10.0 DISTRIBUTION LIST

10.1 GOVERNMENT – FEDERAL, STATE AND LOCAL AGENCIES

State Clearinghouse

- California Department of Fish and Game
- Regional Water Quality Control Board
- State Reclamation Board
- California Division of Safety of Dams
- Placer County Air Pollution Control District

Placer County
Sutter County
Sacramento County
City of Rocklin
City of Lincoln
Town of Loomis
Sacramento Area Flood Control District
Placer County Flood Control and Water Conservation District
Office of Board of Trustees of Reclamation District No. 1001
Placer County Transportation Planning Agency
South Placer Municipal Utilities District
Dry Creek Watershed Council
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
National Marine Fisheries Service

10.2 LIBRARIES

Roseville Main Library, 225 Taylor Street, Roseville
Maidu Branch Library, 1530 Maidu Drive, Roseville

10.3 INDIVIDUALS, ADJACENT PROPERTY OWNERS, ORGANIZATIONS AND COMPANIES

Reason Farms
6368 S. Township Rd.
Yuba City, CA 95993

Warnick, Dean & Betty et al.
8351 Palladay Rd.
Elverta, CA 95626

Dean, Keith Euel
3555 Pettigrew Rd.
Roseville, CA 95747

Scheidel, George S.
6201 S. Brewer Rd.
Pleasant Grove, CA 95668

American Towers Inc.
c/o Ash Sander Esq.
One Post Office Square
Boston, MA 02109

Placer Ninety-Four-Twenty PTSP
1205 La Sierra Dr.
Sacramento, CA 95864

Placer 2780
c/o Johas & Associates
PO Box 22938
Sacramento, CA 95822

Dickerson, John R. and Sherry
3825 Pettigrew Rd.
Roseville, CA 95747

Griswold, Lyman D. & Olga T. TRS
772 N. Douty St.
Hanford, CA 93230

Mourier Family Enterprises LP et al.
c/o Mourier, Lois
5460 Straight Rd.
Roseville, CA 95747

Friedman, Kenneth J. et al.
c/o Doane, Joan S.
PO Box 531
Tiburon, CA 94920

Hellyer, Susan W. Trustee
8121 Phillip Road
Pleasant Grove, CA 95668

Wallace, Jack
1116 Fairfield Avenue
Roseville, CA 95678

Tallman, John
1322 Blue Oaks Boulevard #100
Roseville, CA 95698

Gleason, James C. & Gaynell Trustees
6495 Sunset Blvd. West
Roseville, CA 95678

Phillips Road 160 Investors
Manikas, John
511 35th St.
Sacramento, CA 95816

Amoruso, Peter & Jennifer M.
3460 Amoruso Way
Roseville, CA 95747

CHI Partnerships & Marco Dillon Ltd.
234 Polhemus Avenue
Atherton, CA 94027

Watson, Walter C. & Lilliane L. Trustee
2641 Kempton Road
Rio Oso, CA 95674

Allen, John L. & Musto, Sharon L.
10323 Pleasant Grove School Road
Elk Grove, CA 95624

Deala, Edward Rolland & Beatrice M.
1288 Antrim Drive
Roseville, CA 95747

1600 Placer Investors LP
c/o William A. Falik
100 Tunnel Road
Berkeley, CA 94705

Rohan, Susan
2932 Alder Point Drive
Roseville, CA 95661

11.0 REFERENCES

1990 Census data

Ackers, P. and W. R. White, 1973. Sediment Transport: New Approach and Analysis. J. Hyd. Div. ASCE, 99, no. HY11 (1973):2043-60.

AgResource Solutions and North Fork Associates, 2002. Western Placer County Agricultural Land Assessment and Agricultural Land Conservation Evaluation Criteria. Prepared for the Placer County Planning Department. January 3, 2002.

Amarel, Robert, 2002. Owner of Reason Farms. Personal communication with J. Becher and D. Heick of URS Corporation, May 14, 2002.

Bay Area Air Quality Management District (BAAQMD), 1999. *Bay Area Air Quality Management District CEQA Guidelines*, December 1999

Brownlie, W. R, 1981. Prediction of Flow Depth and Sediment Discharge in Open Channels. Report no. KH-R-43A. Pasadena: California Institute of Technology, W.M. Keck Laboratory.

Brussard, P. F., 1999. A guide to Placer County Ecological Zones. Placer County Internet site, accessed January 10, 2002. http://www.placer.ca.gov/planning/legacy/AppendixF_ ecologzones.pdf

Busby, P. J., T. C. Wainwright, G. J. Bryant, L. J. Lierheimer, R. S. Waples, F. W. Waknitz, and I. V. Lagomarsino, 1996. Status review of west coast steelhead from Washington, Oregon, and California. NOAA Tech. Memo. NMFS-NWFSC-27.

California Air Resources Board (CARB), 1994. Sacramento Area Regional Ozone Attainment Plan, adopted 1994.

California Department of Conservation, 1999. Placer County Important Farmland 1998 Map.

California Department of Conservation, 2002a. California Counties Acreage Summaries, 1998. www.consrv.ca.gov. June 2002.

California Department of Conservation, 2002b. California County Acreage Summaries, 1992, 1994, 1996, 1998. www.consrv.ca.gov. May 2002.

California Department of Conservation, 2002c. Important Farmland Categories. www.consrv.ca.gov. June 2002.

California Department of Conservation, 2002d. Placer County Land Conversion Tables, 1996-1998, 1998-2000. www.consrv.ca.gov. May 2002.

California Department of Conservation, 2002e. 1998 to 1998 California Land Conservation Act Status Report. www.consrv.ca.gov. June 2002.

California Department of Fish and Game (CDFG) and Point Reyes Bird Observatory (PRBO), 2001. California Bird Species of Special Concern: Draft List and Solicitation of Input. http://www.prbo.org/BSSC/ draftBSSClist.pdf

California Department of Fish and Game (CDFG), 1994. Staff report regarding mitigation for impacts to Swainson's hawks (*Buteo swainsoni*) in the central valley of California. Sacramento, CA. November 8, 1994.

California Department of Fish and Game (CDFG), 1995. Staff Report on Burrowing Owl Mitigation. Sacramento, CA. October 17, 1995.

California Department of Fish and Game (CDFG), 2002a. Internet web site: http://www.dfg.ca.gov

California Department of Fish and Game (CDFG), 2002b. Rarefind 2, an application allowing access to the California Natural Diversity Data Base. Occurrence records for western Placer County. California Department of Fish and Game, Natural Heritage Division, Sacramento, CA.

California Department of Water Resources, 2000. 1998 Land Use Map.

California Native Plant Society (CNPS), 2001. *Inventory of Rare and Endangered Plants of California*, 6th edition. Rare Plant Scientific Advisory Committee, David P. Tibor, Editor. California Native Plant Society. Sacramento, CA.

California Partners in Flight (CPIF), 2000. Version 1.0. The draft grassland bird conservation plan: a strategy for protecting and managing grassland habitats and associated birds in California (B. Allen, lead author). Point Reyes Bird Observatory, Stinson Beach, CA. http://www.prbo.org/CPIF/consplan.html

CH2M Hill, 1993. Auburn Ravine, Coon, and Pleasant Grove Creeks Flood Mitigation Plan. Prepared for the Placer County Flood Control and Water Conservation District.

Chadwick, A. and J. Morfett, 1998. Hydraulics in Civil and Environmental Engineering. Third edition. E&FN Spon. 600 pp.

City of Roseville, 1992. General Plan. City of Roseville Planning Department, November 18, 1992.

City of Roseville, 2001. Demographic, Development, and Employment Profile 2000-2001. Roseville City Manager's Office, August 2001.

City of Roseville, 2002. City of Roseville Feasibility Analysis Technical Studies for Proposed West Roseville Specific Plan and City/County MOU Area. February.

Civil Solutions, 2000a. Pleasant Grove Watershed Mitigation Fee for the City of Roseville. May 5, 2000.

Civil Solutions 2000b. Amendment to Pleasant Grove Watershed Mitigation Fee for Woodcreek East and Doctors Ranch. May 18, 2000.

Cogswell, H. L., 1977. Water birds of California. University of California Press, Berkeley.

DKS Associates, 2001. Project Study Report (Project Development Support) for Placer Parkway. June 13, 2001.

ECORP Consulting, Inc., 2001a. Special Status Species Assessment for Reason Farms, Placer County, California. July 24, 2001.

ECORP Consulting, Inc., 2001b. Wetland Delineation Map for Reason Farms, Placer County, California. July 24, 2001.

EIP Associates, 2001. Northwest Rocklin Annexation (Sunset Ranchos) Draft Environmental Impact Report SCH No. 99102014. Prepared by EIP Associates, Sacramento, California for the City of Rocklin, California, October 2001.

England, A. S., J. A. Estep, W. R. Holt, 1995. Nest-site selection and reproductive performance of urban-nesting Swainson's hawks in the Central Valley of California. Journal of Raptor Research. 29(3)179-186.

England, A. S., M. J. Bechard, and C. S. Houston, 1997. Swainson's Hawk (*Bueo swainsoni*). *In* The Birds of North America, No. 265 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, D.C.

Environmental Science Associates (ESA), 1996. Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report. SCH No. 93092079. Prepared by ESA, Sacramento, California, for the City of Roseville, California, May 1996.

Environmental Science Associates (ESA), 1999. Pleasant Grove Wastewater Treatment Plant, Final Biological Assessment Report. Prepared for U.S. Army Corps of Engineers. January 29, 1999

Eriksen, C. H. and D. Belk, 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press, Eureka, CA.

Federal Register, 2000. Designated Critical Habitat. Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho and California. SOCFR Part 226 Vol. 65, No. 32, February 16, 2000.

Fisher, Erich, 2001. Telephone conversation between URS biologist Jennifer Pretare and Erich Fisher of Environmental Science Associates (ESA) (Sacramento, CA) regarding Swainson's Hawk occurrences in the vicinity of west Roseville. November 6, 2001.

Foothill Associates, 2001. Riparian Habitat Mapping of Western Placer County. GIS Data prepared for the Placer Legacy Project by Foothill Associates, Roseville, CA.

Glazner, J., 2000. Vernal Pool Mapping. Electronic mapping developed by Jeff Glazner for the Placer Legacy HCP/NCCP. Data provided by Placer County on January 22, 2002.

Hill, J. E., S. R. Roberts, D. M. Brandon, S. C. Scardaci, J. F Williams, and R. G. Mutters, 1997. Rice Production in California. www.agronomy.ucdavis.edu/uccerice.

House Agriculture Committee, 2002. The Facts on U.S. Farm Policy. Summer 2002.

Jameson Jr., E. W. and H. J. Peeters, 1988. California Mammals. University of California Press. Berkeley, California.

Jennings, M. R. and M. P. Hayes, 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game. Sacramento, CA.

Julien, P. Y., 1998. Erosion and Sedimentation. Cambridge University Press. 280 pp.

Knopf, F. L, 1998. Food of mountain plovers in California. Condor 100:382-384.

Knopf, F. L. and J. R. Rupert, 1995. Habits and habitats of mountain plovers in California. Condor 97:743-751.

McEwan, D. and T. A. Jackson, 1996. Steelhead Restoration and Management Plan for California. California Department of Fish and Game.

Miriam Green Associates, 2000. Results of surveys for special-status species in the Fiddyment/Placer 1600 project area. Prepared for Roseville/Fiddyment Land Venture and Placer Investments. July 18, 2000.

Montgomery Watson Harza, 2001. Wastewater Evaluation of Urban Growth Areas. Technical Memorandum prepared for the City of Roseville Feasibility Analysis. December 4, 2001.

Moyle, P. B., R. M. Yoshiyama, J. E. Williams, and E. D. Wikramanayake, 1995. Fish Species of Special Concern in California, Second Edition. California Department of Fish and Game. Sacramento, CA.

Myers, J. M., R. G. Kope, G. J. Bryant, D. Teel, L. J. Lierheimer, T. C. Wainwright, W. S. Grand, F. W. Waknitz, K. Neely, S. T. Lindley, and R. S. Waples, 1998. Status review of chinook salmon from Washington, Idaho, Oregon, and California. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-35, 443 pp.

MuniFinancial, 2001a. 2020 Development Projections for the City of Roseville. Prepared for the City of Roseville. February 7, 2001.

MuniFinancial, 2001b. 2020 Citywide Development Projections with Proposed West Roseville Specific Plan. Prepared for the City of Roseville. November 9, 2001.

Natural Resources Conservation Service, 2002. Farmland Protection Policy Act. U.S. Department of Agriculture. www.nrcs.usda.gov. June 2002.

Placer County, 2002a. 2001 Economic and Demographic Profile. www.placer.ca.gov.

Placer County, 2002b. County of Placer, Assessor Department, 2001-2002 California Land Conservation Act Enrollment Map.

Placer County, 1985. Assessor's Map Block 17, Pages 01, 02, 09, 10, 13, and 15. County of Placer, California.

Placer County, Crawford Multari & Starr, DKS Associates, Psomas and Associates, Jones & Stokes Associates, Recht Hausrath & Associates and J. Laurence Mintier & Associates, 1994. Placer County General Plan. Placer County, August 16, 1994.

Placer County/City of Roseville. N.D. Memorandum of Understanding, Placer County/City of Roseville. Adopted by the Council of the City of Roseville. January 5, 2000.

Placer Legacy (Placer Legacy Open Space and Agricultural Conservation Program), 2001. Natural Community Conservation Planning Agreement, an understanding by and among: the County of Placer; the California Department of Fish and Game; the United States Fish and Wildlife Service; and the National Marine Fisheries Service. September 10, 2001.

Placer Legacy (Placer Legacy Open Space and Agricultural Conservation Program), 2001. Draft Natural Community Conservation Planning Agreement, an understanding by and among: the County of Placer; the California Department of Fish and Game; the United States Fish and Wildlife Service; and the National Marine Fisheries Service. September 10, 2001.

Placer Legacy, 2000. Placer Legacy Open Space and Agricultural Conservation Program. Report by the Placer County Planning Department, accessed via the Internet on March 25, 2002 (http://www.placer.ca.gov/planning/legacy/plegacy-finaldoc3.pdf). Report dated June 20, 2000.

PWA/URS (Philip Williams & Associates and URS Corporation), 2002. Final Conceptual Design Report for the City of Roseville Retention Basin. May 24, 2002.

Rosasco, George, 2002. Placer County Planning Department. Personal communication with J. Becher of URS Corporation, May 14, 2002.

Ruiz, S. 2002. Phone conversation between URS staff David Reel and Serge Ruiz of Wilderness Unlimited. May 2.

Sacramento Area Council of Governments (SACOG), 1995. SACOG's Regional Analysis District (RAD) Housing, Population & Employment Projection Data 1995-2020.

Sacramento Area Council of Governments (SACOG), 1998. Population and Housing Estimates.

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2001. Sacramento Metropolitan Air Quality Management District Draft CEQA Guidelines, September 2001

Smallwood, K. S., 1995, Scaling Swainson's hawk population densities for assessing habitat use across an agricultural landscape. Journal of Raptor Research. 29(3):172-178.

Stebbins, R. C., 1972. California Amphibians and Reptiles. University of California Press, Berkeley, CA 152 pp.

Stebbins, R. C., 1985. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin Company. Boston, Massachusetts.

Thomas Reid Associates, 1999. Georeferenced JPG color aerial photos of western Placer County. Developed for Placer County Legacy HCP/NCCP. Electronic data provided by Placer County January 20, 2001.

U.S. Army Corps of Engineers, 1987. Wetland Delineation Manual. Environmental Laboratory.

U.S. Department of Agriculture, 1999a. 1997 Census of Agriculture, Volume 1, Geographic Area Series. March 1999.

U.S. Department of Agriculture, 1999b. 1997 Census of Agriculture, Volume 2, Subject Series. May 1999.

U.S. Environmental Protection Agency (U.S. EPA), 1971. Noise from Construction Equipment and Operations, Building Equipment and Home Appliances. (Prepared under contract by Bolt, et al., Bolt, Beranek & Newman, Boston, Massachusetts.) Washington, D.C.

U.S. Environmental Protection Agency (U.S. EPA), 1972. Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety. Report 550/9-74-004, March.

U.S. Environmental Protection Agency (U.S. EPA), 1995 and subsequent revisions and additions. *Compilation of Air Pollutant Emission Factors, AP-42*, Volume 1, 5th Edition.

URS Corporation, 2001. Roseville Energy Facility Application for Certification. Submitted to the California Energy Commission by the Roseville Energy Facility, L.L.C. August 2001.

URS Corporation, 2002. Initial Study for the City of Roseville Retention Basin Project. Prepared for the City of Roseville, in Association with PWA. July 22, 2002.

URS/PWA (URS Corporation and Philip Williams & Associates, Ltd.), 2002. Screening Level Evaluation of Alternative Site Locations for the City of Roseville Retention Basin. March 8, 2002.

Williams, D. F., 1986. Mammalian Species of Special Concern in California. California Department of Fish and Game. Sacramento, CA.

Wood-Rodgers Inc. and Wade Associates, 2001. Summary Report for Proposed Retention Basin at Reason Farms Placer County, California.

Wood-Rodgers Inc., 2001a. Master Drainage Study for Fiddyment/Westpark Properties. November.

Wood-Rodgers Inc., 2001b. Summary Retention Volume Analysis for Memorandum of Understanding, Transition Area. November 2001.

Zarn, M., 1974. Burrowing owl (*Speotyto cunicularia hypugaea*). Habitat management series for unique or endangered species. U.S. Department of the Interior, Bureau of Land Management Technical Note T-N-250.

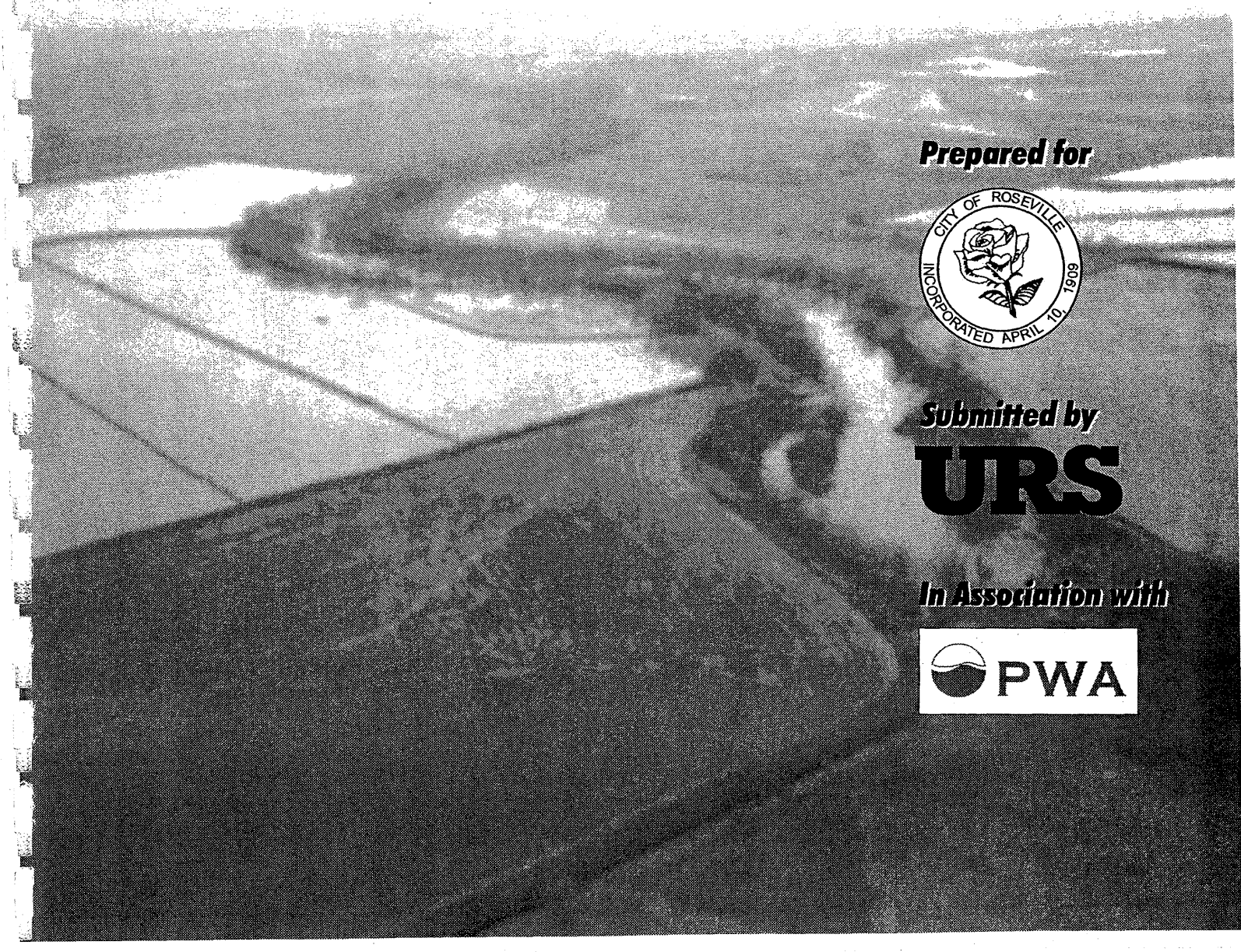
APPENDIX A

APPENDIX A

NOTICE OF PREPARATION
AND
INITIAL STUDY

Initial Study
for the
City of Roseville Retention Basin Project
Roseville, California

July 22, 2002



Prepared for

CITY OF ROSEVILLE
INCORPORATED APRIL 10, 1909

Submitted by

URS

In Association with

PWA

CITY OF
ROSEVILLE
TRADITION • PRIDE • PROGRESS

Community Development
311 Vernon Street
Roseville, California 95678-2649

NOTICE OF PREPARATION AND SCOPING MEETING

TO: State Clearinghouse
Responsible Agencies, Trustee Agencies and Interested Parties
(refer to Distribution List)

DATE: July 22, 2002

SUBJECT: **Notice of Preparation of a Draft Focused Environmental Impact Report and Scoping Meeting**

PROJECT TITLE: **City of Roseville Retention Basin Project**

LEAD AGENCY: City of Roseville
Department of Public Works
311 Vernon Street
Roseville, CA 95678

CONTACT: Mark Morse, Environmental Coordinator (916) 774-5334

The City of Roseville will be the Lead Agency and will prepare a Focused Environmental Impact Report for the project identified above. We request review and comments from your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your comments can be submitted in writing and/or you can attend the **Scoping Meeting to be held at 6:30 P.M. August 8, 2002 at the City of Roseville Corporation Yard** located at 2005 HillTop Circle, Roseville. Your agency will be able to use the Focused EIR prepared by our agency when considering your permit(s) or other approval for the project. The comments received during the Notice of Preparation comment period will be utilized to define the scope and content of the Draft Focused EIR.

The City of Roseville proposes to construct a retention basin to help reduce potential downstream flooding that could be caused by the entitled projects and future projects within the City and in certain portions of south Placer County. The development of a retention basin will help reduce the risk of flood hazards to downstream communities. The project area is located in southwestern Placer County approximately 2.4 miles west of the city limits of Roseville. The project area is an irregularly shaped, approximately 1,500 acre site used for primarily rice farming. The northernmost portion of the project area abuts Sunset Boulevard West, and the southernmost boundary of the project area lies along Phillip Road. Brewer Road and Fiddyment Road are the closest regularly-used public roads to the western and eastern boundaries of the project area.

A description of the proposed project and its probable environmental effects are contained in the attached Initial Study. This Initial Study identifies potentially significant impacts to Agricultural Resources, Construction Air Quality, Construction Noise, and potentially significant indirect impacts on Growth, including Population Growth.

Due to time limits mandated by State law, your response should be submitted to the City of Roseville Engineering Department **no later than August 21, 2002.** Please send your response to **Mark Morse, Environmental Coordinator, Community Development Department** at the address indicated above. We request the name of a contact person for your agency.

MARK MORSE
Environmental Coordinator

INITIAL STUDY

CITY OF ROSEVILLE RETENTION BASIN PROJECT

Prepared for the City of Roseville

By URS Corporation
In Association with PWA

July 22, 2002

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A2 City of Roseville General Plan
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C Cultural Resources Supporting Documentation
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C2 Archaeological Reconnaissance of the 1,329-Acre Reason Farms
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MITIGATION MEASURES

Mitigation Measure A-1 36
Preserve the southwestern portion of the project area under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves for a period of twenty years.

Mitigation Measure AQ-1 46
Develop and implement a Construction Emission/Dust Control Plan in accordance with the requirements of the Placer County Air Pollution Control District.

Mitigation Measure B-1 53
Mitigate direct and indirect impacts to listed vernal pool branchiopods according to USFWS (1996) Programmatic Formal Endangered Species Act Consultation for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans. This could include purchase of mitigation credits from a USFWS-approved mitigation bank or via equivalent onsite creation and/or preservation of vernal pool habitat.

Mitigation Measure B-2 54
Conduct pre-construction surveys for all raptor nests including white-tailed kite and Swainson's hawk. Surveys will be conducted within ½ mile of the project area, and no new disturbances, such as heavy equipment operation, will be initiated within ½ mile of an active nest between March 1 and September 15. If an active nest is located and construction occurs within ½ mile of it, the nest will be monitored by a qualified biologist to ensure that abandonment does not occur.

Mitigation Measure B-3 56
Seed temporarily disturbed or exposed riparian areas at the conclusion of construction with native plant species.

Mitigation Measure B-4 59
Replace oak trees in accordance with City of Roseville Tree Preservation Ordinance. To the extent possible, replacement plantings will be located on the project site, in the vicinity of the existing riparian corridor.

Mitigation Measure C-1 65
Conduct a pre-construction induction with key construction personnel to promote awareness of archaeological resource significance, visual identification, and discovery notification procedures.

Mitigation Measure C-2 65
Retain a qualified professional archaeologist to observe all project-related ground-disturbing activities within 25 meters (82 feet) of the banks of Pleasant Grove Creek.

Mitigation Measure C-3 65
Immediately stop ground-disturbing activities in the vicinity and consult a qualified professional archaeologist if buried cultural deposits are discovered during construction. If the discovery includes human remains, the Placer County Coroner and Native American Heritage Commission must also be contacted.

Mitigation Measure C-4 65
In the event resources are discovered develop and implement mitigation measures and management recommendations in consultation with the State Historic Preservation Office, and, if the site is of aboriginal association, the National American Heritage Commission and local Native American Community.

Mitigation Measure C-5 67
Conduct a pre-construction induction with key construction personnel to promote awareness of paleontological resource significance, visual identification, and discovery notification procedures.

Mitigation Measure C-6 67
Retain a qualified professional paleontologist to observe and monitor all project-related ground-disturbing activities.

Mitigation Measure C-7 67
Immediately stop ground-disturbing activities in the event that significant paleontological resources are discovered, then develop and implement mitigation salvage measures in accordance with professional paleontological standards (i.e., Society of Vertebrate Paleontology standards).

Mitigation Measure G-1 73
Comply with the conclusions and recommendations of a site-specific geotechnical investigation.

Mitigation Measure N-1 111
Consult with residents at 8100 Phillip Road and 5730 Phillip Road, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or temporarily boarding up windows facing construction.

Mitigation Measure R-1 125
Prepare guidelines to limit disturbance to the riparian zone of Pleasant Grove Creek or other sensitive habitat, and prepare a public educational program, including informative signage to explain the ecological importance of the unique habitats on the site.

CITY OF ROSEVILLE RETENTION BASIN PROJECT
INITIAL STUDY

1.0 INTRODUCTION

The City of Roseville proposes to construct a retention basin to help reduce potential downstream flooding that could be caused by the entitled projects and future projects within the City and in certain portions of south Placer County. The development of a retention basin will help reduce the risk of flood hazards to downstream communities.

In March 1991, the Roseville City Council adopted the Pleasant Grove Drainage Fee. The fee was based on the Pleasant Grove Watershed Mitigation Fee study (Civil Solutions, 2000a) and a hypothetical 8-day, 100-year flood event. The fee provides funds to construct a stormwater retention basin to store additional runoff created by land development within the Pleasant Grove watershed in Roseville. The retention basin would comply with CEQA mitigation requirements related to stormwater retention for various City and regional projects, and it would address Sutter County's concerns regarding flooding partially caused by development within the Pleasant Grove Watershed. The City has collected about $10 million in fees through the first half of 2002, and is now moving forward with using these fees to study construction of a retention basin (the proposed project) and associated land purchases.

This document is an Initial Study, prepared in accordance with Section 15063 of the California Environmental Quality Act (CEQA), Statutes and Guidelines (1998). The Initial Study was prepared to determine and document whether the proposed project would have a significant or potentially significant effect on the environment. The evaluation of potential effects follows the format suggested in CEQA Guidelines with supporting analysis and references provided in response to each question. Three technical studies and one addendum were performed in support of the Initial Study and are included as appendices to the Initial Study.

Lead Agency

City of Roseville, Department of Public Works

Contact Person

Mr. Mark Morse
Environmental Coordinator
City of Roseville, Community Development Department
311 Vernon Street
Roseville, CA 95678

CEQA Process

This Initial Study identifies potentially significant impacts to Agricultural Resources, Construction Air Quality, Construction Noise, and potentially significant indirect impacts on Growth, including Population Growth. This Initial Study is being circulated with the Notice of Preparation for a focused EIR, which will further analyze these topics. The public comment period in response to the Notice of Preparation begins July 23, 2002 and ends August 21, 2002. The Notice of Preparation was mailed to the Distribution List identified in Chapter 6 of this Initial Study. This list includes landowners on and adjacent to the proposed project site. All comments received during the comment period will be considered during preparation of the EIR.

2.0 PROJECT DESCRIPTION

The City of Roseville (the "City") proposes to construct a retention basin west of Roseville in unincorporated Placer County (the "County"), California. This chapter provides descriptive information regarding the following:

- project location;
- project background and history;
- study area characteristics;
- project objectives;
- a description of the proposed project including proposed environmental protection measures;
- opportunities for future uses;
- existing facilities;
- estimated costs; and
- required approvals and permits.

2.1 PROJECT LOCATION

The project area is located in southwestern Placer County approximately 2.4 miles west of the city limits of Roseville. The project area is an irregularly shaped, approximately 1,500-acre rectangular site, with northwestern and southeastern fingers jutting out from the rectangle. The northernmost portion of the project area abuts Sunset Boulevard West, and the southernmost boundary of the project area lies along Phillip Road. Brewer Road and Fiddyment Road are the closest regularly-used public roads to the western and eastern boundaries of the project area. Pettigrew Road bisects the western portion of the project area (Figure 2-1).

The project area is located within Sections 9, 10, 14, 15, and 16 of Township 11 North, Range 5 East as depicted on the Pleasant Grove Quadrangles of the U.S. Geological Survey topographic maps. The project site includes twelve existing Assessor Parcel Numbers as depicted on Figure 2-2. The acreages of each of the parcels are presented in Table 2-1.

Conceptual design of the proposed project is described in detail in the Reason Farms Retention Basin Final Conceptual Design Report (PWA/URS), which is hereby incorporated by reference into this Initial Study. The Final Conceptual Design Report can be reviewed at the City of Roseville's Public Works Department.

Table 2-1
Acreages of Parcels Within the Project Area

Parcel Number	Acreage
017-010-018	67
017-010-021	67
017-010-023	223
017-020-009	160
017-020-011	160
017-090-017	184
017-090-028	89.9[a]
017-010-033	80.1[b]
017-100-001	1.3
017-100-002	236
017-100-004	237.3
017-100-041	approximately 0.12[c]

Source: County of Placer, 1985.

Notes:

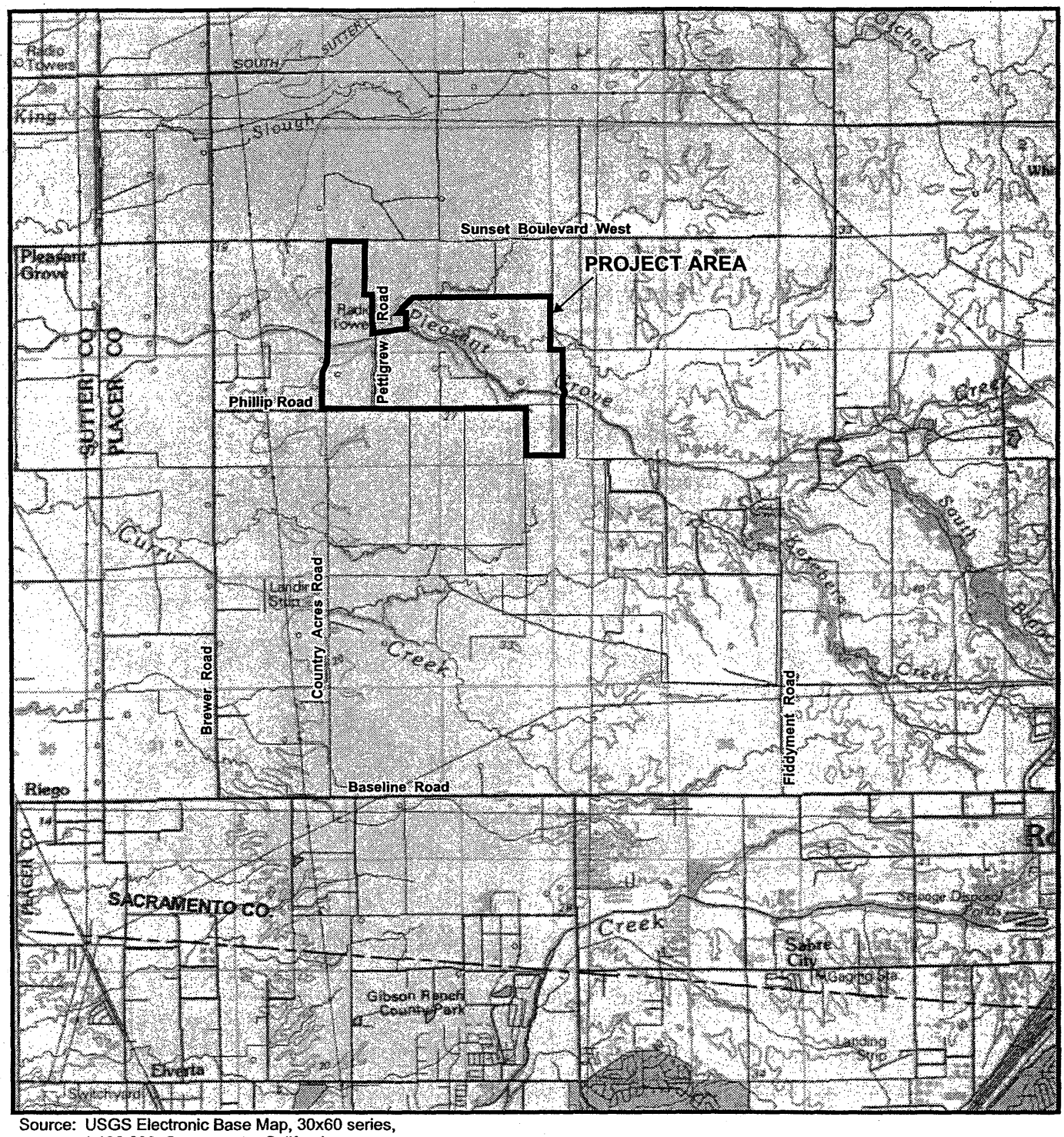
[a] Portion of 338.8-acre parcel to be purchased adjacent to Reason Farms.
[b] Portion of 80.1-acre parcel to be purchased adjacent to Reason Farms.
[c] Portion of 80.0-acre parcel adjacent to Reason Farms where easement would be required.

2.2 PROJECT BACKGROUND AND HISTORY

The City of Roseville and Placer County are rapidly expanding regions. In 2000, the City had a population of 79,921, which was an increase of approximately 79 percent over the 1990 population. The 2010 projected population for the City is 109,160, which is an increase of approximately 37 percent over the 2000 population (City of Roseville, 2001). During 2000, the County had a population of 248,399, which was an increase of approximately 44 percent over the 1990 population. The 2010 projected population for the County is 339,300, which is an increase of approximately 37 percent over the 2000 population (Placer County, 2002).

The projected population increases are likely to be the result of the development of entitled projects and future projects within the City of Roseville and elsewhere within the County and its incorporated cities. The development of entitled and future projects may generate additional stormwater/floodwaters that would require mitigation.

In the past several years, Sutter County has exerted pressure on the City of Roseville, the town of Rocklin, and Placer County to provide solutions to mitigate increased runoff volume associated with development, adversely affecting Sutter County flooding resulting from large-scale storm events.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California

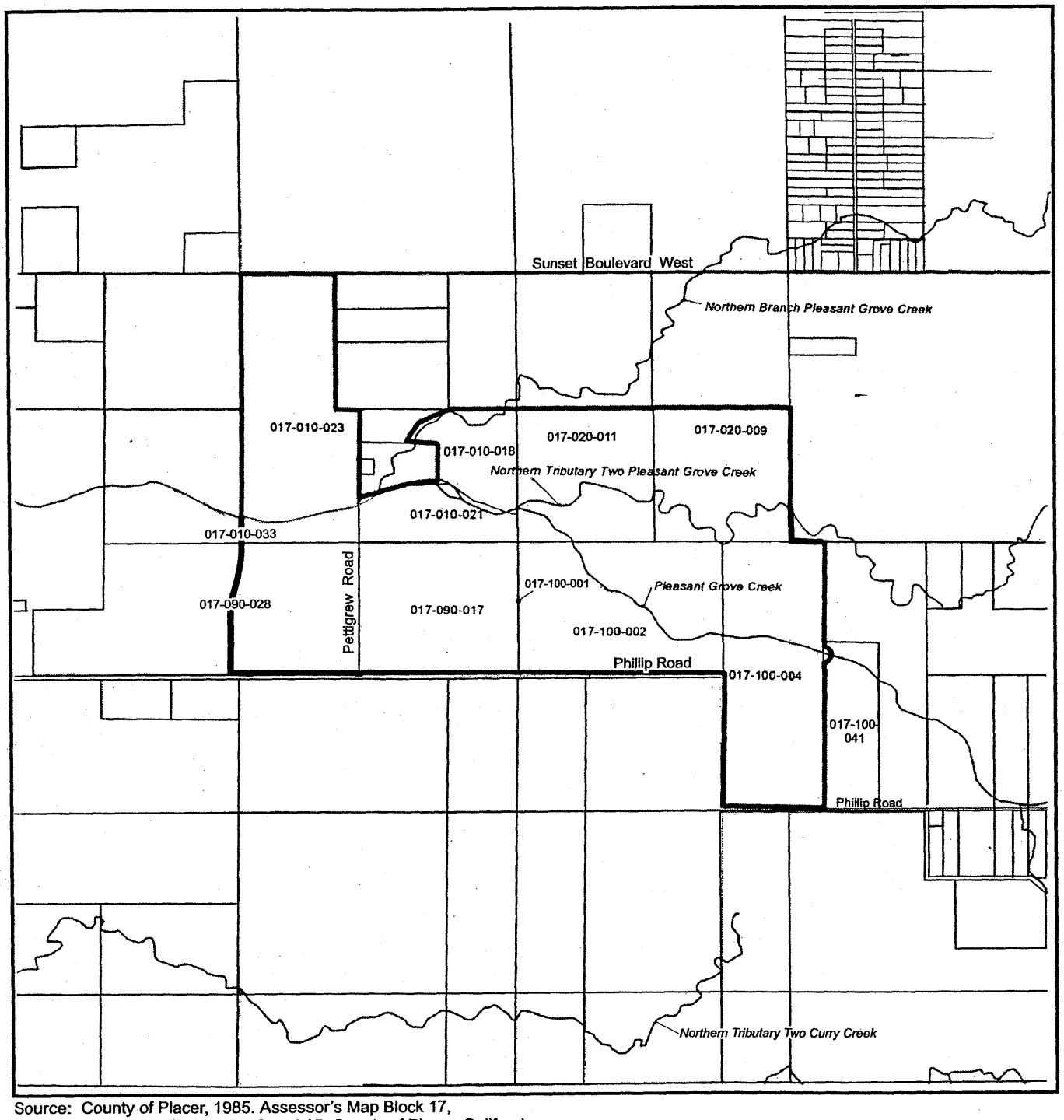
Figure 2-1
LOCATION MAP

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

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Source: County of Placer, 1985. Assessor's Map Block 17, Pages 01, 02, 09, 10, 13 and 15. County of Placer, California

LEGEND

- Site Boundary
- 17-090-028 Parcel Number
- Water Course
- Parcel Boundary

N

1000 0 1000 2000

Scale (feet)

Figure 2-2
PARCEL BOUNDARIES

Initial Study
City of Roseville Retention Basin
Roseville, California

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URS PWA

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Several studies have contributed to defining the parameters associated with retention storage volumes associated with entitled and future projects. Currently, the City has identified 2,530 acre-feet of retention storage, as shown on Table 2-2.

Table 2-2
Summary of Retention Volume Estimates

Area Description	Retention Volume Estimate (acre-feet)
WSRP and MOU Area[a]	661.6[b]
Roseville Energy Facility	20[b]
Pleasant Grove WWTP	207[c]
Northwest Rocklin Annexation Area	180[d]
Subtotal	**1,068.6**
Existing and Entitled Development[e]	1,461.2
Total	**2,529.8**

Notes:

[a] The proposed West Roseville Specific Plan Area (WRSP) and the "Transition Area" west of Roseville city limits, the subject of a Memorandum of Understanding (MOU) between the City of Roseville and Placer County regarding its future development.

[b] Reference: Wood-Rodgers (2001b).

[c] 24-hour Wet Weather Flow (peak factor of 2.5) effluent storage for potential plant capacity of 27 mgd.

[d] Storage requirement per Northwest Rocklin Annexation Area, Draft EIR (EIP, 2001).

[e] Existing and entitled development within the City of Roseville as presented by Civil Solutions (2000b).

The 2,530 acre-foot storage volume presented in Table 2-2 would not mitigate for increased runoff volume due to full build-out of the entire watershed. Rather, it would mitigate only for existing and entitled projects within the City of Roseville and those other areas included in the table, some of which are outside of the city limits. The land use parameters used to calculate the increase in runoff volume are consistent with conditions that would exist if existing and entitled development within the City limits and other development areas, as indicated in Table 2-2, are constructed. This would include the proposed West Roseville Specific Plan (WRSP) Area, and the entire transition area covered by a Memorandum of Understanding (MOU) between the City and the County of Placer (Figure 2-3). The MOU is an agreement signed in 1997 between the City and County that addresses development of certain land west of the city limits.

The 2,530 acre-foot requirement would also provide retention for approximately 180 acre-feet of stormwater runoff from the North West Rocklin Annexation Area, also known as Sunset Ranchos. This volume of stormwater runoff, if not retained, could contribute to cumulative runoff volumes in the Pleasant Grove Creek and Orchard Grove Creek Watersheds (EIP, 2001).

Finally, the 2,530 acre-foot requirement could accommodate storage for tertiary treated effluent from the Pleasant Grove Wastewater Treatment Plant, if the plant were to be expanded at its present location in the future (to include up to two additional 3.0 mgd treatment units for a total plant capacity of 27 mgd)[1], or if modified treatment processes require additional space at the plant site. Such expansion or modification could require use of, and thus displace, planned onsite treated effluent storage areas. A plant expansion would be necessary to accommodate future development in the Transition Area covered by the City/County MOU presented in the "Feasibility Analysis Report for the Proposed West Roseville Specific Plan and City/County MOU Area" by the City of Roseville, February 2002 (Montgomery Watson Harza, 2001). With the proposed project, the wet weather effluent storage needs of the treatment plant would be met, as required by the Roseville Regional Wastewater Treatment Service Area Master Plan EIR (ESA, 1996).

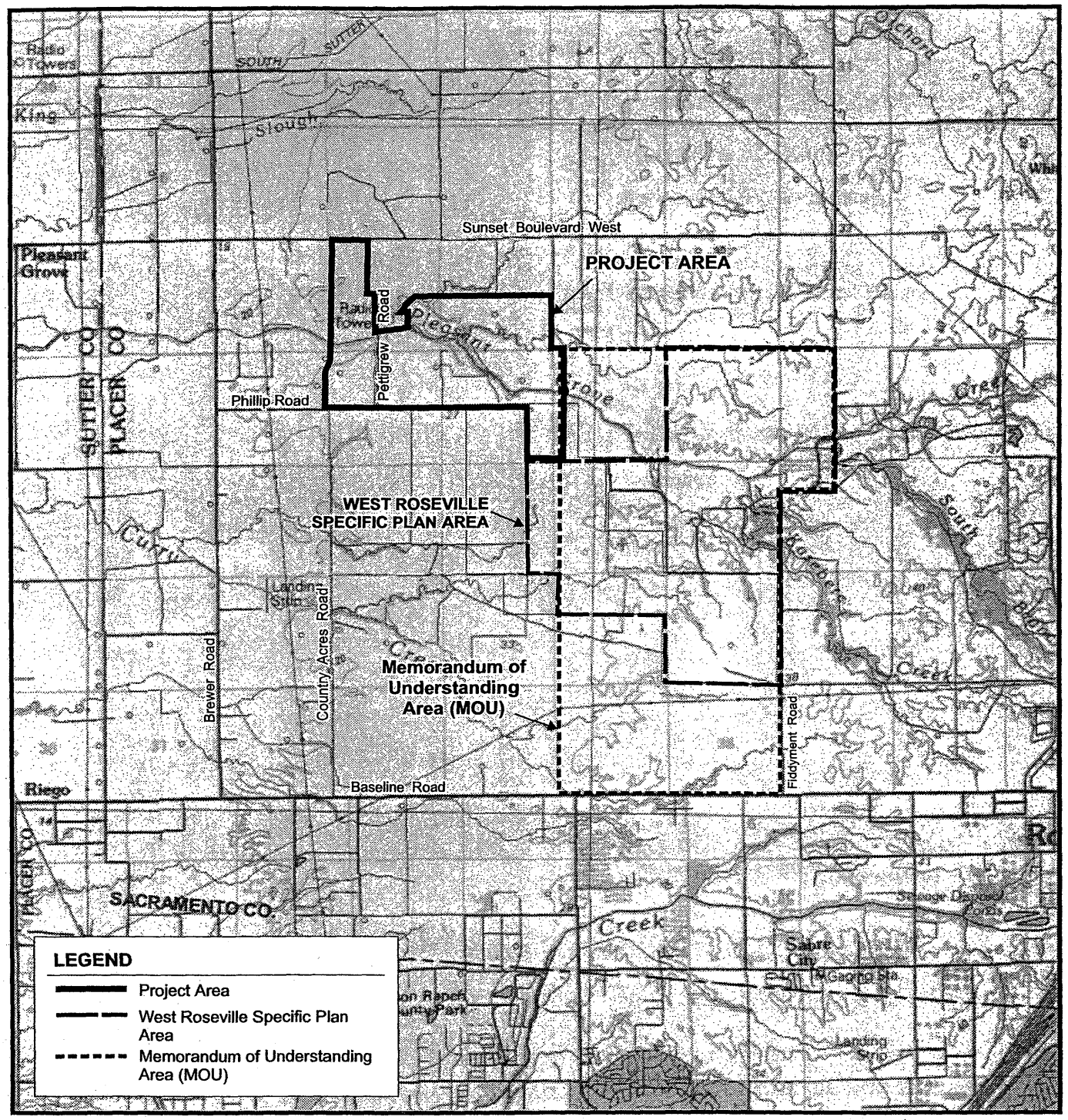
The City conducted a screening level evaluation of three alternative site locations for the proposed retention basin (PWA/URS, 2002). The project area, a site immediately north and east of the project area and closer to the city limits, and a site south of the project area and traversed by Curry Creek were evaluated. Environmental and physical constraints governing the development of the site were identified for each alternative. The project area was selected as the preferred site because it provided adequate retention storage with a lower level of environmental impact and a willing seller.

Prior to the City's consideration of the project area, the proponents of the WRSP (Westpark Associates and Signature Properties) identified the project area as a potential location for a retention facility to support their proposed development, and currently hold an option to purchase the property from the owner. Westpark Associates and Signature Properties have offered to make its option rights in the property available to the City so that the City can acquire the property individually or in conjunction with Westpark Associates and Signature Properties.

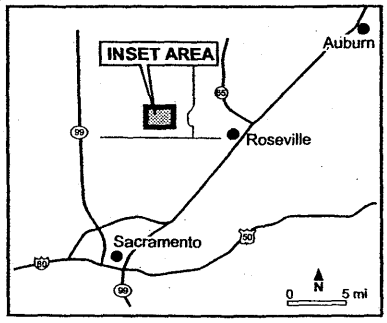
An Exclusive Right to Negotiate Agreement has been executed by the City and Westpark Associates and Signature Properties. Under the agreement, the City has gained the exclusive right to obtain Westpark Associates and Signature Properties option rights to purchase the Reason Farms property. During the Exclusive Negotiations period, which runs to February 1, 2003, the City and Westpark Associates and Signature Properties would negotiate the details of the acquisition of the Reason Farms property. Included in the negotiations would be such issues as the form of ownership of the property (City alone, in conjunction with Westpark Associates and Signature Properties, or ownership by a non-profit conservancy trust), the use or uses of the property, and the ultimate purchase price (City of Roseville, 2001).

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[1] 27 mgd (Dry Weather Flow) = 82.9 acre-feet. The requirement is to store the 24-hour Wet Weather Flow. Wet Weather Flow = 2.5 times Dry Weather Flow. 82.9 acre-feet × 2.5 = 207 acre-feet.



Source: USGS Electronic Base Map, 30x60 series, 1:100,000, Sacramento, California
City of Roseville, 2001. Major West Placer County Ownership and Potential Development Projects Map



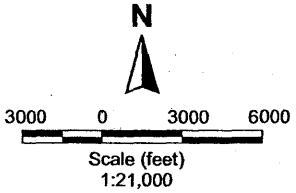


Figure 2-3
WEST ROSEVILLE SPECIFIC PLAN AND MEMORANDUM OF UNDERSTANDING AREAS

Initial Study
City of Roseville Retention Basin
Roseville, California

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The City would also acquire the parcel at the southwesternmost portion of the project area, also from an option held by Westpark Associates, and obtain a construction and maintenance easement for a small portion within parcel 017-100-041 adjacent to the eastern boundary of the Reason Farms site.

2.3 STUDY AREA CHARACTERISTICS

The proposed project area is rural in character. The project area has relatively flat, stepped topography, consistent with its use as rice fields. In general, the site slopes from east to west, from elevation 83 to 65 feet. As an exception, approximately 90 acres of the southeastern corner are higher, between elevation 86 and 90 feet. The rectangular area to the northwest slopes from north to south to the Pleasant Grove Creek between elevation 77 and 60 feet.

The primary feature of the project area is Pleasant Grove Creek, which bisects the majority of the project area (approximately 1,500 acres) into two major areas, north and south of the creek (Figure 2-4). Two tributaries to Pleasant Grove Creek, North Branch and Northern Tributary Two, flow through the northern area.

The low point in the streambed of Pleasant Grove Creek varies from 62 feet at the upstream end (east boundary) to 50 feet at the downstream end (west boundary).

The project area is designated Agriculture in the Placer County General Plan, and is zoned Farming and "Minimum Building Site as Shown on Map" (F-B-X). Adjacent lands are also designated F-B-X. The land uses surrounding the project area are predominantly agricultural (rice farming to the south and west and row crops/grazing to the north and east), residential to the northeast, and water courses/wetland areas and riparian habitat along the upstream and downstream portions of Pleasant Grove Creek outside the boundaries. A radio tower is located adjacent to the northern boundary of the project area.

One residential area, consisting of four mobile homes, and two residences and farm outbuildings are located between the southern boundary of the project area and Pleasant Grove Creek as shown on Figure 2-4. Four offsite residences are located close to the western, eastern, and northern boundaries of the project area. The location of these offsite residences is also shown on Figure 2-4.

2.4 PROJECT OBJECTIVES

The proposed project is intended to provide retention storage to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City or within other identified areas in south Placer County. Specific goals identified by the City include:

1. To provide retention storage for some or all of the incremental increase in runoff volume resulting from the City's currently entitled and future development projects that generate runoff flowing through Sutter County.

2. To provide retention storage for the West Roseville Specific Plan and the remainder of the MOU area and the Northwest Rocklin Annexation Area.
3. To provide retention storage for the City of Roseville Pleasant Grove Creek Wastewater Treatment Plant.
4. To meet the above objectives in a manner consistent and compatible with other goals and policies of the City of Roseville's General Plan, the Placer County General Plan, the Placer Legacy Project and the Wildlife Agencies.
5. To provide opportunities for open space and passive recreation adjacent to City boundaries.
6. To provide a low maintenance facility with a minimal amount of construction (excavation and/or fill placement).
7. To minimize the number of property owners who could be negatively affected by project implementation (property acquisition and construction).

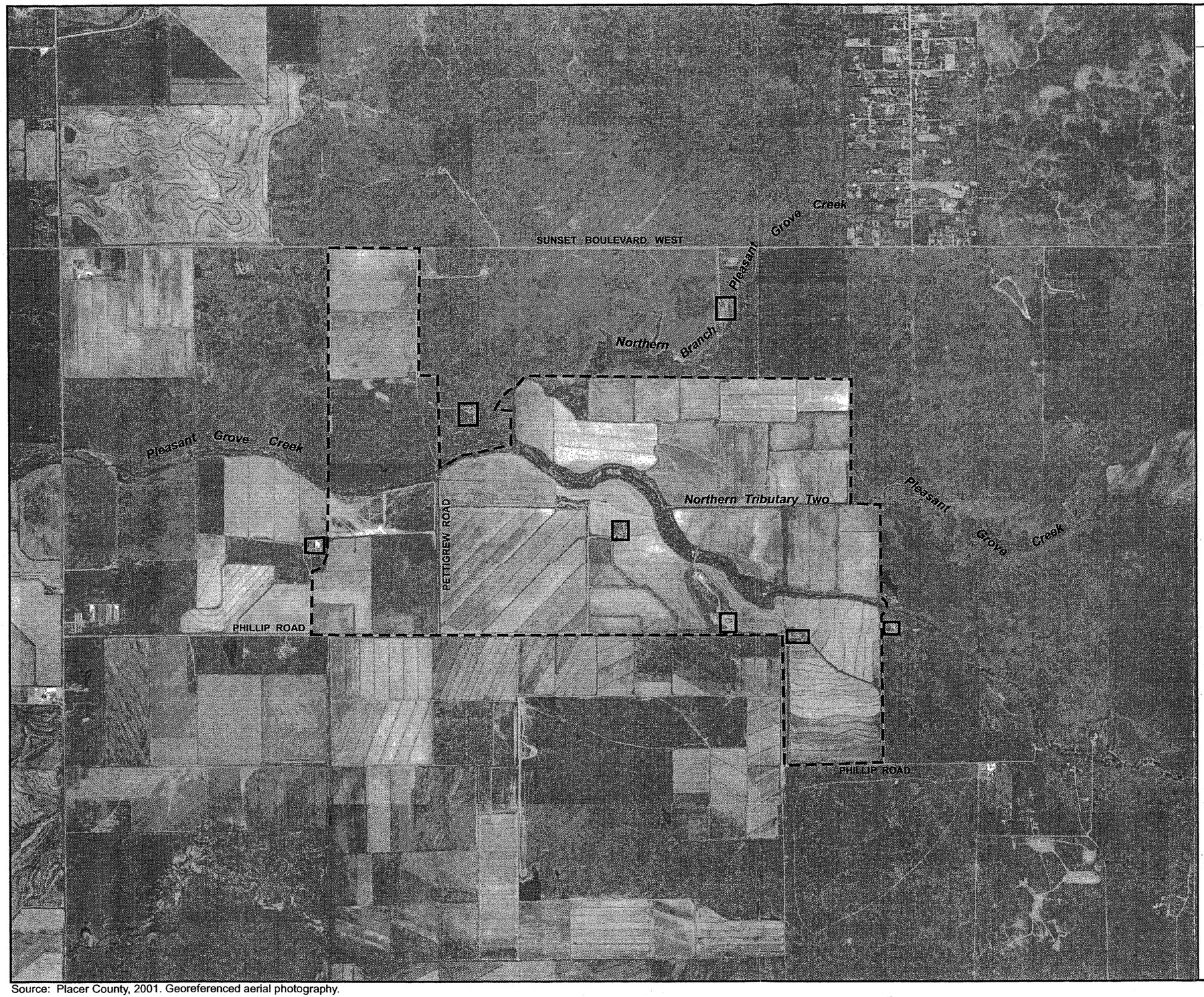
2.5 PROPOSED PROJECT

2.5.1 Overview

The proposed project would be a retention facility designed to provide retention storage of 2,530 acre-feet, while retaining and enhancing open space characteristics. It would provide future opportunities for other uses such as enhancement of riparian, wetland and upland habitats and passive recreation (pedestrian and bicycle trails, etc.) that could be constructed by the City or others. The City could retain ownership or ultimately convey ownership to a conservancy agency or another third party.

Portions of the site not used for retention could be sold by the City or retained as open space. If unused portions were sold, proceeds would revert to the Pleasant Grove Drainage Fee fund. Potential purchasers could include adjacent landowners who might use the area(s) for farming, developers who might use portions of these areas as mitigation sites for preservation or enhancement, or others such as Placer County Transportation Planning Agency who could plan to develop portions of the site as part of the Placer Parkway Project subject to a separate permitting process.

The project would be comprised of two basins, one located north of Pleasant Grove Creek and the second located south of the creek. On nearly all occasions, the basins would appear as open fields. A small stream would flow through the North Basin during the wet season, and about once annually, a small stream would flow through the South Basin. When flooding is imminent in Sutter County (perhaps once every fifteen to thirty years), the basin outlets would be closed and water would accumulate and be held in the basins for a period of days. When the threat of flooding in Sutter County recedes, the basins would then be allowed to drain dry. Each basin would have certain typical features such as embankments, low-flow channels, and outlet structures. The basins and typical features are described in the following sections of this chapter and are shown on Figures 2-5 through 2-11. The purpose of the project is to retain storm water runoff during episodes of imminent flooding in Sutter County. Such occurrences may turn out to be rather rare, which means that the volume of water flowing through Pleasant Grove Creek during



LEGEND

- Project Area
- Residence

N

1000 0 1000 2000

Scale (feet)
1:24:000

Figure 2-4
SITE MAP

Initial Study
City of Roseville Retention Basin
Roseville, California

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Source: Placer County, 2001. Georeferenced aerial photography.

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the year would generally not be sufficient to require the outlet gates of the retention basin to be closed for retention of surface water.

2.5.2 North Basin

The North Basin would have a surface area of approximately 171 acres. It would be located north of Pleasant Grove Creek and offset about 100 feet from the ordinary high water (OHW) level of the creek or 70 feet from the top of the bank, whichever provides the greatest offset from the top of the bank. The basin would receive water from Northern Tributary Two, a tributary to Pleasant Grove Creek that originates to the east of Reason Farms. Water entering the basin from Northern Tributary Two would be conveyed through the basin to the basin outlet structure by a low-flow channel. The low-flow channel would be constructed by excavation.

A man-made ditch at the eastern boundary of the site currently intercepts Northern Tributary Two flows. This ditch is currently incising along approximately 500 feet of its length. The North Basin embankment would cross this ditch, and with construction of the new low-flow channel, flows within Northern Tributary Two would no longer follow the existing ditch and the ditch would dry out. The existing ditch would be abandoned and filled. Northern Tributary Two would be reconstructed to approximate its former location prior to its realignment for rice farming.

An earthen embankment approximately 11,900 feet in length would be constructed by placing and compacting soil materials generated during excavation of the low-flow channel. The embankment would follow the alignment shown on Figure 2-5. Construction of the embankment would require about 261,000 cubic yards of compacted fill (243,000 cubic yards of structural fill plus 18,000 cubic yards of foundation fill).

The basin would have an outlet structure constructed of reinforced concrete that would be designed to regulate the storage of water in the basin. The structure would have wing walls at its ends that provide a transition between the embankment fill and the outlet structure. The structure would measure approximately 100 feet from wing wall to wing wall. A wall would be constructed between the wing walls. The wall would be about 13 feet in height and would be used to mount four sluice gates, each measuring 6 feet by 6 feet. The sluice gates would be automatically operated and would normally be in the open position. The features of the basin are described in more detail in Section 2.5.4.

The North Basin would have a maximum storage capacity of approximately 680 acre-feet. Flows in excess of the storage capacity of the basin would flow over the outlet structure wall, which would act as a weir and as the principal spillway of the basin. The top of the weir would be at elevation 75 feet.

The basin would have an emergency spillway to convey excess water from very large storms. The crest of the emergency spillway would be at elevation 77.2 feet. The emergency spillway crest length would be approximately 250 feet. Assuming the basin is filled to capacity (elevation 75 feet) and the gates are

closed, the outlet structure in combination with the emergency spillway would convey the 1,000-year, 24-hour storm while providing a minimum of 1.5 feet of freeboard between the calculated water surface elevation and the top of the embankment.

2.5.3 South Basin

The South Basin would have a surface area of approximately 348 acres. It would be located south of Pleasant Grove Creek and offset about 100 feet from the ordinary high water level of the creek or 70 feet from the top of bank, whichever provides the greatest offset from the top of the bank. To fill the basin, water would be diverted from Pleasant Grove Creek into a bypass channel excavated into the existing south bank floodplain. The bottom of the bypass channel would have a low-flow channel to assist with positive drainage through the system, and would convey water through the bypass channel to an inlet control structure, then through the basin and outlet structure and back into Pleasant Grove Creek.

An earthen embankment approximately 17,300 feet in length would be constructed by placing and compacting soil materials generated during excavation of the bypass channel. The embankment would follow the alignment shown on Figure 2-5. Construction of the embankment would require about 500,000 cubic yards of compacted fill (475,000 cubic yards of structural fill plus 25,000 cubic yards of foundation fill).

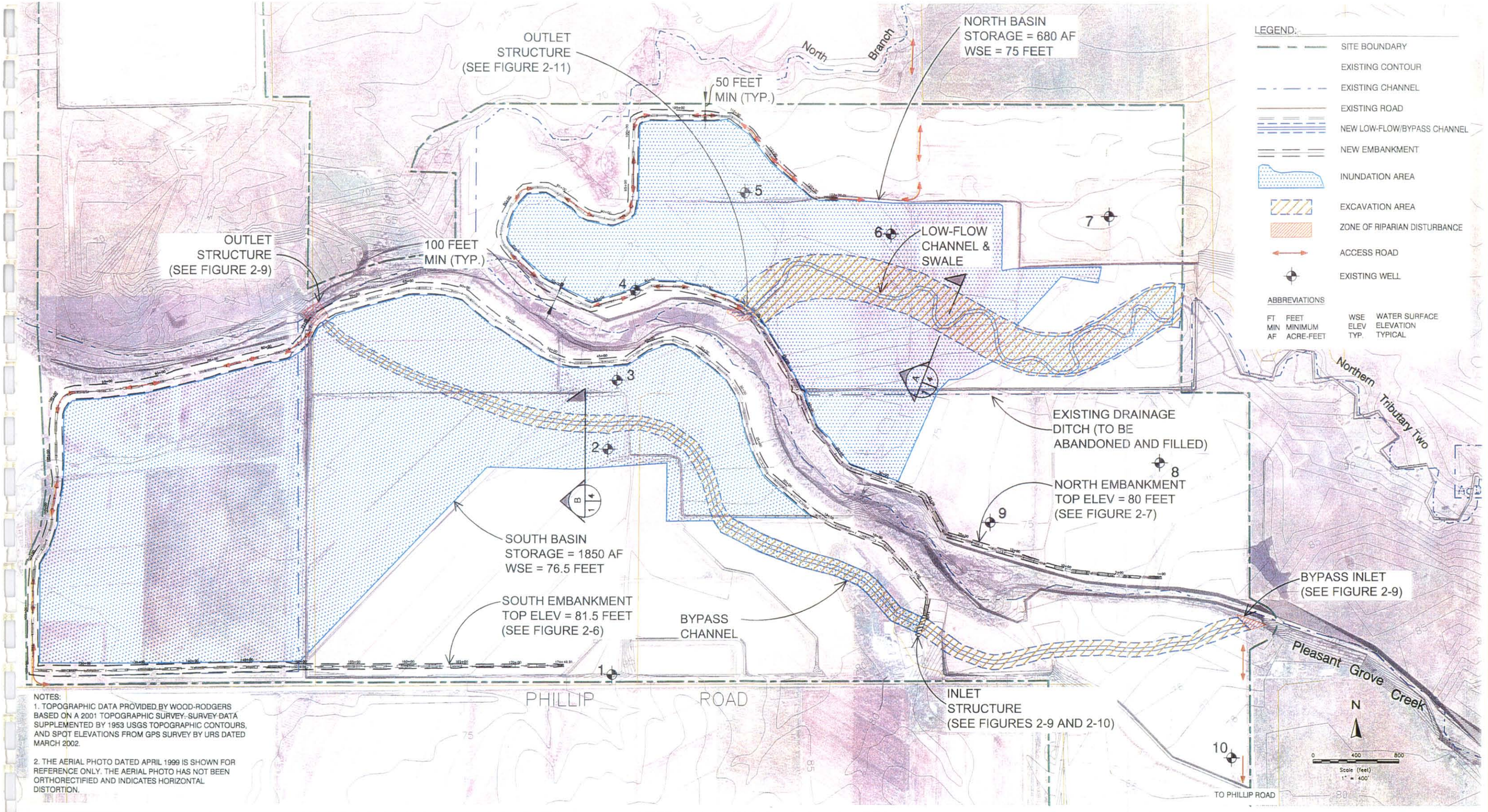
The South Basin would have both an inlet and an outlet structure. The structures would be constructed of reinforced concrete and would be designed to regulate the storage of water in the basin. Wing walls at the ends of the structures would provide a transition between the structures and the adjacent ground. The structures would measure approximately 35 feet from wing wall to wing wall. A wall would be constructed between the wing walls. On the inlet structure, the wall would be about 11 feet high; for the outlet structure the wall would be about 15 feet high. Three sluice gates, each measuring 6 feet by 6 feet, would be mounted on the inlet structure wall, and two sluice gates, each measuring 4 feet by 4 feet, would be mounted on the outlet structure wall. All of the gates would be automatically operated and would normally be in the open position. The features of the basin are described in more detail in Section 2.5.4.

When storing water, the basin would have a capacity of approximately 1,850 acre-feet. Flows in excess of the storage capacity of the basin would flow over the outlet structure wall, which would act as a weir and as the principal spillway of the basin. The top of both the inlet and outlet weirs would be at elevation 76.5 feet.

2.5.4 Typical Features

2.5.4.1 Basin Excavation

Excavation would be conducted along the alignment of the low-flow channel in the North Basin and along the alignment of the bypass channel in the South Basin. Scrapers and excavators would most likely



NOTES:
1. TOPOGRAPHIC DATA PROVIDED BY WOOD-RODGERS BASED ON A 2001 TOPOGRAPHIC SURVEY. SURVEY DATA SUPPLEMENTED BY 1953 USGS TOPOGRAPHIC CONTOURS, AND SPOT ELEVATIONS FROM GPS SURVEY BY URS DATED MARCH 2002.

2. THE AERIAL PHOTO DATED APRIL 1999 IS SHOWN FOR REFERENCE ONLY. THE AERIAL PHOTO HAS NOT BEEN ORTHORECTIFIED AND INDICATES HORIZONTAL DISTORTION.

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

Figure 2-5
PLAN VIEW

Initial Study
City of Roseville Retention Basin
Roseville, California

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perform the excavation. Excavated material would be used as fill to construct the embankments that will provide the water storage. Final grading along the low-flow and bypass channels and along the embankments would most likely be performed with graders and bulldozers.

2.5.4.2 Embankments

Embankments would be constructed to develop the storage volume of each basin and to provide freeboard above the calculated high water level. The embankments would likely have side slopes that vary from approximately 3H:1V (3 feet of horizontal distance for each 1 foot of elevation change) to approximately 5H:1V. The variable side slopes would provide a less uniform surface that would tend to be less distinct visually. The embankment top width would vary from a minimum of 12 feet to a maximum of about 20 feet. The variable top width would also provide a less uniform surface that would tend to be less distinct visually. The variable top width and side slopes would be designed to accommodate a gravel maintenance road, which could be developed as a portion of a future recreational trail system.

The embankments would vary in height from zero feet where the embankments tie into the existing ground surface to a maximum of about 20 feet near the outlet structures. On average, the South Basin embankment would be on the order of 10 feet high, and the North Basin embankment would be on the order of 8 feet high. Profiles of the embankments for the South and North basins are shown on Figures 2-6 and 2-7, respectively.

The embankments would be constructed of material excavated from the low-flow and bypass channels. Typical cross-sections for the low-flow and bypass channels are shown on Figure 2-8. Excavated material would be placed and compacted in 6- to 12-inch lifts, most likely using a sheepsfoot compactor. It is anticipated that a key trench may be required along the embankment where water is impounded but not along embankments that merely provide freeboard above the outlet structure weir elevations. After completion of final grading, all disturbed areas would be hydroseeded.

2.5.4.3 Inlet Structure

One inlet structure is proposed, as shown on Figures 2-9 and 2-10. The structure would be located approximately 2,800 feet from the eastern boundary of the project area on the bypass channel. The structure would regulate flows entering the South Basin. When water in Pleasant Grove Creek reaches an elevation of about 68 feet, water would flow through the bypass channel and towards the inlet structure.

The structure would have three gates with inverts at an elevation of 66 feet. Each gate would provide an opening measuring 6 feet by 6 feet. The gates would be made of steel and would have automatic actuators (electrically powered motors to open and close the gates). The gates would be mounted on a concrete wall measuring approximately 11 feet in height and 35 feet in length. The top of the wall would be at an elevation of 76.5 feet. The wall would terminate at wing walls that would provide a transition between the structure and the adjacent ground.

The inlet structure would have a concrete floor to facilitate the removal of debris and/or sediments. The finished surface of the floor would be at an elevation of about 66 feet. The upstream and downstream edges of the floor would have a cutoff wall and footing extending about 6 feet (elevation 60 feet) beneath the finished grade of the floor.

The gate would be in a normally open position to allow free exchange of water between Pleasant Grove Creek and the bypass channel. The signal to operate the gate would be transmitted from the City's flood warning operations center by telemetry. The inlet structure gates would automatically close when the basin reached its design capacity (elevation 76.5 feet) or when level sensors indicate that water levels in Pleasant Grove Creek are receding.

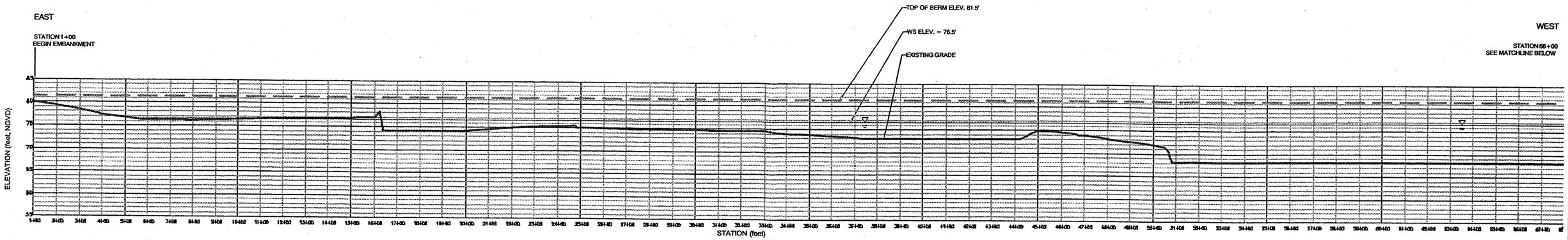
2.5.4.4 Outlet Structures

Two outlet structures are proposed: one for the North Basin and one for the South Basin. The structures would be located as shown on Figure 2-5, adjacent to and offset 100 feet from Pleasant Grove Creek. The structures would be oriented to direct flows back into open channels that would join with Pleasant Grove Creek. The open channels would be oriented so that the discharged flows gently merge with the flows in Pleasant Grove Creek. The design of the outlet structures is shown on Figures 2-9 and 2-11.

The outlet structure on the North Basin would have four gates. Each gate would provide an opening measuring 6 feet by 6 feet. The gates would be made of steel, have automatic actuators, and be mounted on a concrete wall measuring approximately 13 feet in height and 100 feet in length. For the North Basin, the top of the wall would be at an elevation of 75 feet. The wall would terminate at wing walls that would provide a transition between the structure and the adjacent ground.

The outlet structure on the South Basin would have two gates and be similar to the South Basin inlet structure. Each gate would provide an opening measuring 4 feet by 4 feet. The gates would be made of steel and would have automatic actuators. The gates would be mounted on a concrete wall measuring approximately 15 feet in height and 35 feet in length. For the South Basin, the top of the wall would be at elevation of 76.5 feet. The wall would terminate at wing walls that would provide a transition between the structure and the adjacent ground.

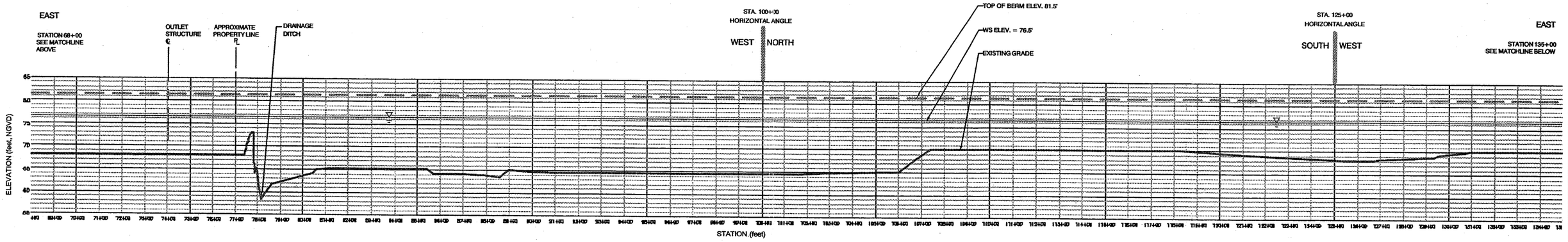
Each outlet structure would have a concrete floor and wing walls at an elevation of 62 feet. The upstream and downstream edges of the floor would have a cutoff wall and footing extending beneath the finished grade of the floor about 6 feet (elevation 56 feet). On the downstream side of each outlet structure concrete thrust blocks would be poured integral to the floor. The thrust blocks would assist with energy dissipation during high-flow events. The energy dissipating section of the floor would be recessed approximately 4 feet below elevation 62 feet (about elevation 58 feet). The thrust blocks would be covered in soil and gravel to provide a more natural channel bottom that would transition to an open channel on the downstream side of the structure. On the upstream side of the structure, the floor would



SOUTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'

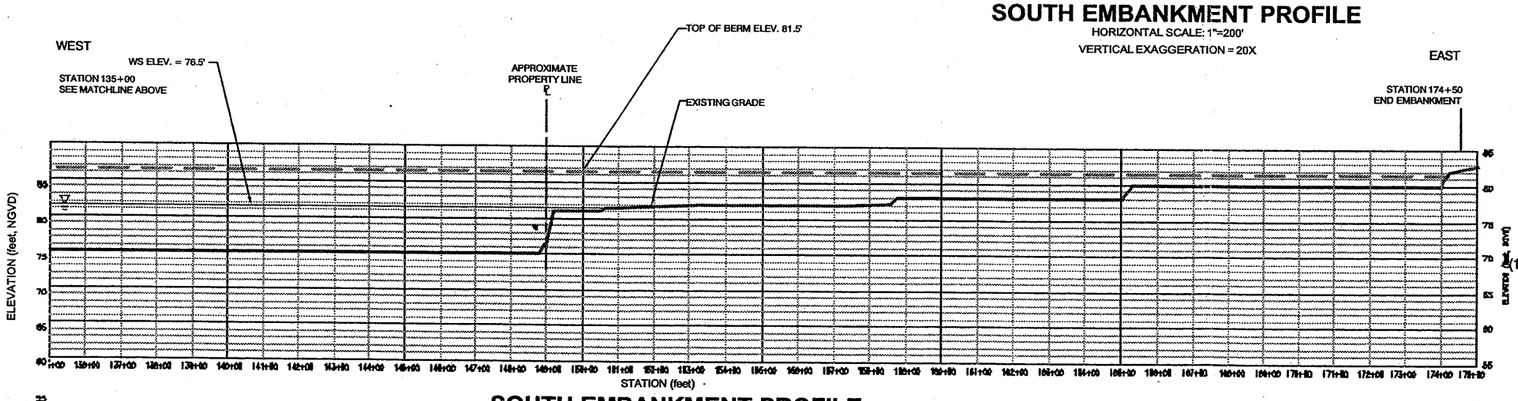
VERTICAL EXAGGERATION = 20X



SOUTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'

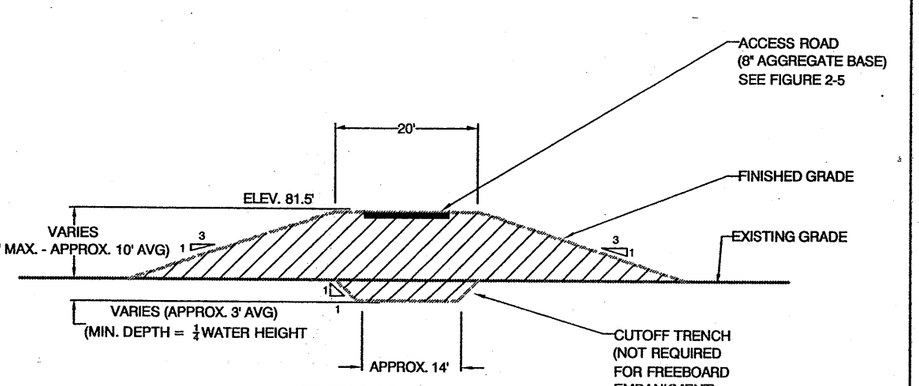
VERTICAL EXAGGERATION = 20X



SOUTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'

VERTICAL EXAGGERATION = 20X



TYPICAL SECTION SOUTH EMBANKMENT

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

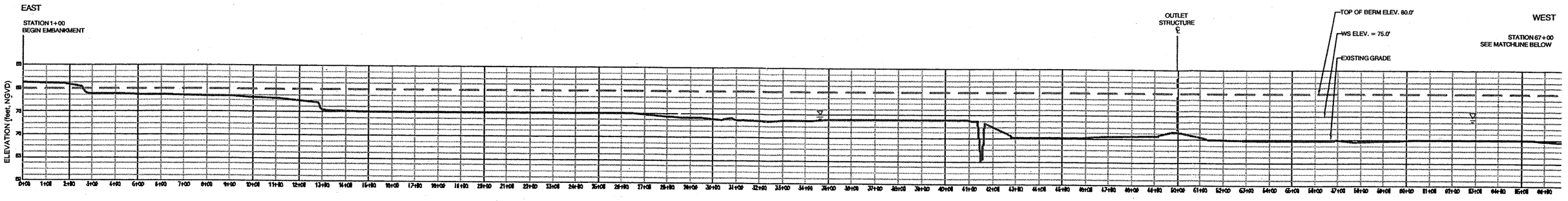
Figure 2-6
SOUTH EMBANKMENT PROFILE

Initial Study
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Roseville, California

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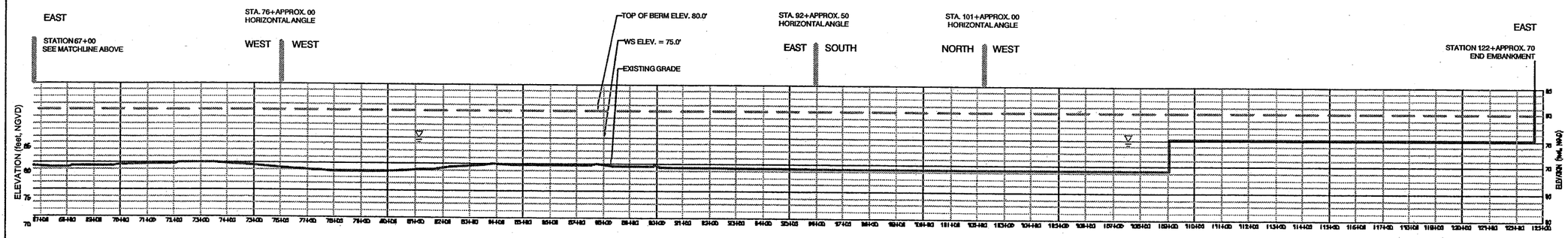
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STATION (feet)

NORTH EMBANKMENT PROFILE

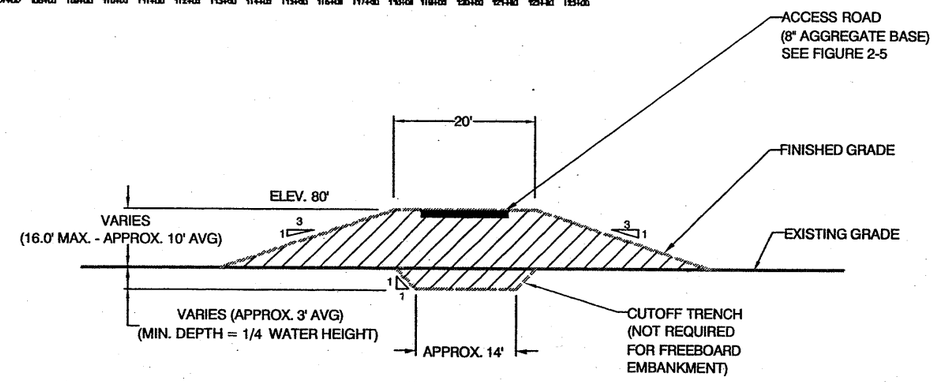
HORIZONTAL SCALE: 1"=200'
VERTICAL EXAGGERATION = 20X



STATION (feet)

NORTH EMBANKMENT PROFILE

HORIZONTAL SCALE: 1"=200'
VERTICAL EXAGGERATION = 20X



TYPICAL SECTION
NORTH EMBANKMENT

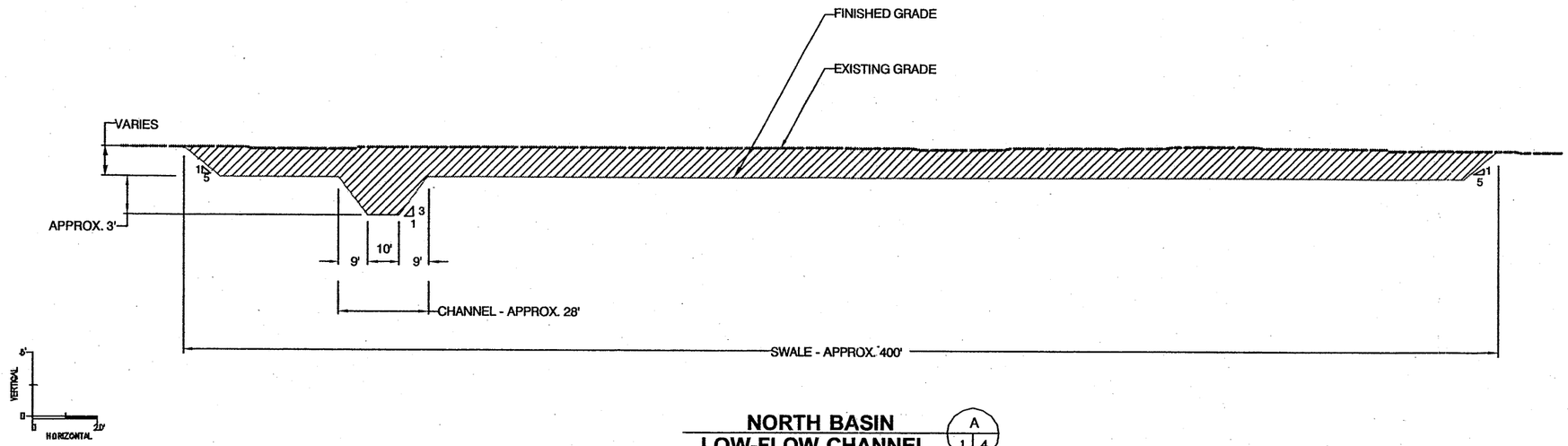
Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

Figure 2-7
NORTH EMBANKMENT PROFILE
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Roseville, California

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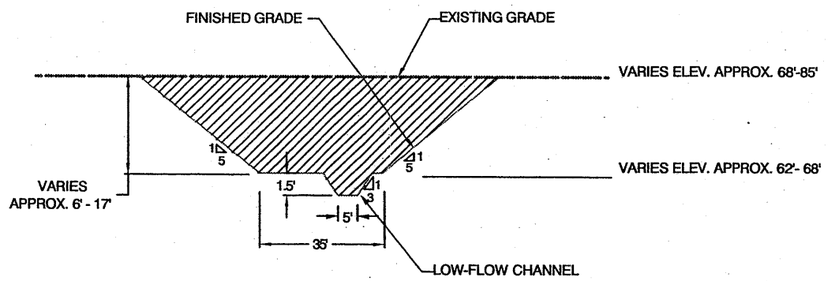
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NORTH BASIN LOW-FLOW CHANNEL (A 1|4)

Scale: 1"=20'
4x Vertical Exaggeration



SOUTH BASIN BYPASS CHANNEL (B 1|4)

Scale: 1"=20'
4x Vertical Exaggeration

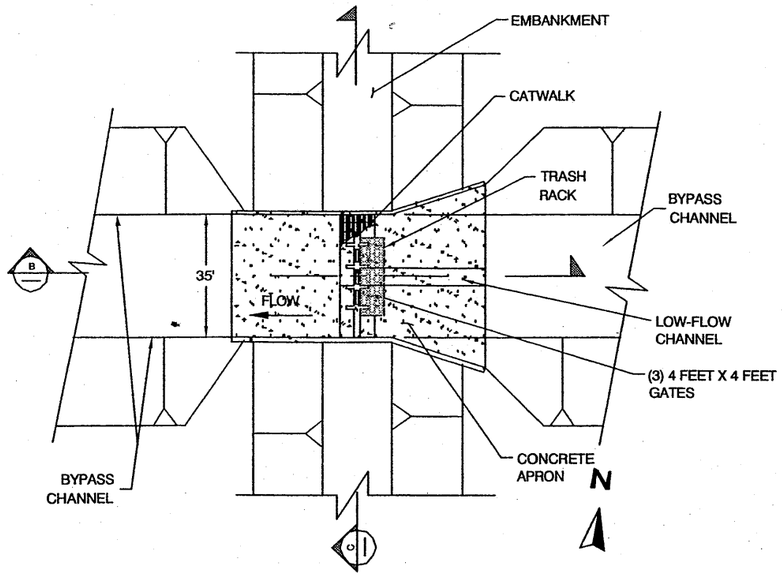
Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

Figure 2-8
BASIN AND LOW-FLOW CHANNEL TYPICAL SECTIONS

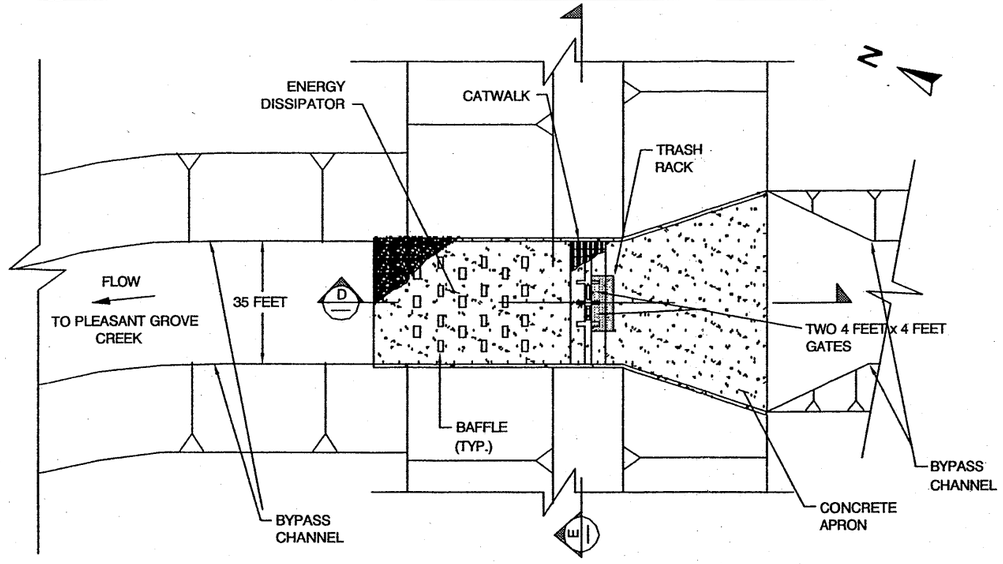
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Roseville, California

URS Ref. 43-00067030.00 June 2002

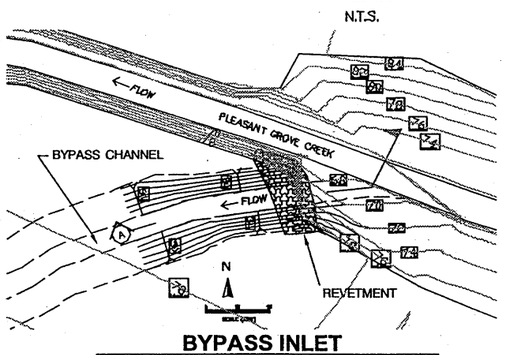
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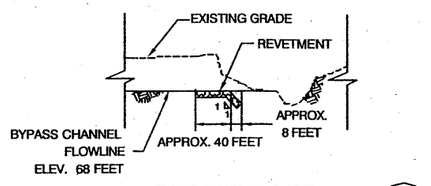
SOUTH BASIN INLET
PLAN



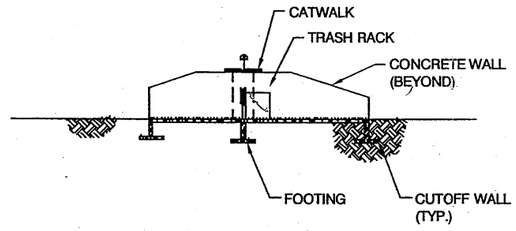
SOUTH BASIN OUTLET
PLAN
N.T.S.



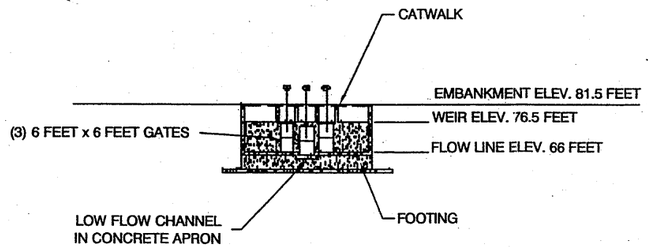
BYPASS INLET
PLAN
N.T.S.



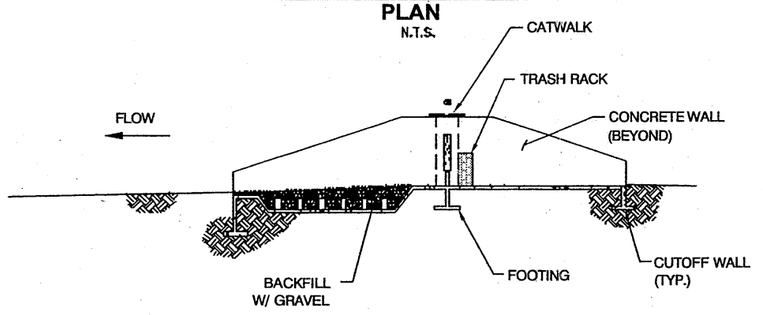
BYPASS INLET (A)
PROFILE
N.T.S.



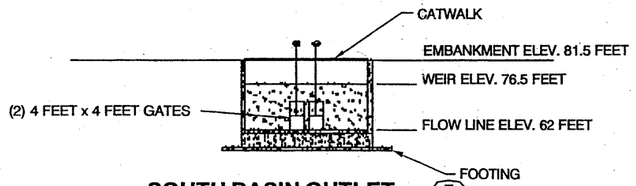
SOUTH BASIN INLET (B)
PROFILE
N.T.S.



SOUTH BASIN INLET (C)
SECTION
N.T.S.



SOUTH BASIN OUTLET (D)
PROFILE
N.T.S.



SOUTH BASIN OUTLET (E)
SECTION
N.T.S.

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

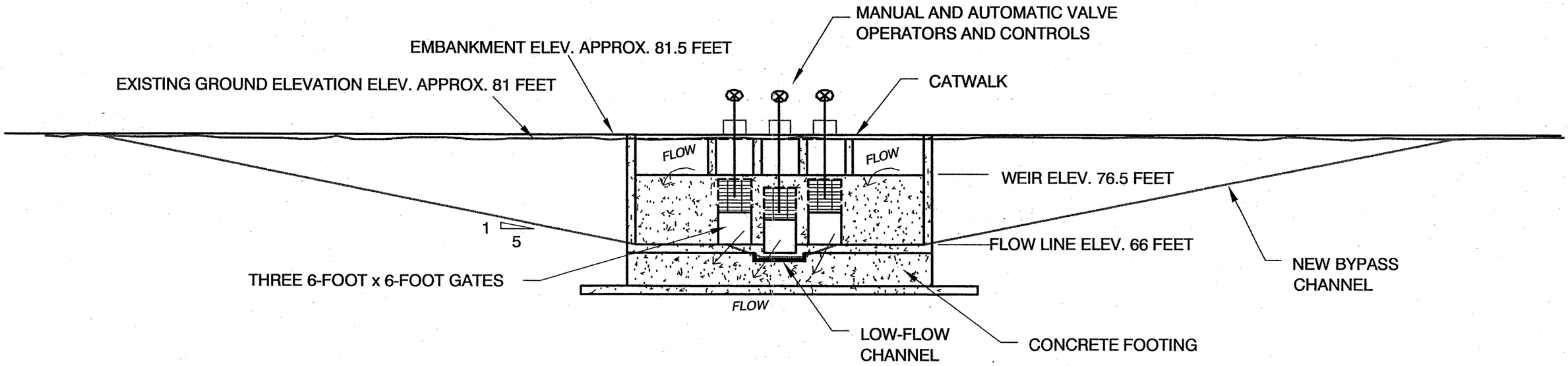
Figure 2-9
SOUTH BASIN
INLET AND OUTLET STRUCTURE

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Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

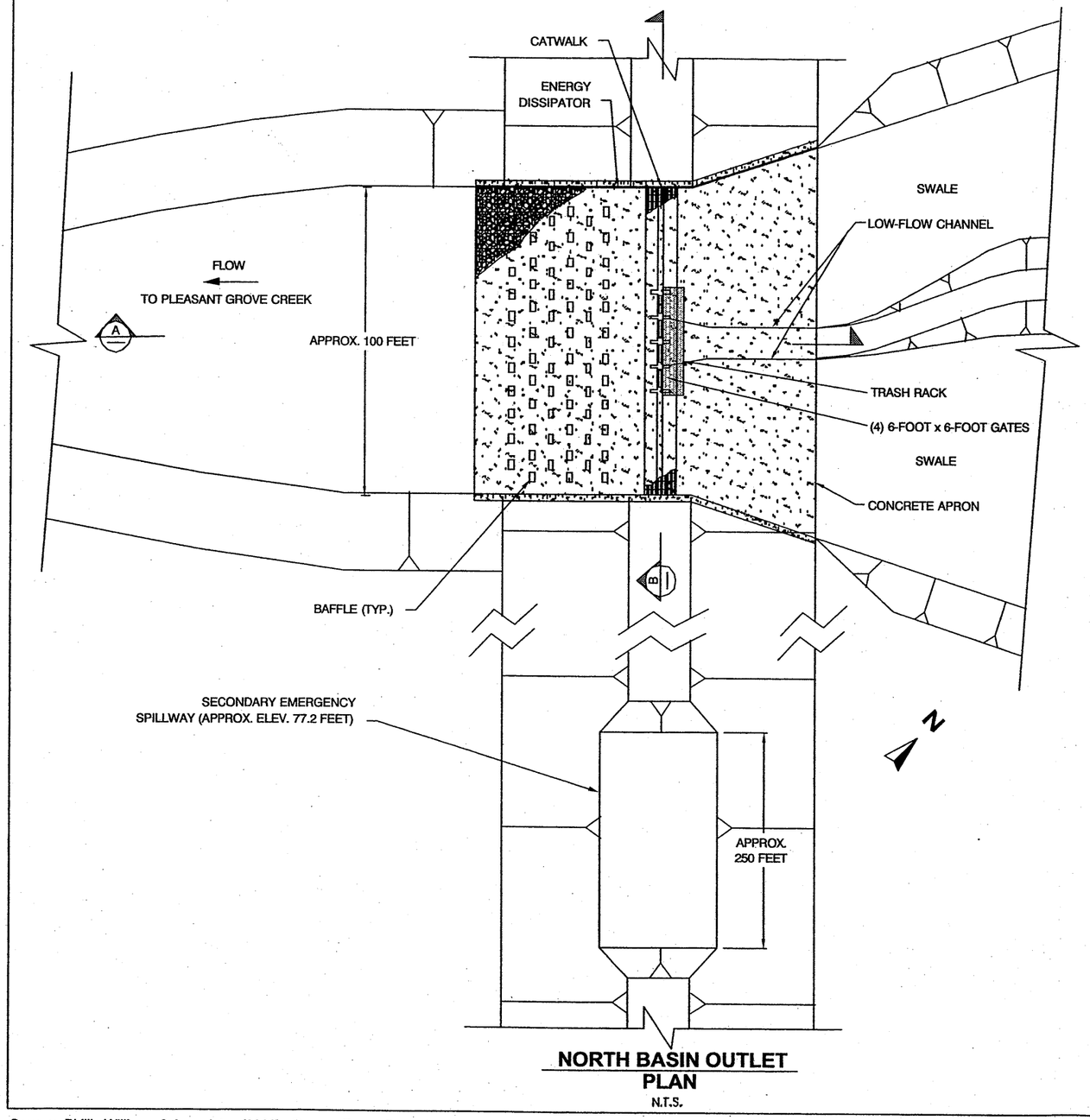
Figure 2-10
SOUTH BASIN INLET STRUCTURE ELEVATION VIEW

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Roseville, California

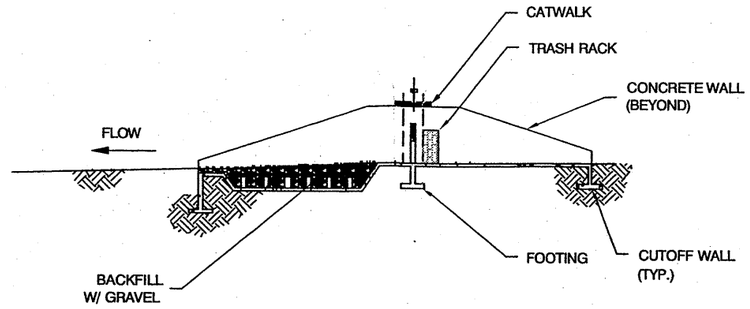
URS Ref. 43-00067030.00 June 2002

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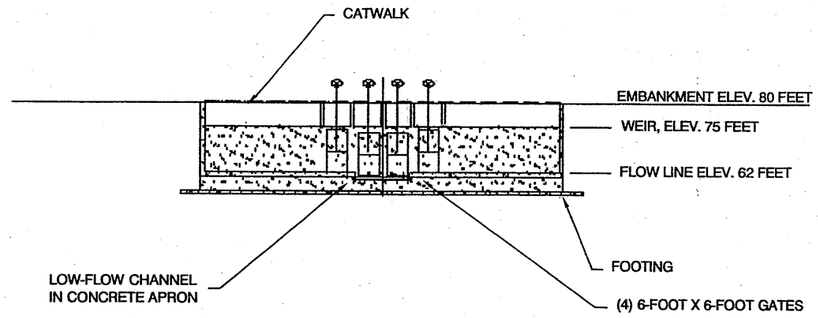
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NORTH BASIN OUTLET
PLAN
N.T.S.



NORTH BASIN OUTLET A
PROFILE
N.T.S.



NORTH BASIN OUTLET B
SECTION
N.T.S.

Source: Phillip Williams & Associates (2002). Reason Farms Retention Basin Final Conceptual Report. Prepared in association with URS Corporation for the City of Roseville. May 24, 2002.

Figure 2-11
NORTH BASIN
OUTLET STRUCTURE

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

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not be recessed but would have a low-flow channel formed into its surface. The low-flow channel would be approximately 1 foot deep.

The signal to open or close the outlet structure gates of both basins would be transmitted from the City's flood warning operations center to the gate actuator by telemetry. The gate would normally be in a open position to allow free exchange of water between basins and Pleasant Grove Creek. During flood events, when the storage of water is needed, the gates would automatically close. The gates could then reopen if necessary to maintain sufficient freeboard in the basins. When floodwaters in Sutter County recede, the gates would be opened to allow the basins to drain completely by gravity.

2.5.4.5 Emergency Spillway

The conceptual design incorporates an emergency spillway for the North Basin. The emergency spillway would provide an additional spillway capacity such that the 24-hour, 1,000-year storm could pass through the basin while the outlet gates were closed and still maintain at least 1.5 feet of freeboard to the top of the embankment. The emergency spillway would begin to flow at an elevation of 77.2 feet. The spillway would be lined with grass. It would operate as a broad-crested weir measuring 250 feet in length. The spillway would discharge overland to Pleasant Grove Creek.

2.5.4.6 Low-Flow Channel

Both the North Basin and the South Basin would have low-flow channels to provide positive drainage through the basin. Typical sections of the bypass and low-flow channels are shown on Figure 2-8. On the North Basin, the low-flow channel would follow the approximate alignment of the historic natural channel. The low-flow channel would have a bottom width of about 10 feet and side slopes of 3H:1V; it would meander within the bottom of a wide (± 400-foot) swale. The swale would be excavated as a flat terrace approximately 3 to 6 feet below the existing ground surface as shown on Figure 2-8. The edges of the swale would be sloped at 5H:1V to tie into the existing ground surface.

For the South Basin, a bypass channel would be excavated from the eastern boundary of the site beginning on the southern bank of Pleasant Grove Creek. The bypass would extend generally westward through the southern portion of the site to the southern basin inlet and through the basin to its outlet structure. The bypass channel would be roughly trapezoidal and have a bottom width of 35 feet and side slopes of 5H:1V that tie into the existing ground surface. A low-flow channel would gently meander in the bottom of the bypass channel. The low-flow channel would also be roughly trapezoidal, have a bottom width of about 5 feet and side slopes of 3H:1V that tie into the bottom of the bypass channel. The intent of the low-flow channel would be to reduce the potential for fish to become stranded in the bypass as waters drained from the bypass channel into Pleasant Grove Creek.

The entrance to the bypass channel at Pleasant Grove Creek would be armored to prevent erosion and slope failure. This would be accomplished with a revetment of interlocking concrete blocks. The

revetment would be anchored in a toe trench located along its upstream edge. The toe trench would extend down to an elevation approximating the elevation of the flow line in Pleasant Grove Creek. After installation, the interlocking concrete blocks would be covered with soil and hydroseeded.

During the final design process, the geometry (width, depth and longitudinal slope) of the low-flow channel dimensions would be refined, to the extent practicable, so that the channel would convey sediments through the basin (the amount of sediment entering the basin would equal the amount of sediment leaving the basin).

After completion of final grading, all disturbed areas would be hydroseeded.

2.5.4.7 Access Roads

Access roadways would provide maintenance vehicle access between public roads and the inlet and outlet structures. The roadways would have an aggregate surface. The roadway section would most likely consist of approximately 8 inches of compacted aggregate base rock placed on a subgrade of compacted earth. The access roads would extend along the top of the embankments as shown on Figure 2-5.

2.5.5 Environmental Protection Measures

The project was designed with the goal of using the existing topography to minimize disruption of the riparian zones and other non-agricultural features of the site. The use of existing topography would also minimize the amount of wetland impacts and reduction of wildlife habitat values. In addition, the project was designed to accommodate opportunities for other uses at the site that could be constructed in the future by the City or others, as separate projects. These opportunities include habitat enhancement, restoration, and recreation. Opportunities for future use are mentioned briefly in the following sections and are described in more detail in Section 2.6; however, they are not formally part of this project. The proposed project would protect and restore riparian habitats, create seasonal wetlands and waterfowl habitat, protect oak woodlands, and create regional habitat linkages, as detailed in the following sections. It would not eliminate the existing freshwater marsh or vernal pools.

2.5.5.1 Riparian Habitat/Freshwater Marsh

A corridor of high-quality riparian forest and freshwater marsh borders Pleasant Grove Creek within the project area. The proposed project would not disturb these habitats except for small encroachments at the inlet and outlet structures associated with the retention basins. The inlet structure for the bypass channel would be located in low-density riparian forest at the eastern boundary of the project site. The outlet structures would join Pleasant Grove Creek downstream of the highest quality riparian forest in the central part of the project site. To further protect riparian habitat along Pleasant Grove Creek, embankment structures would be set back approximately 100 feet from the ordinary high water mark or 70 feet from the top of the bank, whichever provides the greater distance from the top of the bank.

Although not proposed as part of the project, within this setback area there would be an opportunity for restoration of riparian habitat.

The design of the North and South basins would also result in the creation of riparian wetland habitat. New riparian wetlands would be created along the bypass channel in the South Basin and Northern Tributary Two would be restored to a more natural and sinuous stream course with an adjacent floodplain. Northern Tributary Two is currently channelized with little riparian vegetation. The new low-flow channel would be longer and the floodplain would be expanded, which would increase the area of the riparian wetlands.

A 9-acre freshwater marsh is located between the North Branch of Pleasant Grove Creek and the North Basin embankment, within the project site. Construction of the North Basin would avoid and retain this freshwater marsh.

2.5.5.2 Vernal Pools

Approximately 105 acres of low-density vernal pools and associated grasslands currently exist in the northwestern section of the project site. The project would not disturb that section of the project site, which could, however, be sold in the future.. There is the potential in the future for enhancement of the vernal pools and grassland in the northwest portion of the site by others.

2.5.5.3 Winter Waterfowl Habitat

The proposed North and South basins would be constructed in areas where rice is currently cultivated. The rice fields could be converted to seasonal wetlands after the construction of the retention basins. The constructed basins and adjacent fields would continue to seasonally pond water and provide some winter waterfowl habitat due to the heavy clay content of the soils and retention of normal stormwater runoff. Therefore, some degree of winter waterfowl habitat will be retained as part of the project.

2.5.5.4 Oak Woodlands

Valley oaks, cottonwoods, and willows dominate the riparian forest corridor. Protection of the riparian forest, as described above, would also protect the associated oak woodlands. Trees that are removed as a result of the bypass channel and inlet/outlet structures would be replaced on site according to the City of Roseville Tree Ordinance. In addition, oaks would colonize the area between the existing levee and the new embankment if that area is no longer under cultivation.

2.5.5.5 Habitat Linkages

It is likely that wildlife currently use the habitats at the project area to disperse throughout the regional landscape. The proposed project would retain the existing open space used for retention. No urban or

residential development would occur as part of the project in these areas. Protection of these project area habitats would enhance the link between existing open space and vernal pool complexes east and west of the site.

The possibility exists for future projects that could enhance or restore natural habitat to several other parts of the project site, especially native grasslands and/or vernal pools in the far northwest and southeast corners and along the Pleasant Grove Creek riparian corridor in the setback area between the proposed embankment and the top of the stream bank.

2.5.6 Maintenance

The inlet and outlet structures and the North and South basins would be maintained facilities. Maintenance activities for the inlet and outlet structures would include periodic inspection of the structures and gates, operation of the gates, lubrication of the gates and gate actuators, testing of sensors and switches, and periodic installation of replacement parts. Maintenance of the basins would include periodic inspections of the embankments, periodic inspections of the low-flow channels, the bypass and swale, and periodic inspection of the main branch of Pleasant Grove Creek through the project area. The objectives of these periodic inspections would be to assess the integrity and condition of the embankments, low-flow channels, bypass channel, and swale, and to identify and implement repairs as needed. Maintenance activities could also include removal of accumulated sediments near inlet and outlet structures or from within the basins themselves, if the sediment accumulation was to interfere with the operation or flow and storage capacity of the inlet or outlet structures or the basins.

Although it is the intent of the design that removal of vegetation would not be necessary, on occasion, depending upon the plant communities that establish within the low-flow channels and basin bottom, it may be necessary and desirable to remove vegetation. Conditions that would warrant removal of vegetation could include, but would not necessarily be limited to, establishment of non-native plants (such as arundo) that could diminish riparian and wetland habitat values or prevent the conveyance of water through the basins, development of conditions that could be considered a fire hazard to adjacent properties, or intrusion of vegetation on access roads or trails.

2.5.7 Construction

2.5.7.1 Construction Methods

This section discusses basic construction methods for the retention basins and their structural components. Construction of the North and South basins would be accomplished primarily through excavation and fill placement. Material excavated from the low-flow/bypass channels would be used as fill material for construction of the embankments. In addition to grading activities, other construction activities for project implementation would include construction of concrete structures, revegetation, and sediment and erosion control.

Prior to commencing construction, sensitive habitat areas such as creeks, wetlands, and vernal pools both within and adjacent to the work area would be enclosed in construction or silt fences to prohibit access. The hazardous materials on site would be contained and removed in accordance with applicable regulations for the transport and disposal of hazardous materials on public thoroughfares by licensed contractors. To reduce the potential for erosion and sedimentation of the Pleasant Grove Creek during construction, a Notice of Intent would be filed with the State Water Resources Control Board (SWRCB) prior to construction indicating that the project intends to comply with the state general construction activity National Pollution Discharge Elimination System (NPDES) permit. This would include preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that would contain Best Management Practices (BMPs) designed to reduce the potential for increased erosion and transport of sediments and other pollutants to Pleasant Grove Creek. Appropriate BMPs may include "good housekeeping" measures, designated construction staging areas, fuel spill containment, erosion and silt fencing and other measures. Construction methods for the major project elements are discussed in more detail below.

Basin Excavation

The main excavation activity for construction of the North and South basins would be excavation of the low-flow and bypass channels. Excavation would be conducted along the alignment of the low-flow channel in the North Basin and along the alignment of the bypass channel in the South Basin. Prior to excavating, the area of excavation would be cleared of existing vegetation. Topsoil may be salvaged and stockpiled for later use.

Given the scale of the excavation (approximately 679,000 cubic yards), mass grading would likely be performed using scrapers or other large grading equipment. The scrapers would also transport excavated material to the new embankment alignment for use as fill material. Fine grading along the low-flow and bypass channels, and as needed at other location within the basins, would most likely be performed with graders and bulldozers. Water trucks would be used for dust control during excavation.

Limited excavation would also be performed adjacent to Pleasant Grove Creek to connect the inlet and outlet structures with the main creek channel. This excavation would be performed during the summer low-flow period to minimize impacts to the creek. If required to complete the work near Pleasant Grove Creek, check dams could be installed, upstream and downstream of the work area, and submersible pumps used to direct water past the work area. Sediment control measures for work within and near the creek are discussed below.

Embankments

Embankments would be constructed using material excavated from the low-flow and bypass channels. Prior to fill placement, the subgrade of the embankments would be prepared by clearing the area of vegetation and removing and stockpiling topsoil. In addition, where a key trench is required, the subgrade would be excavated to the required dimensions, the bottom of the trench would be compacted,

and excavated material placed back into the trench and compacted in lifts. Due to the smaller dimensions of the key trench, excavation of the trench would likely be performed using excavators or small-scale scrapers. Compaction would be performed using a sheepsfoot compactor or other mechanical compaction equipment.

For embankment construction, excavated material would be placed in 6- to 12-inch lifts, using either scrapers or bulldozers. Each lift of fill would be compacted using a sheepsfoot compactor. Water trucks would be used for dust control and for managing the soil moisture content during backfill and compaction activities.

Inlet and Outlet Structures

The inlet and outlet structures would be cast-in-place reinforced concrete structures. The outlet structures would have their foundations embedded in undisturbed soil. The structures would be backfilled to create a firm and water-resistant seal with the adjacent embankment. To ensure proper lateral support, the embankments would likely be constructed first at outlet structure locations, and then excavated to allow construction of the structures.

The reinforced concrete structures would be formed and poured. Bottom slabs and walls could be poured in contact with adjacent soil. Preparation work prior to concrete pouring would include constructing forms and assembling reinforcing steel. It is likely that forming and pouring concrete would happen in sequential stages beginning with foundations and ending with above-ground walls. The prefabricated sluice gates would be set and cast in the concrete walls.

Access Roads

Access roadways would be constructed along the top of the embankments by placing and compacting aggregate base rock. Base rock would be delivered to the site in dump trucks and most likely be spread by graders and bulldozers and compacted with mechanical compaction equipment. The compacted aggregate base rock would be placed on a subgrade of compacted earth.

Erosion and Sediment Control

The City would file a Notice of Intent with the State Water Resource Control Board indicating that the project intends to comply with the State general construction activity NPDES permit. Erosion- and sediment-control measures would be implemented throughout construction. In general, erosion (source) control would be emphasized over the trapping of sediment once erosion had occurred.

As grading activities are completed, disturbed areas would be hydroseeded for erosion control. Additional measures, such as straw mulch or biodegradable erosion control fabric, may be applied to embankments slopes and along low-flow/bypass channels, which may be more susceptible to erosion.

No construction equipment would be allowed within Pleasant Grove Creek (below top of bank), except as needed for channel excavation at inlet/outlet structures. Silt fences would be installed at the top of creek banks within the construction area to trap sediment, as well as to discourage entry by personnel and equipment. Limited excavation would be performed in Pleasant Grove Creek to excavate connector channels to inlet and outlet structures. Check dams, constructed of drain rock or other suitable material, may be installed within Pleasant Grove Creek for sediment trapping, assuming creek flows are minimal. Depending on creek flow and groundwater conditions, floating silt curtains may also be used to enclose the excavation area.

Depending on flow conditions, temporary check dams or sediment basins may also be installed in the new low-flow and/or bypass channels to reduce flow velocities and trap sediment.

2.5.7.2 Construction Equipment and Workforce

The types of construction equipment needed for performance of the work are described in Section 2.7.1. The total number of equipment and personnel on the site at one time would depend upon the construction schedule and phasing. The largest construction workforce would be on site if both basins were constructed in one construction season. For this scenario, it is assumed that channel excavation, embankment construction and inlet/outlet structure installation would be performed concurrently, at different locations on the site.

For grading activities, up to approximately 45 to 50 workers may be on site, comprised of the superintendent, foremen, inspectors, equipment operators, grade checkers and laborers. Up to 30 to 35 pieces of heavy construction equipment may be on site at one time. The number and types of grading equipment at the peak of grading activities is estimated as follows: 10 to 15 scrapers, 4 compactors, 6 bulldozers, 2 excavators, 2 graders, and 4 water trucks. Construction would be limited to the daytime hours of 7 A.M. to 7 P.M., Monday through Friday and 8 A.M. to 8 P.M. Saturday and Sunday in accordance with the City of Roseville's Noise Ordinance.

For construction of concrete structures, it is assumed that the structures would be built one at a time. An additional 15 workers may be on site for structure installation, including a foreman, laborers, electricians, carpenters, inspectors, truck drivers and equipment operators. Heavy equipment for construction of the structures would include concrete mixers, trucks for materials delivery (forms, reinforcing steel, gates, etc.) and lifts or other equipment for offloading and storing materials. The highest level of traffic would likely occur during concrete pours, when approximately 10 to 15 concrete mixers per day may be delivering concrete to the site.

If the retention basins were constructed in one phase, construction traffic to the South Basin would travel along Baseline Road, Fiddyment Road, and then Phillip Road to the southern site entrance. If the retention basins were constructed in two phases, construction traffic to the South Basin would occur along the route described above. Construction traffic to the North Basin would primarily occur along

Fiddyment Road, Sunset Boulevard West, and then along an existing access easement that extends from Sunset Boulevard West to the project site. Construction equipment would be stored during the construction period within the project area in construction staging yards. These construction staging yards would also include contractor parking facilities. Construction staging areas would most likely be located in close proximity to existing roads, but in any case, would avoid all sensitive habitat areas described above.

2.5.7.3 Construction Phasing

The project would likely be constructed in two phases. If constructed in one phase, all work would be accomplished as a single construction project, with most if not all work completed in a single construction season. If constructed in two phases, each basin would be constructed as an individual project. In the two-phase scenario, the first phase would be the South Basin, and the second phase would be the North Basin. Phases 1 and 2 could be constructed concurrently by separate contractors, or could be separated in time by one or more construction seasons, depending upon available funding.

The general sequence of construction would be deconstruction of existing facilities, channel excavation, embankment construction and inlet/outlet structure installation; however, these three activities could be performed concurrently at different locations on the site. If construction of both basins were phased over more than one season, temporary drainage control measures would be implemented to ensure proper drainage on and through the sites during storm events.

2.6 OPPORTUNITIES FOR FUTURE USES

The project area would be managed by the City of Roseville as public open space and would accommodate opportunities for other uses at the site that could be constructed in the future by the City or others as separate projects. The opportunities, although discussed herein, are not part of this project. These include habitat enhancement and restoration projects, recreation through the development of recreational trails, and potentially a portion of a future Placer Parkway. These opportunities are discussed in the following sections.

2.6.1 Habitat Enhancement and Restoration

Areas within the project site could be subjected to habitat enhancement and restoration, likely by the City or others seeking to provide mitigation for adverse impacts to biological resources associated with other development projects. Candidate areas include enhancement of the riparian corridor along Pleasant Grove Creek, enhancement of the vernal pools and grassland in the northwest portion of the site, creation of seasonal wetlands within the basin areas or outside of them, and creation of vernal pools outside of the basin areas where conditions allow.

2.6.2 Opportunity for Future Passive Recreation and Trailways

To protect the remaining riparian vegetation, wetland areas and the stream environment of Pleasant Grove Creek within the project area, a setback of 100 feet would be established from the ordinary high water mark of the creek (or 70 feet from the top of bank, whichever provides the greatest offset from the top of bank) as part of the proposed project. The development of the riparian buffer could provide passive recreation opportunities such as nature watching and bird watching.

Passive recreational trails could be integrated into the embankments created from the basin excavation. The trails could be designed in a slightly undulating form, varying in elevation following the top of the embankment grade to approximately –10 feet vertically below, in some locations. Depending upon its use (pedestrian or bike), the trail width would vary. For pedestrian trails, the width would vary from 4 to 8 feet depending on available flat area adjacent to the trail alignment. For bike use, the trail would likely conform to the City's standard 10-foot-wide paved section with 2-foot shoulders. In some cases the trail could be the same path as the maintenance vehicle access road. Pedestrian paths could have either an aggregate base (along the maintenance vehicle access road), or a compacted soil surface covered with a bark or other natural ground covers. The trails would utilize existing access areas where feasible. Areas adjacent to the trail would be hydroseeded to provide visual interest and erosion control, reducing the amount of maintenance needed over the life of the project.

The placement of recreational trails could follow the embankment, providing some access opportunities directly adjacent to the creek. The trail could be placed to avoid sensitive habitats and to limit interference with restoration efforts. Trails should be limited along the north side of Pleasant Grove Creek to maintain existing habitat values by reducing disturbance of breeding and foraging wildlife. Rest areas with visual interest could be created at key overlooks along the creek. Potential overlook locations have been chosen based on scenic attributes along the riparian corridor. In some cases these viewpoint/ rest areas would be adjacent to the outlet structures and could be integrated into the final design. The location of the trail and viewpoints are flexible and can be adjusted to provide adequate separation from important habitat areas. The final location of the trail would be determined based on existing conditions, community desires and cost constraints specific to the project. Establishing goals for implementing the recreation trail and placement guidelines would be encouraged in the future.

2.6.3 Other Uses for Basin Areas

The project area and the proposed design provide an opportunity to protect an important reach of Pleasant Grove Creek. Pleasant Grove Creek and adjacent wetland and upland habitats are important for several listed species, including vernal pool fairy shrimp and Swainson's hawk. The Placer Legacy Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) have identified vernal pool complexes and riparian habitats, on and in the vicinity of the site, as important resources. The conceptual design would accommodate linkages between existing habitats that are fragmented and isolated by

intensive cultivation of the Reason Farms site and therefore promote the goals of the Placer Legacy HCP/NCCP.

The Reason Farms site and the proposed design also provide an opportunity to accommodate Placer Parkway, a proposed transportation facility that would connect SR 65 in the Lincoln/Roseville/Rocklin area to SR 70/99 in Sutter County and the Sacramento International Airport (DKS Associates, 2001). Several conceptual alignments have been preliminarily identified (Figure 2-12). The northern alignment borders the northernmost portion of the site along Sunset Boulevard West.

The preferred alignment traverses the site near the southeastern boundary of the project area. The design of the retention basin could accommodate the development of either of these alignments of Placer Parkway.

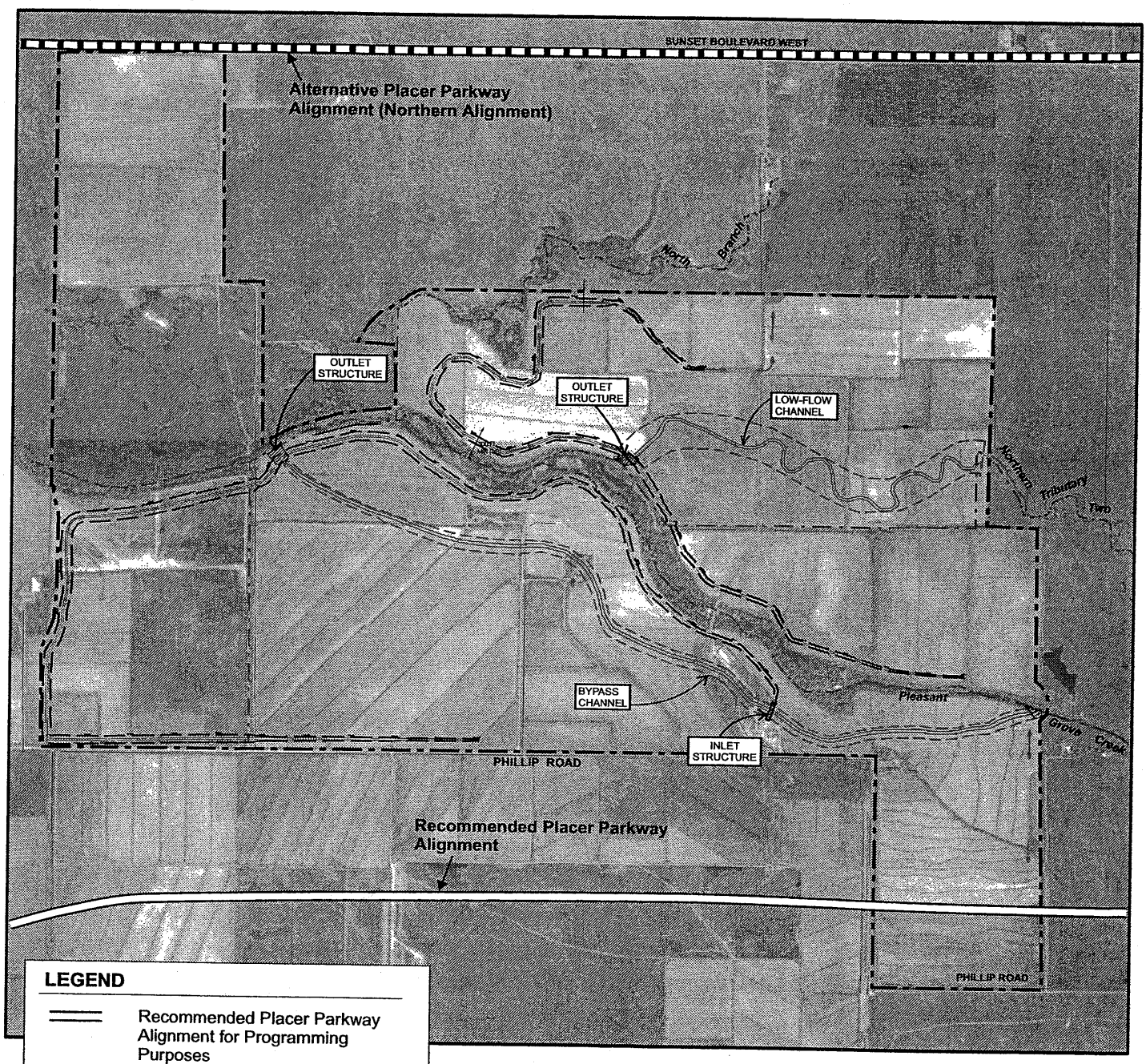
Although it is unlikely that farming would continue at the site, it is possible that adjacent owners with existing farming operations may consider portions of the site to be viable for rice farming or grazing, as an extension of their existing operations. It is also possible that none of the above-described opportunities for future uses would occur. The retention basin site could remain fallow or be managed as open space by the City of Roseville. Portions of the site not used for retention could be sold by the City to adjacent landowners or others for conservation/mitigation, agricultural or development interests.

2.7 EXISTING FACILITIES

The Reason Farms site contains a variety of existing facilities, mainly related to agriculture. These facilities, including buildings, fuel storage tanks and fencing would be removed and debris would be hauled offsite to an appropriate landfill. There are also approximately 12 existing groundwater wells on the site. These wells would be capped and left in operable condition.

2.8 ESTIMATED COSTS

The estimated total cost of the project ranges from $20,350,000 to $28,125,000 in 2002 dollars. This includes engineering design and construction, environmental clearance, permitting, mitigation implementation and monitoring, property acquisition, provision for a future maintenance bridge if required, and ongoing maintenance and operation expenses. Demolition of existing structures on the site, and remediation and/or disposal of contaminated soils, if any, could be negotiated as part of the property purchase. Because the design is at the conceptual stage, several assumptions were made regarding components of the project that would be designed in subsequent design phases. A contingency has been included to cover the construction costs for project components that may not be detailed at this stage of the project. This estimate does not include costs associated with implementing opportunities for other uses such as enhanced restoration planting, recreational trails, etc.



LEGEND

- Recommended Placer Parkway Alignment for Programming Purposes
- Alternative Placer Parkway Alignment (Northern Alignment)
- Site Boundary
- Existing Channel
- Existing Road
- New Low-Flow/Bypass Channel
- New Embankment
- Intake And Outfall Structure Area of Disturbance (Permanent and Temporary)
- Access Road

N

0 800 1600 3200

Scale (feet)

Figure 2-12
POTENTIAL PLACER PARKWAY ALIGNMENTS

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2.9 REQUIRED APPROVALS AND PERMITS

As part of the implementation of the proposed project, several permits and approvals would be necessary prior to construction. These permits and approvals are listed below.

- U.S. Army Corps of Engineers Permit for Fill In Waters of the U.S.
- Section 7 Consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service.
- State Water Quality Control Board Certification.
- California Department of Fish and Game Streambed Alteration Agreement.
- City of Roseville Tree Permit.
- State Reclamation Board Encroachment Permit.
- Compliance with the California Department of Water Resources, Division of Safety of Dams. Includes approval of application for construction of the dam and compliance with inspection requirements.
- California Regional Water Quality Control Board, Central Valley Region Notice of Intent and Stormwater Pollution Prevention Plan.
- Easement for construction and maintenance, Parcel 017-010-041.
- Abandonment of Pettigrew Road.
- Preserve the southwestern portion of the project area under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves. The Administrative Rules for Agricultural and Open Space Preserves implements the provisions of the Williamson Act in Placer County.

References

Ackers, P. and W.R. White. 1973. Sediment Transport: New Approach and Analysis. J. Hyd. Div. ASCE, 99, no. HY11 (1973):2043-60.

Brownlie, W.R. 1981. Prediction of Flow Depth and Sediment Discharge in Open Channels. Report no. KH-R-43A. Pasadena: California Institute of Technology, W.M. Keck Laboratory.

Chadwick, A. and J. Morfett. 1998. Hydraulics in Civil and Environmental Engineering. Third edition. E&FN Spon. 600 pp.

City of Roseville. 2002. City of Roseville Feasibility Analysis Technical Studies for Proposed West Roseville Specific Plan and City/County MOU Area. February.

City of Roseville. 2001. Demographic, Development, and Employment Profile 2000-2001. Roseville City Manager's Office, August 2001.

Civil Solutions. 2000a. Pleasant Grove Watershed Mitigation Fee for the City of Roseville. May 5, 2000.

Civil Solutions 2000b. Amendment to Pleasant Grove Watershed Mitigation Fee for Woodcreek East and Doctors Ranch. May 18, 2000.

County of Placer. 1985. Assessor's Map Block 17, Pages 01, 02, 09, 10, 13, and 15. County of Placer, California.

DKS Associates. 2001. Project Study Report (Project Development Support) for Placer Parkway. June 13, 2001.

EIP Associates. 2001. Northwest Rocklin Annexation (Sunset Ranchos) Draft Environmental Impact Report SCH No. 99102014. Prepared by EIP Associates, Sacramento, California for the City of Rocklin, California, October 2001.

ESA (Environmental Science Associates). 1996. Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report. SCH No. 93092079. Prepared by ESA, Sacramento, California, for the City of Roseville, California, May 1996.

Julien, P.Y. 1998. Erosion and Sedimentation. Cambridge University Press. 280 pp.

Montgomery Watson Harza. 2001. Wastewater Evaluation of Urban Growth Areas. Technical Memorandum prepared for the City of Roseville Feasibility Analysis. December 4, 2001.

Placer County. 2002. 2001 Economic and Demographic Profile. www.placer.ca.gov.

Placer County/City of Roseville. N.D. Memorandum of Understanding, Placer County/City of Roseville. Adopted by the Council of the City of Roseville. January 5, 2000.

PWA/URS (Philip Williams & Associates and URS Corporation). 2002. Final Conceptual Design Report for the City of Roseville Retention Basin. May 24, 2002.

URS/PWA (URS Corporation and Philip Williams & Associates, Ltd.). 2002. Screening Level Evaluation of Alternative Site Locations for the City of Roseville Retention Basin. March 8, 2002.

Wood-Rodgers Inc. 2001a. Master Drainage Study for Fiddyment/Westpark Properties. November.

Wood-Rodgers Inc. 2001b. Summary Retention Volume Analysis for Memorandum of Understanding, Transition Area. November 2001.

Wood-Rodgers Inc. and Wade Associates. 2001. Summary Report for Proposed Retention Basin at Reason Farms Placer County, California.

3.0 CEQA CHECKLIST INFORMATION

Chapter 3 provides the information required to determine and document whether or not the proposed project described in Chapter 2 would have a significant or potentially significant effect on the environment. This information follows the format suggested in the CEQA Guidelines, which is a series of environmental checklists. It provides supporting analysis and references in response to each question, following the checklist for a particular resource. Chapter 4 uses the information in Chapter 3 to provide the environmental evaluation and recommendation for further studies, and the environmental determination required by CEQA.

3.1 AESTHETICS

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?			✓	
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or night-time views in the area?				✓

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

Views and vistas of the site are large and expansive in nature due to the open, fairly flat terrain. The primary location on the site where the views are interrupted is along Pleasant Grove Creek because of the dense riparian vegetation including large clusters of oak woodlands that border it. These trees are mostly deciduous and provide some of the most visually pleasing views due to the seasonal change in leaf colors. The leaves change from dark green in summer to yellow green in the fall and spring and fall off in winter, when the trees are brown. The existing open fields surrounding the creek also change color depending upon crop yields. The dominant colors of the fields are golden in the summer and fall, and green in the winter and spring, depending on rainfall.

Several photos of the existing landscape taken in December 2001 have been included to depict the general visual effect of the area (see Figures 3-1a and 3-1b). As seen in these photos, the visual quality of the site and surrounding area is relatively open and flat. However, Pleasant Grove Creek is distinctly marked by the riparian habitat of oak woodlands.

The riparian habitat along Pleasant Grove Creek is one of the more scenically beautiful views in the area. The valley oaks, cottonwoods, willows, and most importantly the oak woodlands dominate the setting due to their contrast to the relatively flat landscape. The setback from Pleasant Grove Creek for the retention basin would allow the oaks to colonize farther into the buffer area and deepen the riparian zone, enhancing the visual effect. The retention basin design would only remove trees directly in line with the placement of the inlet and outlet structures, which would not substantially alter scenic views in the area. In addition, any trees removed would be replaced consistent with the City of Roseville Tree Preservation Ordinance (see Mitigation Measure B-4, discussed in Section 3.4, Biological Resources).

Since no other buildings or structures are planned on the site, other than the inlet and outlet structures and low-flow channels, the visual impact to the site would be minimal. The impressions made in the landscape through the construction of the retention basin may be noticeable from certain vantage points where the embankments reach elevations beyond 10 feet. Since the site is such a large open flat space, the observer's attention is more likely to be drawn to the riparian habitat containing large oak woodlands that demarcate Pleasant Grove Creek, which traverses the site. The visual power of these vertical elements is likely to be dominant.

The cultivation of rice on the site would likely no longer continue, therefore the attraction to the site by winter waterfowl is difficult to predict. Depending on the basin floor ponding conditions, this seasonal habitat may continue to attract the waterfowl, maintaining this temporary visual aesthetic, or it may dissuade waterfowl and decrease the visual impression of winter wildlife. The existing vernal pools in the northwest portion of the site would not be disturbed, and the design would allow a reasonable setback from this sensitive habitat; therefore, the visual effect of this unique landscape would be left intact. The project would have a less than significant impact on the scenic vistas of the site.

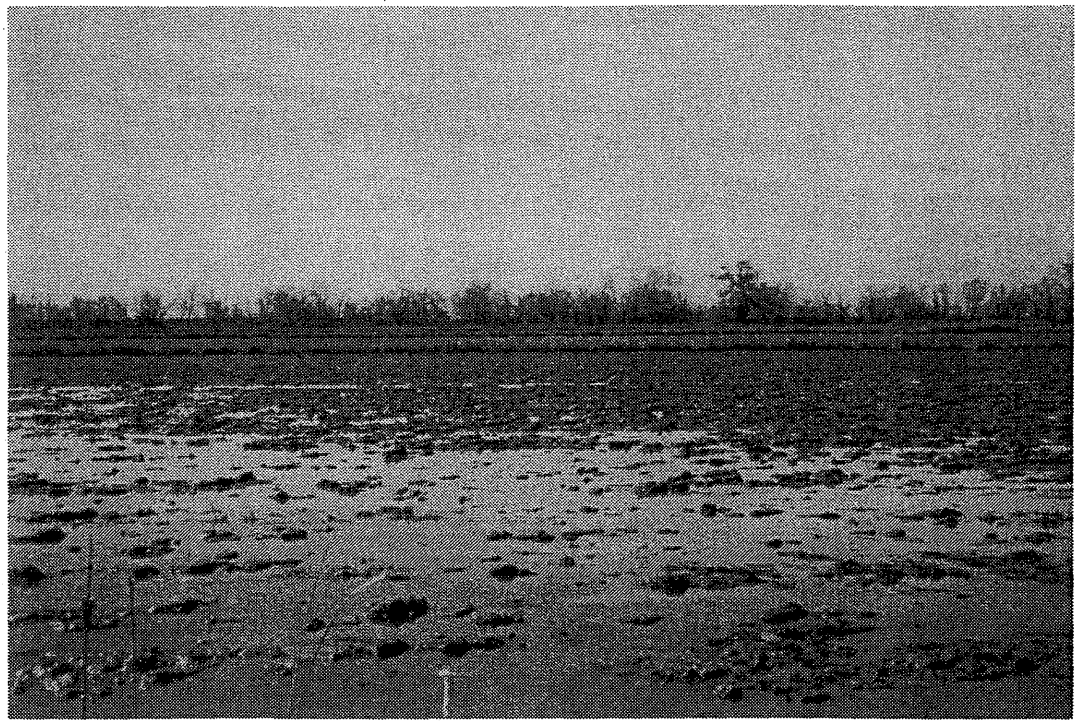
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

Views exposed from thoroughfares and access points to a site provide the overall aesthetic impression of an area. Depending on the vantage point, the viewer typically makes an initial determination of scenic quality from the road before entering a site. The riparian zone along Pleasant Grove Creek with oak woodlands may qualify as historically scenic and would be visible from the surrounding thoroughfares. However, none of the roads have substantial traffic and they do not qualify as state scenic highways. Therefore, there would be no impact.

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

Man-made and/or natural components required to implement the design of the retention basin could have a potential visual impact on the character and quality of the site. These components would include inlet and outlet structures, bypass channels, embankments, limited fencing, sign posts, maintenance roads, landscape materials, land forms, open space, and the creek. As described in Chapter 2, creative implementation of grading and construction of structures in the final design would blend within the landforms of the surrounding environment.

The retention basin has been designed to minimize alteration to the contours of the land and to carefully connect into existing elevations. The walls of the retention basin have been designed to adapt to the current site conditions with side slopes varying between 3H:1V (3 Horizontal to 1 Vertical) and approximately 5H:1V. Inlet and outlet structures would be built with operational control points in the design to allow for flexible adjustments of the water supply. The structures would be integrated into the existing landscape to the extent possible. Because of sensitivities incorporated into the project design,



View south from northern boundary; oak woodlands provide reference to location of Pleasant Grove Creek.



View northeast from Pleasant Grove Creek across rice fields.

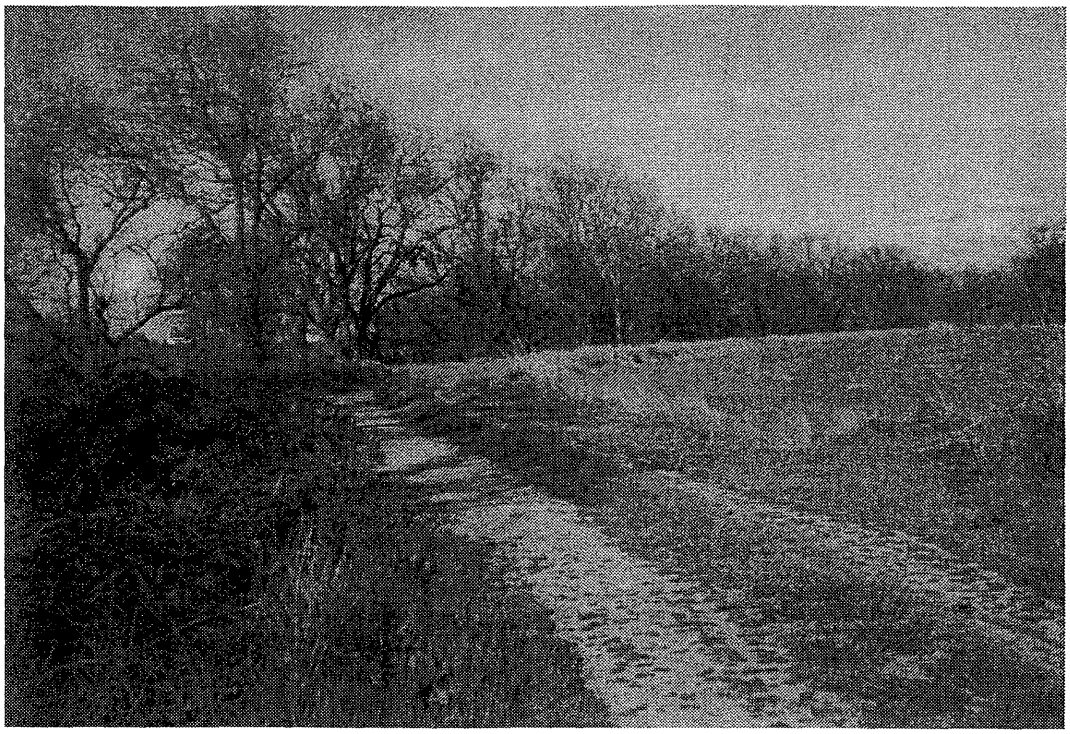
Figure 3-1a
EXISTING PROJECT LANDSCAPE

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View northeast along access road embankment bordering oak woodlands of Pleasant Grove Creek.



View east through the riparian habitat of Pleasant Grove Creek.

Figure 3-1b
EXISTING PROJECT LANDSCAPE

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changes to the landscape would not substantially degrade the existing visual character or quality of the site and its surroundings, and consequently the impact is considered less than significant.

Construction would generate minimal short-term impacts such as temporary increases in noise and dust. Since the roads are not major thoroughfares, detours around the site are not expected. The impact to scenic areas during construction from the equipment, vehicles and staging would be controlled with the use of construction or silt fences to prohibit access and maintain the quality of sensitive habitats as described in Chapter 2, Project Description. The exact placement is not known at this time.

The site consists of vernal pools, season wetlands, freshwater marsh, seasonal riparian habitat and other waters of the U.S. on and adjacent to the site. Most of the habitats are seasonally dry and are not physically linked to the drainage system, with the exception of channelized streams and sloughs that drain the regional area and irrigated croplands. The design has taken these habitats into consideration to preserve the existing visual character on and off site.

Because the land would be changed from private ownership and managed by the City of Roseville as public open space, access through the site would be improved. This would allow more people to enjoy Pleasant Grove Creek directly and experience the high-quality habitat there. While there would be some visual impacts and changes to the aesthetic environment, the project would have a less than significant impact on the visual character and site quality or surrounding land use.

The proposed project could accommodate a future passive recreational trail system, as described in Section 2.6.2 of the Project Description and as discussed in more detail in Section 3.14, Recreation. The trail could be integrated into the embankments created from the basin excavation and could undulate with varying elevations. The trail could follow the setback and connect closer to Pleasant Grove Creek in some areas with scenic overlooks or viewpoints. The overlook locations could coincide with the inlet/outlet structures to better utilize the changed landscape. Any future trail would be placed to avoid sensitive habitats and to limit interference with restoration efforts, with limitations along the north side of Pleasant Grove Creek to maintain existing habitat values by reducing disturbance of breeding and foraging wildlife. No additional impacts to visual quality would be anticipated as a result of such a future trail system.

d) Create a new source of substantial light or glare which would adversely affect day or night-time views in the area?

Some lighting may be required at the inlet and outlet locations to provide for emergency night-time access. This lighting would be less intrusive and less visible than existing light associated with residences to be removed and existing lights at irrigation pumps. New light sources would not change light or glare conditions on the site and would not adversely affect day or night-time views in the area.

Conclusion

The development of the project would:

- have a less than significant impact on a scenic vista;
- not impact scenic resources;
- have a less than significant impact on the existing visual character or quality of the site and its surroundings; and
- not impact day or night-time views in the area resulting from the creation of substantial light or glare.

None of these issues require further analysis and do not warrant carrying forward to the focused Environmental Impact Report (EIR).

References

City of Roseville. 1992. General Plan. City of Roseville Planning Department, November 18, 1992.

Draft West Roseville Specific Plan. April 2002. Prepared for the City of Roseville.

U.S. Department of Interior, Bureau of Land Management. 1986. *Visual Resource Inventory Manual.*

3.2 AGRICULTURAL RESOURCES

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
2. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	✓			
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?		✓		
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	✓			

a) Convert important farmland to non-agricultural use?

The California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP), which produces maps and statistical data used for analyzing impacts on California's agricultural resources. The following Department of Conservation–defined categories of farmland exist within Placer County:

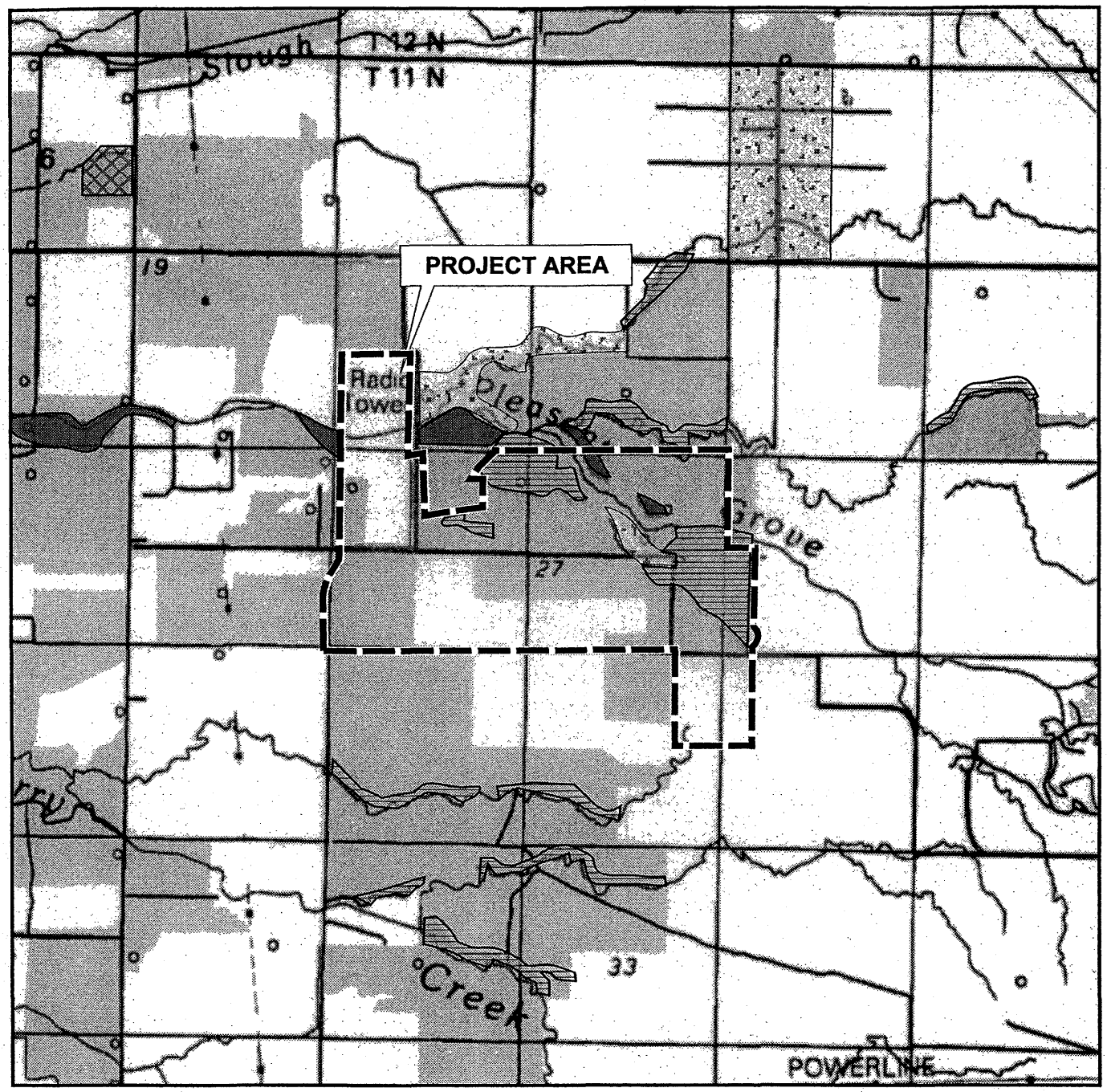
- Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance: Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- Unique Farmland: Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. (AgResource Solutions and North Fork Associates, 2002)

The majority of farmland occurring within Placer County is Farmland of Local Importance with approximately 62.3 percent of farmland and 37.3 percent of land under this category. Smaller percentages of Prime Farmland, Farmland of Statewide Importance and Unique Farmland occur within Placer County. Table 3-1 identifies the acreages of important farmland within Placer County from 1992 through 2000.

The data presented above indicate that areas of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland in Placer County decreased from 1992 to 1998 and then slightly increased from 1998 to 2000. During the same period, areas of Farmland of Local Importance in Placer County increased slightly from 1992 to 1998 and then decreased from 1998 to 2000. In addition, during the same period, the total agricultural area within Placer County decreased. The decline in important farmland has been widely attributed to the significant urbanization of south and western Placer County converting agricultural lands to urban use (AgResource Solutions and North Fork Associates, 2002). The majority of growth over the past twenty years has occurred in the cities of Roseville and Rocklin, with more recent growth noted in the City of Lincoln (AgResource Solutions and North Fork Associates, 2002). Growth projections for Placer County indicate future significant growth, including the proposed Placer Vineyards Project and potential future development of the West Roseville Specific Plan area and the Memorandum of Understanding (MOU) between the City of Roseville and Placer County area. It is anticipated that additional losses of agricultural and important farmland areas would be experienced as further development and growth continues in Placer County.

The project area is currently used for agricultural purposes and includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance designated by the Farmland Mapping and Monitoring Program of the California Resources Agency (1999). Approximately 5 percent of the project area is designated as Prime Farmland, 20 percent is designated as Farmland of Statewide Importance, 60 percent is Unique Farmland, and 10 percent is Farmland of Local Importance. The farmland occurring within the project area is predominately used for rice cultivation, with approximately 90 percent (1,350 acres) used for rice cultivation and approximately 10 percent (150 acres) used for grazing grassland. Areas of important farmland occurring within the project area are shown on Figure 3-2.

The development of the project could convert up to approximately 75 acres of Prime Farmland, approximately 300 acres of Farmland of Statewide Importance, approximately 900 acres of Unique Farmland, and approximately 150 acres of Farmland of Local Importance to other uses, primarily open space within Placer County. This represents a loss of approximately 0.8 percent of Prime Farmland, approximately 5.6 percent of Farmland of Statewide Importance, approximately 3.8 percent of Unique Farmland, and approximately 0.1 percent of Farmland of Local Importance. Although it may be possible that adjacent landowners with existing farming operations would consider portions of the site to be viable for rice farming or grazing, as an extension of their existing operations, it is likely that some remaining areas would not be suitable for agricultural use.



Source: Department of Conservation, 1998. Placer County Important Farmland Map.

LEGEND

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Farmland of Local Importance
- Urban and Built-up Land
- Other Land

N

2000 0 4000

Approximate Scale in Feet

Figure 3-2
IMPORTANT FARMLAND AREAS

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Table 3-1
Important Farmland, Placer County

Category	1992			1994			1996			1998			2000		
	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA
Prime Farmland	10,523	5.5	1.1	10,458	5.5	1.1	9,867	5.3	1.0	9,750	5.3	1.0	9,901	5.5	1.0
Farmland of Statewide Importance	5,546	2.9	0.6	5,608	3.0	0.6	5,546	3.0	0.6	5,196	2.8	0.5	5,312	2.9	0.6
Unique Farmland	23,975	12.6	2.5	23,848	12.6	2.5	23,300	12.5	2.4	22,726	12.4	2.4	23,616	13.1	2.5
Farmland of Local Importance	113,464	59.8	11.8	113,505	60.0	11.8	114,271	61.2	11.9	114,453	62.3	11.9	111,987	62.1	11.7
Total Farmland	**189,805**			**189,272**			**186,670**			**183,820**			**180,472**		
Total Area	**964,140**			**960,090[a]**			**960,090**			**960,090**			**960,090**		

Source: California Department of Conservation, Division of Land Resource Protection, 2002.

Notes:

TF Total farmland within Placer County.

TA Total area within Placer County.

[a] Total area under the jurisdiction of Placer County declines from 1992 to 1996 due to annexations by the Cities of Rocklin and Roseville.

Although the percentage of important farmland in Placer County that could be lost as a result of the proposed project appears fairly small, this is regarded as a potentially significant impact, because important farmland in Placer County is currently declining and is under pressure from future developments. Given the retention requirements of the proposed project, no feasible mitigation has been identified to reduce this potential impact to a less than significant level. Therefore, this impact is considered to be potentially significant and unavoidable and will be discussed in greater detail in the focused EIR.

b) Conflict with existing zoning, or a Williamson Act Contract?

Zoning for Agricultural Uses

The project area lies within Placer County. As presented in Section 3.9, Land Use and Planning, the project area is designated Agriculture in the Placer County General Plan, and is zoned Farming and "Minimum Building Site as Shown on Map" (F-B-X). The proposed use of the site as a retention basin is permitted under its current land use designation and zoning. The project area is predominantly agricultural, with most of the area used for rice farming. The land uses surrounding the site are predominantly agricultural (rice farming to the south and west and row crops/grazing to the north and east), residential to the northeast, and water courses/wetland areas and riparian habitat along the upstream and downstream portions of Pleasant Grove Creek outside the site boundaries.

The City of Roseville has an option to purchase the Reason Farms site and would purchase the southwestern portion of the project area currently under ownership by a separate entity, to construct the proposed project. No goals or policies relating to agricultural use were identified within the City of Roseville's General Plan, as this area lies outside of the Roseville city limits. Once purchased, the project area would become unincorporated City property subject to a management policy developed consistent with the project objectives.

Several goals and policies relating to agricultural use were identified within Placer County's General Plan (Appendix A). An objective relating to agricultural land use was also identified within the Placer Legacy Open Space and Agricultural Conservation Program. These goals, policies, and objective are summarized below and the full text is provided in Appendix A.

Placer County's General Plan Goals 1H, 7A and 7B, Policies 1H1, 1H5, 1H6, 7A1, 7A2, 7A3, 7A4, and 7A13. Maintain agricultural uses and require development with or adjacent to designated agricultural areas to incorporate design, construction and maintenance techniques that protect agricultural use. A buffer or setback shall be required for new non-agricultural development immediately adjacent to agricultural lands.

Placer Legacy Open Space and Agricultural Conservation Program Objective. Maintain a viable agricultural segment of the economy.

The development of the retention basin would result in the project area being used for the retention of flood waters. This use is compatible with existing Placer County zoning. Although it may be possible that adjacent landowners with existing farming operations would consider portions of the site to be viable for rice farming or grazing, as an extension of their existing operations, it is likely that some remaining areas would not be suitable for agricultural use. The current owners of the Reason Farms parcels report that continued attempts to grow row crops were unsuccessful due to the soil conditions (Amarel, 2002).

Williamson Act Contract

The California Land Conservation Act 1965, Section 51200 et seq. of the California Government Code, commonly referred to as the "Williamson Act," enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of ten years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act 1971. (AgResource Solutions and North Fork Associates, 2002)

In 1998, the Williamson Act's farmland security zone provisions were enacted with the passage of Senate Bill 1182 (Costa, Chapter 353, Statutes of 1998). This sub-program, called the "Super Williamson Act," enables agricultural landowners to enter into contracts with the County for 20-year increments with an additional 35 percent tax benefit over and above the standard Williamson Act contract. (AgResource Solutions and North Fork Associates, 2002)

The Williamson Act is implemented in Placer County according to the provisions of the Administrative Rules for Agricultural and Open Space Preserves. The Placer County Agricultural and Open Space Preserve Program was established in accordance with the Williamson Act to protect agricultural lands for the continued production of agricultural commodities, and to protect certain other lands devoted to open space uses. There are currently no provisions for the Super Williamson Act within the County's Administrative Rules for Agricultural and Open Space Preserves. (AgResource Solutions and North Fork Associates, 2002)

To be eligible for a Williamson Act contract, a site must satisfy the following requirements:

- Have a total area of 100 acres;
- Parcels should be adjacent to others subject to the contract so that the total area under contract is 100 acres or more; and
- Parcels should be located in an area with unique agricultural enterprises, where the establishment of an agricultural preserve with a total area of less than 100 acres is in public interest and consistent with Placer County's General Plan. (AgResource Solutions and North Fork Associates, 2002)

Placer County also requires that sites be developed with an existing commercial agricultural operation engaged in the active production of an agricultural commodity. In addition, Placer County's Administrative Rules provide opportunity for protection of certain non-agricultural open space lands that the General Plan classifies as desirable open space or environmentally sensitive, and other lands with environmental characteristics determined by the Board of Supervisors to be of high value to the current and future residents of Placer County. (AgResource Solutions and North Fork Associates, 2002)

Williamson Act areas enrolled within Placer County have been declining over the past 20 years following a significant increase of areas enrolled during the first decade of the Act's introduction. The most recent data (collected in 2000) indicated that 30.3 percent of farmland and 4.4 percent of the total area of Placer County were placed under active contracts. Table 3-2 presents the historical data for Williamson Act contract areas in Placer County from 1970 to 2000.

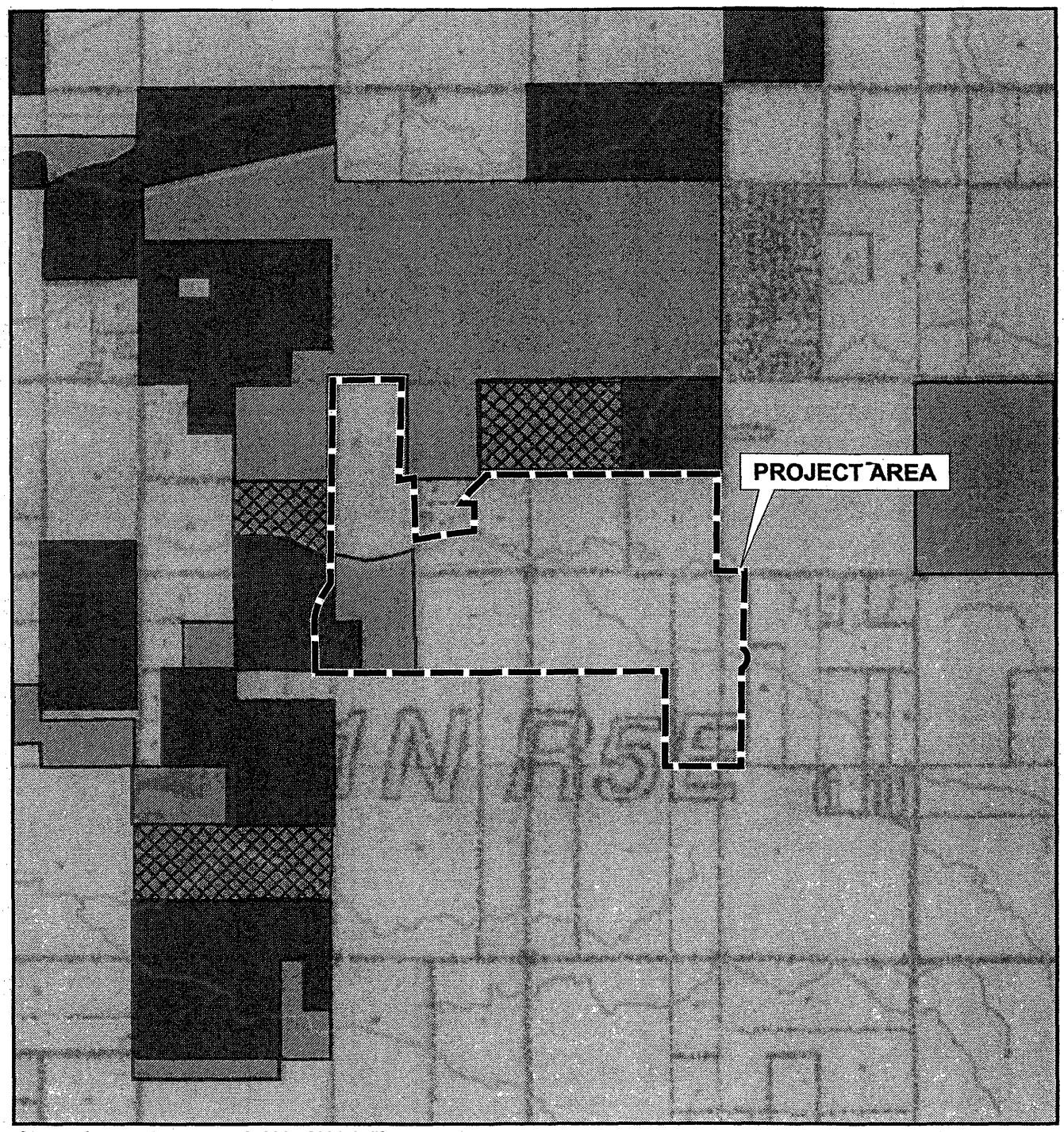
The majority of the project area is not subject to the Williamson Act, except for the southwestern portion including portions of parcels 17-010-033 and 17-090-028 (see Figure 3-3). This area is under contract (No. 536) and is currently active. It includes both Prime Farmland and Non-Prime Farmland and covers an area of approximately 170 acres within the project area. The adjacent areas to the northwest and southwest of the area under contract are also subject to the Williamson Act; however, they are under separate contracts. These adjacent areas are located outside of the project area.

The impact of the proposed project on Williamson Act areas is considered to be potentially significant, because farming may not continue in this area. However, this impact can be reduced to a less than significant level with the implementation of Mitigation Measure A-1.

Mitigation Measure A-1

Preserve the southwestern portion of the project area under an Open Space Preserve Contract in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserves for a period of twenty years.

This mitigation measure would reduce the impact of the loss of the Williamson Act contract area to a less than significant level, because, although farming would not continue, the area would be preserved as Public Open Space in accordance with Placer County's Administrative Rules for Agricultural and Open Space Preserve. The Administrative Rules implement the provisions of the Williamson Act within the County. Therefore, although there would be a loss of agricultural land within Placer County, the Williamson Act lands within the retention basin would be retained as Public Open Space and would provide opportunities for passive recreation and biological preservation, enhancement, and restoration, consistent with Placer County's Williamson Act Contract Administrative Rules.



Source: County of Placer, 2002. 2001-2001 California Land Conservation Act Enrollment Map.

LEGEND

- Prior Non-Renewal Williamson Act Contract
- Open (Non-Prime Farmland) Williamson Act Contract
- Prime Farmland Williamson Act Contract

N

2000 0 4000

Approximate Scale in Feet

Figure 3-3
WILLIAMSON ACT CONTRACT AREAS

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

6/10/02 vsa \43-00067030.00\F3-3_williamson act.cdr

Table 3-2
Williamson Act Contract Areas Within Placer County

Williamson Act Contract	1970			1980			1990			2000		
	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA	Acreage	% TF	% TA
Active	18,695	8.9	1.9	53,230	28.4	5.5	44,058	27.6	4.6	42,244	30.3	4.4
Non-Renewal	0	0	0	5,273	2.8	0.5	19,251	12.1	2.0	3,308	2.4	0.3
Expired	0	0	0	0	0	0	6,536	4.1	0.7	32,262	23.1	3.4
Total Farmland	**209,235[a]**			**187,199[a]**			**159,749[a]**			**139,587[b]**		
Total Area	**960,090**			**960,090**			**960,090**			**960,090**		

Source: AgResource Solutions and North Fork and Associates, 2002.

Notes:

[a] Figures calculated from acreages given for 1969, 1982, and 1997.
[b] Acreage listed is for 1997 as acreage not available for 2000.
TF Total Farmland
TA Total Area

c) Involve other changes that could result in conversion of farmland to non-agricultural use?

The proposed project could facilitate the development of surrounding areas, because it includes capacity for retention of stormwater/flood waters generated from future growth in the West Roseville Specific Plan area and MOU area (see Figure 2-3). If developed, these areas would result in the conversion of Prime Farmland, Farmland of Statewide Importance, or Farmland of Local Importance. Approximately 0.3 percent of Prime Farmland and 2.8 percent of Farmland of Local Importance within Placer County could potentially be lost if the West Roseville Specific Plan area were developed. Approximately 2.1 percent of additional Farmland of Local Importance within Placer County could potentially be lost if the remainder of the MOU area were developed.

Because the development of the retention basin could facilitate the development of the West Roseville Specific Plan and the MOU areas through the provision of retention storage for flood waters generated in these areas, the proposed project could result in conversion of surrounding areas from agricultural land use to other land uses. This is a potentially significant and unavoidable impact of the proposed project, and is discussed in more detail in Section 3.17 and subject to further analysis in the focused EIR.

Conclusion

The development of the project would:

- convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use and is considered to be a potentially significant and unavoidable impact;

- conflict with existing zoning for agricultural use or a Williamson Act contract and is considered to be a potentially significant impact. The implementation of Mitigation Measure A-1 would reduce this impact to a less than significant level; and

- could result in the conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use and is considered to be a potentially significant and unavoidable impact.

This conversion of farmland requires further analysis and warrants carrying forward to the focused EIR.

References

AgResource Solutions and North Fork Associates. 2002. Western Placer County Agricultural Land Assessment and Agricultural Land Conservation Evaluation Criteria. Prepared for the Placer County Planning Department. January 3, 2002.

Amarel, Robert. 2002. Owner of Reason Farms. Personal Communication with J. Becher and D. Heick of URS Corporation, May 14, 2002.

California Department of Conservation. Placer County Acreage Summaries, 1992, 1994, 1996. www.consrv.ca.gov. May 2002.

California Department of Conservation. 2002. Placer County Land Conversion Tables, 1996-1998, 1998-2000. www.consrv.ca.gov. May 2002.

California Department of Conservation. 1999. Placer County Important Farmland 1998 Map.

City of Roseville. 1992. General Plan. City of Roseville Planning Department, November 18, 1992.

Placer County. 2002. County of Placer, Assessor Department, 2001-2002 California Land Conservation Act Enrollment Map.

Placer County, Crawford Multari & Starr, DKS Associates, Psomas and Associates, Jones & Stokes Associates, Recht Hausrath & Associates and J. Laurence Mintier & Associates. 1994. Placer County General Plan. Placer County, August 16, 1994.

Placer Legacy (Placer Legacy Open Space and Agricultural Conservation Program). 2001. Natural Community Conservation Planning Agreement, an understanding by and among: the County of Placer; the California Department of Fish and Game; the United States Fish and Wildlife Service; and the National Marine Fisheries Service. September 10, 2001.

Rosasco, George. 2002. Placer County Planning Department. Personal communication with J. Becher of URS Corporation, May 14, 2002.

3.3 AIR QUALITY

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	✓			
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	✓		-	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	✓			
d) Expose sensitive receptors to substantial pollutant concentrations?		✓		
e) Create objectionable odors affecting a substantial number of people?				✓

a) Conflict with or obstruct implementation of the applicable air quality plan?

The proposed project lies within the Sacramento Valley Air Basin (SVAB). This region is in compliance with the national ambient air quality standards for all pollutants except ozone (O_3) and is in compliance with state ambient air quality standards except for O_3 and respirable particulate matter (PM_{10}). The region was redesignated as being in attainment for the national 8-hour carbon monoxide (CO) standard in 1998. Federal and state regulations require that air quality plans be developed to show how a non-attainment region will achieve attainment and how a recently redesignated region will maintain improved air quality conditions. Any new project must be consistent with the objectives of these plans.

Placer County has developed an Air Quality Attainment Plan (AQAP) outlining strategies for achieving the state ozone ambient standard. The proposed project is not included in the most recent growth projections of either Placer County or the City of Roseville. It would accommodate retention requirements of some existing and entitled projects within the City of Roseville, and the approved North Rocklin Annexation Area (Sunset Ranchos Project). It could also induce substantial growth as a result of its accommodation of potential development not considered in any current plans: the proposed West Roseville Specific Plan, the potential future development of the remainder of the MOU area, and

additional treatment capacity of the Pleasant Grove Wastewater Treatment Plant beyond that required for the West Roseville Specific Plan and the remainder of the MOU area. (This is discussed in more detail in Section 3.12, Population and Housing and in Section 3.17, Mandatory Findings of Significance.)

Emissions from construction and operation of the proposed project were calculated to determine the proposed project's compliance with air quality standards. This analysis, with a discussion of the relevant significance thresholds, is presented in detail in (b), below. The construction of the project is expected to generate short-term construction-related emissions that exceed the significance thresholds for ozone precursor emissions and PM_{10}. Mitigation identified in (b), below, would reduce these emissions considerably, but not to a level that would be less than significant. Exceedance of these thresholds indicated that the construction activities would conflict with Placer County's AQAP during project construction.

Additionally, the proposed project would indirectly accommodate growth not included in the AQAP, the logical result of which would increase emissions of criteria pollutants. While these future projects accommodated by the proposed project would undergo separate environmental review, and require their own mitigation measures to reduce air quality impacts, these impacts could also conflict with the AQAP, depending on the timing of such projects relative to their inclusion in future AQAPs.

b) Violate an air quality standard or contribute substantially to an existing or projected air quality violation?

The federal and state governments have each established their own ambient air quality standards. The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) in terms of allowed ambient concentrations for criteria pollutants under the provisions of the Clean Air Act. Table 3-3 summarizes the NAAQS for O_3, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), CO, nitrogen dioxide (NO_2), lead (Pb), and sulfur dioxide (SO_2).

In California, the California Air Resources Board (CARB), which is part of the California Environmental Protection Agency, has promulgated more stringent ambient air quality standards for O_3, PM_{10}, CO, NO_2, SO_2, and Pb. CARB has also developed standards for sulfates and hydrogen sulfide as shown on Table 3-3. CARB has delegated authority to enforce the air quality standards to local air pollution control districts. The agency with local jurisdiction in the City of Roseville is the Placer County Air Pollution Control District (PCAPCD). The PCAPCD regulates air quality through its permit authority over most stationary emissions sources and its planning and review activities.

Table 3-3
Federal and California Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary [a]	State
Ozone (O_3)	1 Hour	0.12 ppm	0.09 ppm
	8 Hours	0.08 ppm	NA
PM_{10}	24 Hours	150 $\mu g/m^3$	50 $\mu g/m^3$
	Annual Geometric Mean	NA	30 $\mu g/m^3$
	Annual Average	50 $\mu g/m^3$	NA
$PM_{2.5}$	24 Hours	65 $\mu g/m^3$	NA
	Annual Average	15 $\mu g/m^3$	NA
Carbon Monoxide (CO)	1 Hour	35 ppm	20 ppm
	8 Hours	9 ppm	9.0 ppm
	8 Hour (Lake Tahoe)	NA	6 ppm
Nitrogen Dioxide (NO_2)	1 Hour	NA	0.25 ppm
	Annual Average	0.053 ppm	NA
Lead (Pb)	30 days	NA	1.5 $\mu g/m^3$
	Calendar Quarter	1.5 $\mu g/m^3$	NA
Sulfur Dioxide (SO_2)	1 Hour	NA	0.25 ppm
	3 Hours	0.5 ppm [b]	NA
	24 Hours	NA	0.04 ppm
	Annual Average	0.03 ppm	NA
Sulfates	24 Hours	NA	24 $\mu g/m^3$
Hydrogen Sulfide	1 Hour	NA	0.03 ppm

Source: California Air Resources Board web site.

Notes:

[a] Primary NAAQS are established at levels necessary to protect the public health.

[b] Secondary NAAQS specify the levels of air pollution determined appropriate to protect the public welfare.

PCAPCD has developed significance thresholds for any project within Placer County, including the City of Roseville. The air quality impacts of a project are considered significant if any of the following are true:

- Construction or operation of the project results in emissions that exceed 82 lb/day for either ozone precursors (nitrogen oxides [NO_X]) or reactive organic compounds ([ROG], PM_{10}, or sulfur oxides [SO_X]), or 550 lb/day for CO;
- Project emissions lead to exceedances of the federal or state ambient air quality standards. In instances where existing concentrations already exceed the standard, then an emission increase exceeding five percent of the applicable standards would be significant; or
- The proposed project conflicts with the goals and policies in the regional air quality attainment plan, state implementation plan, or a city general plan.

At the city level, Roseville has developed a General Plan with an Air Quality Element. This element contains goals, policies, and implementation measures pertaining to air quality in the City and encourages cooperation between agencies involved in improving regional air quality. These policies and measures are divided into five categories that affect air quality: (1) transportation, (2) land use, (3) energy-conservation, (4) hazardous material, and (5) general. The Air Quality Element does not reference significant thresholds as the City must comply with the significance thresholds developed by the PCAPCD.

The potential short-term emissions from the construction activities were calculated and compared to the above emission thresholds. The analysis was based on guidelines and emission factors from the EPA's AP-42 (5th Edition), Sacramento Metropolitan Air Quality Management District (SMAQMD) Draft CEQA Guidelines (September 2001), Bay Area Air Quality Management (BAAQMD) CEQA Guidelines (December 1999) and CARB's Emfac2000 emission factor model. The construction planned for the project consists of three major activities for the North and South basins:

1. excavation and grading of the bypass and low-flow channels,
2. fill and compaction of the embankments, and
3. construction of the inlet and outlet structures.

As a worst case, the analysis assumed that all three groups of activities could occur on the same day and that the North and South basins would be constructed concurrently. Existing facilities would also be demolished and removed off site and an aggregate base rock access road would be constructed on the embankments. However, these two activities are not expected to take place on the same day that the construction is most active.

The worst-case construction emissions were based on the following data:

- Work to start in 2004
- Greatest number of Worker Vehicles in one day: 65
- Construction equipment used on the most active day: see Table 3-4.

Table 3-4
Equipment Usage on the Most Active Day

Type of Equipment	Maximum Equipment Usage Per Day
Scraper	15
Grader	2
Bulldozer	6
Water Truck	4
Excavator	2
Compactor	4
Concrete Mixer	15 round trips/day
Trucks/Fork Lift	4

- Maximum amount of material excavated: 18,000 cubic yards/day
- Maximum amount of material used for embankment: 18,000 cubic yards/day

Using the above information, the total exhaust and fugitive dust emissions during construction were calculated and are shown in Tables 3-5 and 3-6.

Table 3-5
Exhaust Emissions (lb/day)

Source	ROG	NO_X	PM_{10}	CO	SO_X
Vehicle Exhaust from Worker Trips	3.15	2.31	0.11[a]	27.14	0[b]
Equipment Exhaust	117.9	870	33.8	873	183

Source: Worker vehicle emission factors from on Emfac2000 v2.2 Construction equipment emission factors from SMAQMD Draft CEQA Guidelines, September 2001.

Notes:
[a] Worker vehicle PM_{10} emissions include tire and brake wear.
[b] Worker vehicle SO_X emissions assumed negligible given the small number of vehicle trips.

Table 3-6
Fugitive Dust (lb/day)

	PM_{10}	
Source	Uncontrolled	50% Control
Excavation	1,062	531
Embankments	751	375
Unpaved Roads	15.9	7.95
Total	1,829	914

Source: Emission factors based on EPA's AP-42, 5th Edition.

Tables 3-5 and 3-6 show that emissions of all criteria pollutants are predicted to exceed the significance thresholds of 82 lb/day for ROG, NO_X, PM_{10}, and SO_X, and 550 lb/day for CO on the worst day. As Table 3-6 demonstrates, even when taking into account watering active sites twice daily (which can generally achieve 50 percent reduction in emissions), the PM_{10} emissions would be well above the thresholds. Watering active sites combined with a rigorous set of other mitigation measures could potentially achieve a 75 percent reduction in emissions. However, for this project, this level of control is not expected to be sufficient to reduce impacts to less than significant levels. Therefore, the construction activities are expected to have a significant short-term impact on air quality even if mitigation measures are applied.

Once construction is complete, emissions from the operation of the basin would mainly come from maintenance vehicles traveling on the newly constructed access roads. The frequency of maintenance vehicle trips to the area would much be less than the worker vehicle trips during construction. As shown in Table 3-5, the emissions from the construction worker vehicle trips alone were less than the significance thresholds and so the emissions from maintenance vehicle trips during operations would also be less than the thresholds. Therefore, on its own, the operation of the retention basin would have a less than significant impact on air quality.

Since uncontrolled emissions from the construction activities are expected to have a significant impact on air quality, the proposed project will prepare a Construction Emission/Dust Control Plan in accordance with PCAPCD requirements.

Mitigation Measure AQ-1

Develop and implement a Construction Emission/Dust Control Plan in accordance with the requirements of the Placer County Air Pollution Control District.

This plan shall consider the recommended mitigation measures outlined below. At a minimum, the Plan shall contain the first six measures.

1. The Applicant shall submit to the PCAPCD and receive approval of the Construction Emission / Dust Control Plan prior to groundbreaking.
2. Construction equipment exhaust emissions shall not exceed PCAPCD District Rule 202 Visible Emission limitations.
3. The prime contractor shall submit to the PCAPCD a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment, 50 horsepower or greater, that will be used 40 or more hours on the construction project. PCAPCD personnel, with assistance from the California Air Resources Board, would conduct initial Visible Emission Evaluations of all heavy-duty equipment on the inventory list.
4. An enforcement plan shall be established to evaluate weekly project-related on and-off-road heavy-duty vehicle engine emission opacities, using standards as defined in California Code of Regulations,

Title 13, Sections 2180–2194. An Environmental Coordinator who is CARB-certified to perform Visible Emissions Evaluations (VEE) shall routinely evaluate project-related off-road and heavy duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified and the equipment must be repaired within 72 hours.

5. At least 20 percent of the heavy-duty off-road equipment included in the inventory be powered by CARB certified off-road engines, as follows:

175 hp	750 hp	1996 and newer engines
100 hp	174 hp	1997 and newer engines
50 hp	99 hp	1998 and newer engines

In lieu of or in addition to this requirement, an applicant can use other measures to reduce particulate matter and nitrogen oxide emissions from their project through the use of emulsified diesel fuel and/or particulate matter traps. PCAPCD should be contacted to discuss these alternative measures.

6. Open burning of removed vegetation is not allowed.
7. Clean earth moving construction equipment with water once per day.
8. Water all active construction areas at least twice daily.
9. Cover all trucks hauling loose materials or maintain at least 2 feet of freeboard
10. Spread soil stabilizers on unpaved roads and employee/equipment parking areas.
11. Apply soil stabilizers to inactive construction areas (previously graded areas inactive for 96 hours or more).
12. Employ construction activity management techniques, such as reducing the number of pieces used simultaneously; increasing the distance between emission sources; reducing or changing the hours of construction; and scheduling activity during off-peak hours.
13. Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less.
14. Suspend all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.
15. Install wheel washers or wash all trucks and equipment leaving the site.
16. Minimize idling time of any vehicle or equipment to 10 minutes.
17. Use low sulfur fuel for stationary construction equipment.
18. Minimize construction activities near the adjacent residences.

These mitigation measures would be in place to reduce the proposed project's criteria pollutant emissions, but they are not expected to be sufficient to reduce impacts to less than significant levels.

c) Result in a cumulatively considerable net increase of pollutant for which the project region is non-attainment under the federal and state ambient air quality standards?

Since the proposed project alone is expected to generate significant levels of non-attainment emissions (i.e., O_3 and PM_{10} emissions) during construction, as described in (b) above, the proposed project would also result in a cumulatively significant short-term increase in these non-attainment pollutants.

Additionally, the proposed project would indirectly accommodate growth, as described in (a) above, the logical result of which would increase emissions of criteria pollutants. While these future projects accommodated by the proposed project would undergo separate environmental review, and require their own mitigation measures to reduce air quality impacts, the proposed project's indirect impacts could result in a cumulatively considerable net increase of non-attainment pollutants.

d) Potentially expose sensitive receptors to substantial pollutant concentrations?

The area surrounding the retention basin is predominantly agricultural, with only four nearby residences. A small complex of residences further to the northeast on the other side of Sunset Boulevard West are located away from construction activity. During construction, the four nearby residences could be exposed to short-term concentrations of PM_{10}. These concentrations would be dependent upon the particular activity occurring near the residences, and could include creation of the South Basin bypass channel, embankment construction, or inlet/outlet construction. This nearby activity would result in only a small portion of the total projected 24-hour PM_{10} emissions affecting any one residence, due to the varied activity considered in the assumptions for worst-case PM_{10} emissions. For instance, emissions associated with construction activity on different portions of the site would not all be concentrated toward one residence, and it would be physically impossible to use the full complement of construction equipment in only one area. In addition, construction activities near any single residence would be temporary. Mitigation Measure AQ-1, described in (b) above, would reduce these construction impacts to a less than significant level. No significant air quality impacts to sensitive receptors would be associated with operation of the retention basin.

e) Create objectionable odors affecting a substantial number of people?

In general, odors are generated from sources that include wastewater treatment plants, composting facilities, chemical plants, and other similar facilities. Such inherently odorous sources would not be used or constructed as part of this project and therefore there would be no impact to the level of objectionable odors.

Conclusion

The development of the project would:

- conflict with or obstruct implementation of Placer County's AQAP and is considered to be a potentially significant and unavoidable impact;

- violate air quality standards of the PCAPCD and is considered to be a potentially significant impact. Mitigation would be required in the form of Mitigation Measure AQ-1;

- result in a cumulatively considerable net increase of non-attainment pollutants and is considered to a potentially significant and unavoidable impact;

- expose sensitive receptors to substantial pollutant concentrations and is considered to be potentially significant. Implementation of Mitigation Measure AQ-1 would reduce this impact to a less than significant level; and

- not contribute to objectionable odors affecting a substantial number of people.

These issues require further analysis and warrant carrying forward to the focused EIR.

References

California Air Resources Board website. www.arb.gov/ags/aaqs2.pdf.

3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		✓		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		✓		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			✓	

a) Have a substantial effect on any candidate, sensitive, or special-status species?

A list of special-status species with potential to occur in the project area was developed based on existing habitat, California Natural Diversity Data Base occurrence records (CNDDB, 2001), and a U.S. Fish and Wildlife Service species list for the Pleasant Grove and Roseville 7.5 minute quadrangle maps. Appendix B contains a list of all special-status species and their potential to occur in the project vicinity. The species discussed below include:

- State or federal threatened or endangered species with potential to occur on the site, and
- Other special-status plant and animal species that have been observed on the project site.

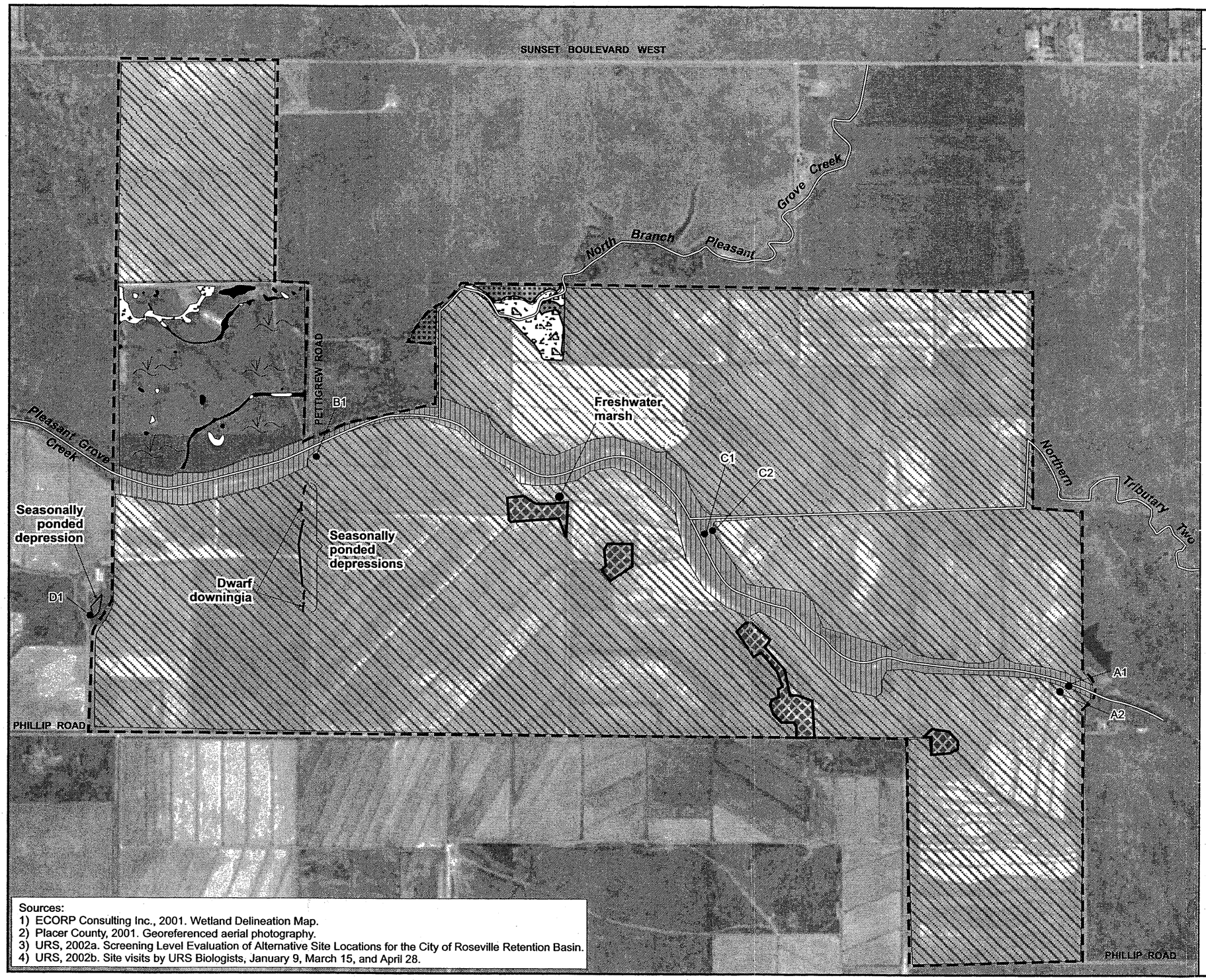
Special-status species in Appendix B are not discussed below if there is no potential for the species to occur on the project site. The reason they are not considered likely to occur on the project site is presented in Appendix B.

Table 3-7
Special-Status Species with Potential to Occur on the Retention Basin Site

Scientific Name	Common Name
Threatened or Endangered Species	
Branchinecta lynchi	vernal pool fairy shrimp
Lepidurus packardi	vernal pool tadpole shrimp
Charadrius montanus	mountain plover
Grus canadensis tabida	greater sandhill crane
Elanus leucurus	white-tailed kite
Buteo swainsoni	Swainson's hawk
Gratiola heterosepala	Boggs Lake hedge hyssop
Other Special-Status Species	
Circus cyaneus	northern harrier
Downingia pusilla	dwarf downingia
Clemmys marmorata	northwestern pond turtle

The potential for the proposed project to affect these species is discussed below.

Habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp is present in seasonally ponded depressions within the South Basin area (Figure 3-4). Therefore, these species may be present. Construction of the South Basin could alter this habitat and may extirpate these species if they are present. Therefore, the proposed project may significantly affect them. Approximately 0.39 acre of seasonally ponded depression habitat in the South Basin would be directly impacted due to inundation. Habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp is also present just west of the south basin, outside of the project area, but within 250 feet of the westernmost proposed embankment. Construction of an embankment within 250 feet of this seasonally ponded depression could indirectly alter this habitat, and therefore impact vernal pool fairy shrimp or vernal pool tadpole shrimp if they are present. Approximately 0.08 acre of seasonally ponded depression habitat would be indirectly impacted due to the construction of this embankment.



Sources:
1) ECORP Consulting Inc., 2001. Wetland Delineation Map.
2) Placer County, 2001. Georeferenced aerial photography.
3) URS, 2002a. Screening Level Evaluation of Alternative Site Locations for the City of Roseville Retention Basin.
4) URS, 2002b. Site visits by URS Biologists, January 9, March 15, and April 28.

LEGEND

HABITAT TYPES
- Annual Grassland
- Developed
- Rice Field
- Vernal Pool Grassland
- Riparian Forest

WETLAND FEATURES
- Freshwater Marsh
- Seasonally Ponded Depression
- A1 Wetland Delineation Data Point
- Seasonal Wetland
- Seasonal Swale
- Vernal Pool
- Seasonal Stream

N

1750 0 1750 3500
Scale (feet)

Figure 3-4
EXISTING BIOLOGICAL RESOURCES

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

6/11/02 vsa \43-00067030.00\F3-4_ExistBioRes_BW.cdr

Potential impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp habitat would be mitigated according to the U.S. Fish and Wildlife Service (USFWS) programmatic consultation with the Sacramento District of the U.S. Army Corps of Engineers (USFWS, 1996). Implementation of this mitigation measure would reduce potential impacts to listed vernal pool branchiopods to a less than significant level.

Mitigation Measure B-1

Mitigate direct and indirect impacts to listed vernal pool branchiopods according to USFWS (1996) Programmatic Formal Endangered Species Act Consultation for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans. This could include purchase of mitigation credits from a USFWS-approved mitigation bank or via equivalent onsite creation and/or preservation of vernal pool habitat.

Greater sandhill crane and mountain plover are both winter residents of the Central Valley that utilize grasslands and/or freshwater marshes for foraging habitat. Cranes may also forage in existing rice fields. The project would reduce the viability of actively managed rice fields and allow the area to function as passively managed seasonal wetlands and uplands. Portions of the retention basins and adjacent fields would continue to seasonally pond water and provide crane and plover foraging habitat due to the high clay content of the soils. Therefore, the conversion of rice fields to retention basins on the project site would not substantially reduce the area of foraging habitat for cranes. No grasslands or freshwater marshes would be impacted by the proposed project. Therefore, there would be no significant impact to the greater sandhill crane or mountain plover.

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures (CDFG, 1994). The retention basin site has mature trees along Pleasant Grove Creek suitable for nesting. The California Department of Fish and Game (CDFG 1994) considers dry rice land and fallow fields to be foraging habitat for Swainson's hawks. The project has the potential to convert actively managed rice fields to passively managed seasonal wetlands and uplands. Portions of the retention basins and adjacent fields would continue to pond water during some times of the year (generally winter), especially in and near the low-flow bypass channel. However, the retention basins would likely be dry for a large portion of most years. It is anticipated that the retention basin would be completely flooded on an infrequent basis (approximately once every 15 to 30 years).

The CDFG considers loss of nesting trees and loss of foraging habitat within a 10-mile radius of an active nest as an impact to this species. Nests are considered active if they have been used at least once during the last five years (CDFG, 1994). There have been at least two active Swainson's hawk nests within ten miles of the project site within the last five years (CNDDB, 2001; Miriam Green Associates, 2000). The proposed project would increase the seasonal availability of Swainson's hawk foraging habitat and would not reduce the overall area of habitat available to hawks as foraging habitat. Therefore, the proposed

project would not have a significant impact on Swainson's hawk foraging habitat. White-tailed kites have nesting and foraging habitat needs similar to Swainson's hawks, and have also been recorded nesting within five miles of the project site (CNDDB, 2001) in the past five years. The northern harrier has also been observed on the project site. The proposed project would not have a significant impact on foraging habitat for white-tailed kites or northern harriers, but the proposed project could have a significant effect on nesting raptors, including Swainson's hawks, if the nests are located within a 0.5-mile radius of the project site.

The following mitigation measure is required for potential impacts to nesting raptors, including white-tailed kite, northern harrier, and Swainson's hawk:

Mitigation Measure B-2

Conduct pre-construction surveys for all raptor nests including white-tailed kite and Swainson's hawk. Surveys will be conducted within ½ mile of the project area, and no new disturbances, such as heavy equipment operation, will be initiated within ½ mile of an active nest between March 1 and September 15. If an active nest is located and construction occurs within ½ mile of it, the nest will be monitored by a qualified biologist to ensure that abandonment does not occur.

This mitigation measure will reduce potential project impacts to nesting raptors, including Swainson's hawks, to a less than significant level.

Boggs Lake hedge-hyssop is endemic to vernal pool habitats with clay soils, and has been recorded in 13 Central Valley counties, including Placer County. Its blooming period is April to June. URS biologists searched vernal pools and seasonal wetland habitat for Boggs Lake hedge-hyssop on April 23, 2002 and no plants were observed. Therefore, the proposed project will not affect Boggs Lake hedge-hyssop.

Dwarf downingia typically occurs in vernal pools with low vegetative cover. URS biologists observed dwarf downingia on the western side of project site within two seasonally ponded depressions (tire tracks) located along a north-south access road. The location of these populations was recorded with a GPS receiver and are mapped on Figure 3-4. These dwarf downingia populations could be adversely affected by periodic inundation of the South Basin. Loss of these rare plant populations would be a potentially significant impact. However, implementation of the proposed mitigation for vernal pool fairy shrimp and vernal pool tadpole shrimp (Mitigation Measure B-1) would preserve vernal pool habitat and create additional vernal pool habitat, which would reduce the dwarf downingia impact to a less than significant level.

The northwestern pond turtle occurs in ponds and streams in grasslands, meadows, wetlands, woodlands, forests, and brushlands, and has been observed basking on emergent ground within the Pleasant Grove Creek channel. There would be no permanent impacts (discussed below) to the main branch of Pleasant Grove Creek where suitable habitat exists on site for turtles. The project is designed to avoid impacts to

existing riparian habitat as much as possible. In addition to design features, no construction equipment would be allowed within Pleasant Grove Creek, except as needed for channel excavation at inlet/outlet structures (discussed below). Silt fences would be installed at the top of creek banks within the construction area to trap sediment, as well as to discourage entry by personnel and equipment. Prior to commencing construction, sensitive habitat areas such as creeks, wetlands, and vernal pools both within and adjacent to the work area would be enclosed in construction or silt fences to prohibit access, as described in Section 2.5.7.1. These features of the project should avoid any impacts to the northwestern pond turtle.

b) Have a substantial adverse effect on any riparian habitat or other identified natural community?

URS biologists identified potential impacts to riparian habitat and other sensitive natural communities for the City of Roseville as part of a screening level evaluation (URS/PWA, 2002) and during site visits on January 9, March 15, and April 23, 2002. A well-developed riparian forest comprised primarily of valley oaks (*Quercus lobata*), sandbar willows (*Salix exigua*), and Fremont cottonwoods (*Populus fremontii*) borders the main branch of Pleasant Grove Creek (Figure 3-4). The project would protect these habitats except for encroachments at the inlet and outlet structures associated with the retention basins. North and South basin embankments would be set back approximately 100 feet from the ordinary high water mark of the creek or at least 70 feet from the top of the bank, whichever provides the greatest offset from the top of the bank. The bypass channel diversion and outlet structures would be located away from the center section of Pleasant Grove Creek, where the highest quality riparian woodland exists. They would instead be located in the eastern and western ends of the project site where the riparian corridor narrows.

At the location of the new Northern Tributary Two outlet structure on the north bank of Pleasant Grove Creek, approximately 0.07 acre of riparian habitat would be permanently impacted and 0.03 acre would be temporarily impacted by construction activities. On the south bank of Pleasant Grove Creek, the construction of the bypass channel diversion structure would permanently impact approximately 0.05 acre and temporarily impact 0.11 acre of riparian habitat. Also on the south bank, the construction of the bypass channel outlet structure would permanently impact 0.02 acre and temporarily impact 0.03 acre of riparian habitat. The filling of existing channelized Northern Tributary Two would permanently impact approximately 0.18 acre of riparian habitat.

Table 3-8
Area of Impacts to Riparian Habitat (in Acres)

Location	Permanent	Temporary
New Northern Tributary Two Outfall	0.07	0.03
Existing Northern Tributary Two Channel	0.18	-
South Basin Bypass Channel Outlet	0.02	0.03
South Basin Bypass Channel Diversion	0.05	0.11
Total	**0.32**	**0.17**

The proposed project will create approximately 6.75 acres of habitat suitable for colonization of riparian trees and shrubs within the South Basin bypass channel. The existing Northern Tributary Two is a man-made channelized ditch. The project proposes to restore the approximate historic natural channel to a more natural and sinuous stream course with an adjacent floodplain. Approximately 51.93 acres of habitat will be created within the swale of the new Northern Tributary Two that will be suitable for colonization of riparian trees and shrubs. The swale would also be suitable for plantings of valley oaks, interior live oaks, Fremont cottonwood, and willows that may be required in accordance with the City of Roseville Tree Preservation Ordinance, as discussed in (e) below. The permanent loss of 0.13 acre of riparian habitat would be compensated for on site by the creation of 58.68 acres of riparian habitat along the South Basin bypass channel and the new Northern Tributary Two low-flow channels. The ratio of lost riparian habitat to newly created riparian habitat in the project is nearly 1:400. This would reduce impacts to riparian habitat to a less than significant impact.

Table 3-9
Acres of Riparian Habitat that Would be Created as a Result of the Project

Location	Area (acres)
South Basin Bypass Channel Low-Flow Channel	6.75
New Northern Tributary Two Low-Flow Channel	51.93
Total	**58.68**

Temporary impacts to 0.07 acre of riparian habitat will be offset by the following mitigation measure:

Mitigation Measure B-3

Seed temporarily disturbed or exposed riparian areas at the conclusion of construction with native plant species.

Implementation of these mitigation measures would reduce potential impacts to riparian habitats to less than significant levels.

c) Have a substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means?

A wetland delineation of the entire Reason Farms property was conducted on July 24, 2001 by ECORP (2001b). URS biologists conducted a project-specific wetland delineation on April 23, 2002 that specifically addressed the proposed project footprint including additional property west of Reason Farms. The results of both delineations are shown in Figure 3-4. The area of existing waters of the U.S. on the project site have been combined for the two delineations and presented in Table 3-10.

The project site is dominated by rice fields, which are non-jurisdictional wetlands. The jurisdictional waters located on the site are as follows:

- Pleasant Grove Creek, a perennial stream, and associated riparian wetlands,
- Northern Tributary Two, a channelized tributary to Pleasant Grove Creek,
- A freshwater marsh on the northern boundary of the site and one within the area of the south basin,
- Seasonal wetlands, seasonal swale, and vernal pools in the southern half of the northwestern parcel of the site, and
- Seasonally ponded depressions in the southwest corner of the project site.

Table 3-10
Existing Area of Waters of the U.S. on the Retention Basin Site

Wetland Type	Acres
Perennial Stream [a]	53.35
Freshwater Marsh	13.23
Seasonal Wetland	2.36
Seasonal Swale	1.57
Vernal Pool	0.94
Total	**71.44**

Note:
[a] includes adjacent riparian wetlands

The project is designed to avoid impacts to existing wetlands as much as possible. In addition to design features, no construction equipment would be allowed within Pleasant Grove Creek, except as needed for channel excavation at inlet/outlet structures (see below). Silt fences would be installed at the top of creek banks within the construction area to trap sediment, as well as to discourage entry by personnel and equipment. Prior to commencing construction, sensitive habitat areas such as creeks, wetlands, and vernal pools both within and adjacent to the work area would be enclosed in construction or silt fences to prohibit access.

Fill in jurisdictional waters on the project site would be avoided with the exception of activities associated with the following:

- Construction of the South Basin bypass channel outlet structure
- Construction of the South Basin low-flow channel diversion from Pleasant Grove Creek
- Construction of the outlet of new Northern Tributary Two on the north side of Pleasant Grove Creek
- Fill in the existing Northern Tributary Two Channel

The area of fill in wetlands and waters that would occur as a result of the proposed project, by location, is presented in Table 3-11. Approximately 0.03 acre of jurisdictional wetlands would be permanently impacted. Approximately 0.55 acre of other jurisdictional waters would be permanently impacted. Approximately 0.14 acre of jurisdictional wetlands would be temporarily impacted during construction activities. Approximately 0.03 acre of jurisdictional waters would be temporarily impacted during construction activities.

Table 3-11
Area of Impacts to Jurisdictional Waters of the U.S. (in Acres)

Location	Permanent		Temporary	
	Wetlands	Waters	Wetlands	Waters
New Northern Tributary Two Outfall	0.02	0.01	0.11	0.02
Existing Northern Tributary Two Channel	-	0.53	-	-
South Basin Bypass Channel Outlet	<0.01	0.01	0.01	0.01
South Basin Bypass Channel Diversion	0.01	-	0.02	-
Total	**0.03**	**0.55**	**0.14**	**0.03**

The proposed project would also create new jurisdictional waters on the retention basin site. The relocation of Northern Tributary Two to its original stream course would result in the creation of approximately 1.33 acres of jurisdictional waters and 2.40 acres of jurisdictional wetlands within the low-flow channel and swale. The creation of the low-flow channel in the South Basin would result in the creation of 1.12 acres of jurisdictional waters, and 6.75 acres of jurisdictional wetlands.

Table 3-12
Area of Waters of the U.S. that Would be Created as Result of the Project (in Acres)

Location	Wetlands	Other Waters
South Basin Bypass Channel Low-Flow Channel	6.75	1.12
New Northern Tributary Two Low-Flow Channel	2.40	1.33
Total	**9.15**	**2.45**

The proposed project would create approximately 2.45 acres of jurisdictional waters, which would result in the replacement of the permanently lost waters at a 1:4.6 ratio. The proposed project would create approximately 9.15 acres of jurisdictional wetlands, which would result in the replacement of permanently lost wetlands at a ratio of 1:2,288. Permanent impacts to wetlands and other waters of the U.S. as a result of the proposed project would be reduced to less than significant levels by the creation of replacement wetlands and waters on-site.

Temporary impacts to jurisdictional wetlands would be mitigated to reduce impacts to less than significant levels with the following mitigation measure:

Mitigation Measure B-3

Seed temporarily disturbed or exposed riparian areas at the conclusion of construction with native plant species.

d) Interfere substantially with the movement of fish or wildlife species or wildlife corridors, or impede the use of native wildlife nursery sites?

Three chinook salmon Evolutionary Significant Units (ESUs) and Central Valley Steelhead have designated critical habitat in the project area. All accessible tributaries of the Sacramento River are considered critical habitats. Pleasant Grove Creek and its tributaries are physically accessible to salmonids, and therefore considered Critical Habitat. However, Pleasant Grove Creek and its tributaries have only intermittent flow from late winter to early spring and the stream is reduced to isolated pools of water during summer months. Temperatures in Pleasant Grove Creek likely reach levels high enough to cause juvenile and adult salmonid mortality between the months of May and September. Therefore, salmonids are unlikely to occur in Pleasant Grove Creek and its tributaries. Potential impacts to salmonids would be less than significant because of the lack of viable spawning or migration habitat in the project site.

No native resident migratory wildlife corridors or native wildlife nursery sites exist on the site.

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

The City of Roseville Municipal Code Ordinance Section 19.66.070, Oak Tree Planting and Replacement Program, regulates removal of oak trees within the City. The removal of oak trees would be mitigated by replanting trees, as follows:

Mitigation Measure B-4

Replace oak trees in accordance with City of Roseville Tree Preservation Ordinance. To the extent possible, replacement plantings will be located on the project site, in the vicinity of the existing riparian corridor.

Impacts to oak trees would be mitigated and therefore reduced to less than significant levels by replanting trees on site, close to the creek.

f) Conflict with the provisions of an adopted or approved habitat conservation plan?

A Draft Natural Community Conservation Planning Agreement (NCCP) has been developed for southwestern Placer County that includes the land associated with the Reason Farms project site (Placer Legacy, 2001). The NCCP states that the objectives of the Placer Legacy are to:

- Maintain a viable agricultural segment of the economy;
- Conserve natural features necessary for access to a variety of outdoor recreation opportunities;
- Retain important scenic and historic areas;
- Preserve the diversity of plant and animal communities;
- Protect endangered and other special-status plant and animal species;
- Separate urban areas into distinct communities; and
- Ensure public safety. (Placer Legacy, 2001)

Goals and objectives specifically related to natural resources can be found in the Placer Legacy Open Space and Agricultural Conservation Program (Placer Legacy, 2000), as follows:

- Work with landowners to conserve and enhance degraded stream segments through streambed improvements, revegetation, and where appropriate, widening the vegetated zone within the natural floodplain and increasing the retention of surface water runoff. Protect existing high quality riparian resources and prevent degradation from urban encroachment in rural residential and suburban areas.
- Work to preserve large core areas of vernal pools with relatively undisturbed topography and hydrology. In addition, the preservation of small, undisturbed pool complexes at the edge of watersheds, particularly rare types, will help maintain biological diversity.
- Work to protect large areas of oak woodlands and associated communities of unusual biological diversity, age structure, understory component, landscape linkage, or scenic value.
- In rural residential areas, protect oak woodlands by landowner education, local conservation activities, and current land use policies.
- Protect grasslands as important components of vernal pools and oak woodland conservation.
- Coordinate with other agencies to protect Sierra Nevada resources, and watch for opportunities to swap lands of particularly high biological values as a means of protection.

The proposed project is consistent with the broad goals of the Placer Legacy NCCP in the context of biological resources (this is discussed in more detail in Section 3.9, Land Use and Planning). The project would maintain existing open space throughout the project site, and prevent future urban or residential development. However, the proposed project would presumably convert lands within project area from agricultural to seasonal wetland habitat, thus reducing the area of agricultural lands in western Placer County (this is discussed in more detail in Section 3.2, Agricultural Resources). The conversion of these lands to retention basins with low-flow channels and swales would ultimately create a more diverse plant and animal community than currently exists in the cultivated portion of the project area.

The project would conserve the existing high quality riparian habitat along the main branch of Pleasant Grove Creek, and it would also enhance Northern Tributary Two by restoring it to its approximate historic location. As part of the restoration of Northern Tributary Two, the length of the streambed and riparian wetlands would be increased, and the width of the floodplain would be increased. A small amount of riparian habitat and oak trees would be impacted by the project, but as discussed above, the mitigation proposed to offset those impacts would result in the net gain of habitat and trees. The existing area of riparian oak woodland is also highly scenic and provides a linear landscape linkage to areas east and west of the project site.

An opportunity would be created for another entity to preserve vernal pool grasslands in the northwestern parcel of the project site (although the City is not proposing to develop this parcel, the project does not propose to preserve it either). This project would promote most of the goals and policies of the Placer Legacy NCCP.

Conclusion

Development of the project would:

- have a potentially significant impact on vernal pool branchiopods and nesting raptors, including white-tailed kite, northern harrier and Swainson's hawk. Implementation of Mitigation Measures B-1 and B-2 would reduce these impacts to a less than significant level;

- have a potentially significant impact on riparian habitat. Implementation of Mitigation Measure B-3 would reduce this impact to a less than significant level;

- have a potentially significant impact on jurisdictional wetlands. Implementation of Mitigation Measure B-3 would reduce this impact to a less than significant level;

- have a less than significant impact to salmonids because of the lack of viable spawning or migration habitat in the project site. No native resident migratory wildlife corridors or native wildlife nursery sites exist on the site;

- result in the removal of oak trees. Implementation of Mitigation Measure B-4, which specifies the replacement of oak trees in accordance with the City of Roseville Tree Preservation Ordinance, would reduce this impact to a less than significant level; and

- broadly comply with the goals and policies of the Placer Legacy Program and is considered to be a less than significant impact.

Although the development of the project would result in less than significant impacts to biological resources, these issues will be carried forward to the focused EIR in support of the future 404(1)(b) alternatives analysis required for future permitting of the proposed project.

References

CDFG (California Department of Fish and Game), 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. Sacramento, CA. November 8.

CNDDB (California Natural Diversity Data Base). 2001. Occurrence records for western Placer County. California Department of Fish and Game, Natural Heritage Division, Sacramento, CA.

ECORP Consulting, Inc. 2001a. Special-Status Species Assessment for Reason Farms. Prepared for Westpark Associates and Signature Properties. July 24, 2001.

ECORP Consulting, Inc. 2001b. Wetland Delineation Map. Prepared for Westpark Associates and Signature Properties. July 24, 2001.

Miriam Green Associates. 2000. Results of Surveys for Special-Status Species in the Fiddyment/Placer 1600 Project Area, Placer County, California. Final Report. Sacramento, California. July 18, 2000.

Placer Legacy (Placer Legacy Open Space and Agricultural Conservation Program). 2001. Draft Natural Community Conservation Planning Agreement, an understanding by and among: the County of Placer; the California Department of Fish and Game; the United States Fish and Wildlife Service; and the National Marine Fisheries Service. September 10, 2001.

Placer Legacy. 2000. Placer Legacy Open Space and Agricultural Conservation Program. http://www.placer.ca.gov/planning/legacy/plegacy-finaldoc3.pdf

URS/PWA (URS Corporation and Philip Williams & Associates, Ltd.). 2002. Screening Level Evaluation of Alternative Site Locations for the City of Roseville Retention Basin. Prepared for the City of Roseville. March 8, 2002.

USFWS (U.S. Fish and Wildlife Service). 1996. Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within Jurisdiction of the Sacramento Field Office, California. Sacramento, CA. February 28, 1996.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		✓		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d) Disturb any human remains, including those interred outside of formal cemeteries?		✓		

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

An architectural history survey of the Reason Farms site was undertaken by URS Corporation for the City of Roseville during December 2001 and January 2002 (URS Corporation, 2002a). This survey was undertaken prior to the City of Roseville considering the addition of a 170-acre area to the project area to increase retention storage from 2,250 acre-feet to 2,530 acre-feet. No survey was undertaken for the additional 170-acre parcel because no built structures are present within this area. A copy of the report presenting the findings of the survey is presented in Appendix C1. The structures identified within the project area are summarized below.

A rice processing plant, two residences, a windmill and two barns were identified within the Reason Farms site. All of the structures have been identified as being built or moved to the site sine the 1950s or later, except for a dairy barn that appears to date to the late 1940s or the 1950s.

All of the structures located at the rice processing plant at 6662 Phillip Road date to the 1960s, 1970s, and 1990s, except for the small dairy barn dated to the 1940s or the 1950s. No other dairy-related structures occur within the site to provide contextual presence to the dairy barn. One residence is dated to the late 1950s or 1960s and is located at 6382 Phillip Road in the southeastern portion of the site. The other residence and barn date to the 1960s and 1970s and are located at 6996 Phillip Road in the central portion of the site. Another barn is dated to the 1950s and is close to 50 years old. However, it lacks structural or architectural interest. It is located in the central portion of the site close to Pleasant Grove Creek. The windmill is a very recent structure and is located in the central portion of the site.

No structures defined in Section 15064.5 of the *California Environmental Quality Act 1970* (CEQA) were identified within the combined project area. No substantial adverse change to historical resources defined under CEQA would occur as a result of the project. Therefore, there would be no impacts to historic resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

An archaeological survey of the Reason Farms site was undertaken by URS Corporation for the City of Roseville during December 2001 and January 2002 (URS Corporation, 2002b). Following the City of Roseville's consideration to increase the retention storage from 2,250 acre-feet to 2,530 acre-feet, an additional area of 170 acres was added to the project area (URS Corporation, 2002c). This area was surveyed in April 2002. No archaeological sites pursuant to Section 15064.5 of CEQA were observed within the combined project area; however, records for two sites (one archaeological, one historical) were listed at the North Central Information Center (NCIC). The two survey reports are provided in Appendix C as C2 and C3, respectively. A description of the sites listed at NCIC within the combined project area is provided below.

A single prehistoric archaeological site (CA-Pla-136) has been previously identified within the central portion of the combined project area. The site was identified in April 1960 and contained ground stone artifacts (mano(s) and metate). No evidence of the archaeological site was observed during the field survey, because conversion of the combined project area to rice farming from grazing occurred after the discovery of the site and the subsequent leveling of the fields may have either removed or buried the site. It is also possible, however, that the site has been plotted by the NCIC in the wrong location. The NCIC record did not contain a detailed site map and the location of the site was difficult to interpret. It is possible that the site lies closer to the stream course and was obscured from view during the field survey by the dense riparian vegetation along Pleasant Grove Creek.

Two roads dating to the mid-1800s occur in the vicinity of the project area. One of the roads, the Sacramento and Nevada Road, may be represented by the current Pettigrew Road alignment. Pettigrew Road bisects the project area. The other road was unnamed. No evidence of either road was observed during the field survey and it is likely that both roads were removed when the project area was converted to rice farming.

To further assist in securing information regarding potential cultural resources located in or near the project area, requests for information were submitted to the Native American Heritage Commission (NAHC). The NAHC provided a list of contacts, all of whom were notified (see Appendix B of Appendix C2). A single response was received from John O. Suehead, Tribal Historic Preservation Committee Chairperson of the United Auburn Indian Community of the Auburn Rancheria. According to Mr. Suehead's correspondence, the files of the United Auburn Indian Community of the Auburn Rancheria contained no specific information on the current project area.

It is unlikely that the project would result in a substantial adverse change to any archaeological resources within the combined project area, because none were observed during the field survey. However, archaeological artifacts may be currently buried and could be uncovered during construction activities if they are located within the vicinity of the embankment and bypass channel structures. This could result in a potentially significant impact. Implementation of Mitigation Measures C-1, C-2, C-3 and C-4 described below, would reduce this impact to a less than significant level.

Mitigation Measure C-1

Conduct a pre-construction induction with key construction personnel to promote awareness of archaeological resource significance, visual identification, and discovery notification procedures.

Mitigation Measure C-2

Retain a qualified professional archaeologist to observe all project-related ground-disturbing activities within 25 meters (82 feet) of the banks of Pleasant Grove Creek.

Mitigation Measure C-3

Immediately stop ground-disturbing activities in the vicinity and consult a qualified professional archaeologist if buried cultural deposits are discovered during construction. If the discovery includes human remains, the Placer County Coroner and Native American Heritage Commission must also be contacted.

Mitigation Measure C-4

In the event resources are discovered develop and implement mitigation measures and management recommendations in consultation with the State Historic Preservation Office, and, if the site is of aboriginal association, the National American Heritage Commission and local Native American Community.

Given the increased archaeological sensitivity of the perennial stream course which flows through the combined project area, in particular the general vicinity where the archaeological site is purportedly located, it is recommended that certain ground-disturbing activities be subjected to archaeological monitoring. Specifically, a qualified professional archaeologist should be retained to conduct pre-construction inductions for key construction personnel and to observe all project-related ground-disturbing activities within 25 meters (82 feet) of the banks of the Pleasant Grove Creek. The pre-construction induction would promote awareness of archaeological resource significance and outline visual identification and discovery notification procedures in the event that archaeological resources were

uncovered. Given the elevated archaeological sensitivity of stream courses within the Central Valley, and the relatively undisturbed nature of Pleasant Grove Creek with its correspondingly dense ground surface obscuring vegetation, a distance of 25 meters (82 feet) out from the stream banks is likely to be a sufficient distance to capture the majority of potentially significant archaeological resources that may remain intact within the project area. Archaeological monitoring is not recommended for other areas within the combined project area, including the courses of the minor tributaries of Pleasant Grove Creek, given the high degree of ground disturbance associated with rice cultivation.

If archaeological materials are observed by the monitoring archaeologist, he or she will have the authority to halt all ground-disturbing activities within the vicinity of the exposed materials until the nature and significance of the find can be evaluated and mitigation measures, if needed, can be implemented. The development of mitigation measures would be conducted in consultation with the State Historic Preservation Office (SHPO), and, if the site is of aboriginal association, the NAHC and local Native American community.

Although it is unlikely that archaeological deposits exist outside of the relatively undisturbed course of Pleasant Grove Creek, it is still possible that previously unidentified archaeological materials could be inadvertently exposed during ground-disturbing activities. In the event of the discovery of buried archaeological artifacts, exotic (non-native) rock, or unusual amounts of shell or bone, it is recommended that project activities in the vicinity of the find be immediately stopped and a qualified professional archaeologist consulted to assess the resource and provide proper management recommendations. If the discovery includes human remains, the Placer County Coroner and NAHC must also be contacted.

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

A paleontological survey of the combined project area (the Reason Farms site plus the additional 170-acre area) was undertaken for URS Corporation for the City of Roseville from December 2001 to April 2002 (Lawler, 2002). No paleontological resources pursuant to Section 15064.5 of CEQA were observed within the combined project area; however, it is possible that previously unidentified paleontological resources could be inadvertently exposed during ground-disturbing activities. The combined project area is comprised of the Quaternary age Turlock Lake Formation, Riverbank Formation and Quaternary Alluvium sedimentary units, which are known geologic units of high paleontological significance. A copy of the report presenting the findings of the survey is presented in Appendix C4.

Development of the proposed project could result in a potentially significant impact, because paleontological resources could be uncovered during ground-disturbing activities. Implementation of Mitigation Measures C-5, C-6, and C-7, described below, would reduce this impact to a less than significant impact.

Mitigation Measure C-5

Conduct a pre-construction induction with key construction personnel to promote awareness of paleontological resource significance, visual identification, and discovery notification procedures.

Mitigation Measure C-6

Retain a qualified professional paleontologist to observe and monitor all project-related ground-disturbing activities.

Mitigation Measure C-7

Immediately stop ground-disturbing activities in the event that significant paleontological resources are discovered, then develop and implement mitigation salvage measures in accordance with professional paleontological standards (i.e., Society of Vertebrate Paleontology standards).

Given that all ground-disturbing activities occur within geologic units of high paleontological significance, it is recommended that a qualified paleontologist be retained to conduct pre-construction inductions for key construction personnel, and to observe and monitor all project related ground-disturbing activities. The pre-construction induction would promote awareness of paleontological resource significance and outline visual identification and discovery notification procedures in the event that paleontological resources were uncovered. Monitoring conducted during ground-disturbing activities would include intermittent spot-checking of excavation spoils for significant paleontological materials during site grading and excavation activities.

If paleontological materials are observed by the monitoring paleontologist, he or she would have the authority to halt all ground-disturbing activities within the vicinity of the exposed materials until the nature and significance of the find could be evaluated and mitigation salvage measures, if needed, could be implemented. The development of mitigation salvage measures would be conducted in accordance with professional paleontological standards (i.e., Society of Vertebrate Paleontology standards).

d) Disturb any human remains, including those interred outside of formal cemeteries?

No burial grounds, formal cemeteries, or evidence of isolated human internment were identified during the architectural history or archaeological surveys detailed above. However, due to the high level of ground disturbance within the project area associated with rice cultivation, it is possible that human remains could be buried and may be uncovered during construction activities. This could result in a potentially significant impact. Mitigation Measures C-3 and C-4 described above would reduce this impact to a less than significant level.

Conclusion

The development of the project would:

- result in no impact to historical resources defined in Section 15064.5 of CEQA;
- have a potentially significant impact on archaeological resources subject to Section 15064.5 of CEQA. Implementation of Mitigation Measures C-1, C-2, C-3 and C-4 would reduce this impact to a less than significant level;
- have a potentially significant impact on a unique paleontological or geologic feature. Implementation of Mitigation Measures C-5, C-6 and C-7 would reduce this impact to a less than significant level; and
- have the potential to disturb human remains. Implementation of Mitigation Measures C-3 and C-4 would reduce this impact to a less than significant level.

None of these issues require further analysis and do not warrant carrying forward to the EIR.

References

Lawler, David. 2002. Paleontological Resources Technical Report for the City of Roseville Retention Basin Project, Roseville, California. June 2002.

URS Corporation. 2002a. City of Roseville Retention Basin, Roseville, California, California Register Evaluation. June 2002.

URS Corporation. 2002b. Archaeological Reconnaissance of the 1,329-Acre Reason Farms for the City of Roseville, Placer County, California. March 2002.

URS Corporation. 2002c. Archaeological Reconnaissance of a 170-Acre Addition to the City of Roseville Retention Basin Project Area for the City of Roseville, Placer County, California. Addendum to the Archaeological Reconnaissance of the 1,329-Acre Reason Farms for the City of Roseville, Placer County, California. June 2002.

3.6 GEOLOGY AND SOILS

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
6. GEOLOGY AND SOILS. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				✓
b) Strong seismic ground shaking?				✓
c) Seismic-related ground failure, including liquefaction?				✓
d) Landslides?				✓
e) Would the project result in substantial soil erosion or the loss of topsoil?			✓	
f) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				✓
g) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		✓		
h) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.				✓

a) Rupture of a known earthquake fault?

According to the geologic map of the region (USGS, 1985) no faults are mapped within the project area. The nearest fault zone is the Bear Mountain Fault Zone, which is located approximately 20 miles to the east in Auburn, California. The Bear Mountain Fault Zone is described in California Division of Mines and Geology (CDMG), now the California Geological Survey (CGS) open-file report 84-52 (CDMG, 1984) as a very broad and complex zone of steeply dipping faults formed as a result of collision during Mesozoic time

and has been partly reactivated by Cenozoic extension and strike-slip displacements. There is no well-defined geomorphic evidence of Holocene faulting. Data from trench studies revealed minor offsets of Pleistocene and possibly Holocene soils locally, but dip-slip rates for individual faults are very low, approximately 0.005 to 0.05 millimeters per year. This fault zone was not recommended for Alquist-Priolo Zoning at the time of the CDMG report. No impacts to or by the proposed project are anticipated.

b) Strong seismic ground shaking?

Strong ground shaking due to future seismic events is unlikely in the project area. Only moderate ground motions have been experienced in the past and are likely to occur again in the future. Possibly the strongest shaking that has been observed in the project area was during earthquakes in 1868, 1892, and 1906, when maximum intensities were about VII on the Modified Mercalli Scale (Toppozada et al., 1981). Based on the CDMG Seismic Hazard map of California (CDMG, 1999), ground motions with a 10 percent probability of being exceeded within the next 50 years are estimated at 0.1 to 0.2 g at the site, which is the lowest in the state of California. No impacts are anticipated.

c) Seismic-related ground failure, including liquefaction?

Liquefaction is the phenomenon during which loose, saturated, cohesionless soils temporarily lose shear strength during strong ground shaking. Significant factors known to affect the liquefaction potential of soils are the characteristics of the materials such as grain size distribution, relative density, degree of saturation, the initial stresses acting on the soils, and the characteristics of the earthquake, such as the intensity and duration of the ground shaking. Shallow, loose, saturated granular soils are the most susceptible to liquefaction.

Placer County Water Agency has developed a map showing lines of equal elevation of water in wells, for the spring of 1990. This map indicates ground water levels at the site between elevation 0 to elevation – 10 feet mean sea level or between about 65 to 95 feet below the existing ground surface.

Information on subsurface sediments from a nearby site (URS, 2001) suggests the sandy materials at depth are sufficiently dense that they are generally not considered to be susceptible to liquefaction, and no impacts would occur.

d) Landslides?

The project area is on an alluvial plain, with low, rolling topography. The lack of significant slopes on or near the site indicates that the hazard from slope instability, potentially resulting in landslides and debris flows, is negligible. Although soils exposed in the banks of Pleasant Grove Creek could potentially become unstable under high flow conditions and localized sloughing of the banks could potentially occur, the assessment of geomorphic trends presented in the Final Conceptual Design Report (PWA/URS, 2002) indicates that the potential for these impacts is very low. The report found that the fine sediment, low slope, and low energy nature of the creek are indicators that lateral channel movement would be low.

Therefore, localized stream bank erosion and sloughing would not be expected to expose people or structures to potential adverse effects including loss, injury, or death.

Embankments would be constructed for the proposed project using fill from the project area. The fill would be compacted and the embankments designed to conform to the requirements of the California Department of Safety of Dams so that they would not be susceptible to landslides or other types of slope failures. This would reduce the risk of loss, injury or death as a result of the project to a less than significant level.

e) Substantial soil erosion or loss of topsoil?

The proposed project would involve excavating two channels and creating earthen embankments to infrequently retain flood water on the site. Both channels would contain low-flow channels. Grading activities could cause short-term increases in erosion and sedimentation.

All disturbed areas would be hydroseeded, to encourage vegetative cover and increase soil stability. A Notice of Intent would be filed with the SWRCB indicating that the project intends to comply with the state general construction activity NPDES permit. This would include preparation and implementation of a SWPPP that would contain BMPs designed to reduce the potential for increased erosion and transport of sediments and other pollutants to the Pleasant Grove Creek. Therefore, the potential for erosion and sedimentation would be considered to be less than significant.

The Final Conceptual Design Report for the proposed project (PWA/URS, 2002) investigated the potential impact the project could have on sediment transport rates. The Reason Farms site lies in a depositional zone within the Pleasant Grove Creek watershed. The stream channels have very low gradients and fine sediment loads. Pleasant Grove Creek, through the Reason Farms site, has the lowest channel gradients in the watershed. Although sediment transport rates through the site could increase slightly, the report found that the overall erosional and depositional trends with the proposed project would similar to those of the existing condition. Therefore, from the point of view of general aggradation/degradation trends, the project would not be expected to change the geomorphic trends at the site. Furthermore, the report found that the fine sediment, low slope, and low energy nature of the creek are indicators that lateral channel movement would be low and that geomorphic processes would not be expected to impact the stability of the proposed embankments.

Therefore, it is expected that the long-term soil erosion impacts of the proposed project would be less than significant.

f) Be located on an unstable geologic unit or soil, potentially resulting in a landslide, lateral spreading, subsidence, liquefaction, or collapse?

The geologic units found in the project area include alluvium, the upper and lower members of the Riverbank Formation, and the Turlock Lake Formation (Figure 3-5). The alluvium consists of unweathered gravel, sand, and silt deposited by present-day flow in Pleasant Grove Creek. The upper

member of the Riverbank Formation consists of compact dark-brown to red alluvium composed of gravel, sand, and silt. Topographically it forms the lower of the two Riverbank terraces. The lower member of the Riverbank Formation is composed of red semi-consolidated gravel, sand, and silt. Most of the alluvium in the lower member is very arkosic, and it was probably derived from the western slopes of the Sierra Nevada. The oldest geologic unit present in the project area is the Turlock Lake Formation. This formation is composed of deeply weathered and dissected arkosic gravels with sand and silt.

In addition to the geologic units, seven soil types (Table 3-13) have been identified by the U.S. Department of Agriculture (USDA) within the project area (USDA, 1979). All of the fields were graded and leveled when rice farming began in the 1970s (Amarel, 2002). Therefore, the surface soils and sediments have been disturbed and different soils are mixed within the same field. However, none of the soil types in the project area are described by the USDA report as inherently unstable, and saturation of these units during temporary flooding is unlikely to cause them to become unstable. Therefore, no landslide, lateral spreading, subsidence, liquefaction, or collapse due to unstable soil would occur.

Table 3-13
Soil Characteristics
City of Roseville Retention Basin

Soil Name	Depth to Bedrock (inches)	Classification (USCS)[a]	Shrink-Swell Potential
Alamo-Fiddyment Complex	37	CH, ML, CL	High
Cometa-Fiddyment Complex	35	CH, CL, SM-SC, SM	Low and High
Cometa-Ramona Sandy Loams	>73	CH, CL, CL-ML, ML, SM-SC, SM	Low
Fiddyment Loam	35	CL, ML	Low and High
Fiddyment-Kaseberg Loams	17	CL, ML	Low and High
San Joaquin-Cometa Sandy Loams	>60	CH, CL, SM-SC, SM	Low and High
Xerofluvents[b]	0-60	Variable	NM[c]

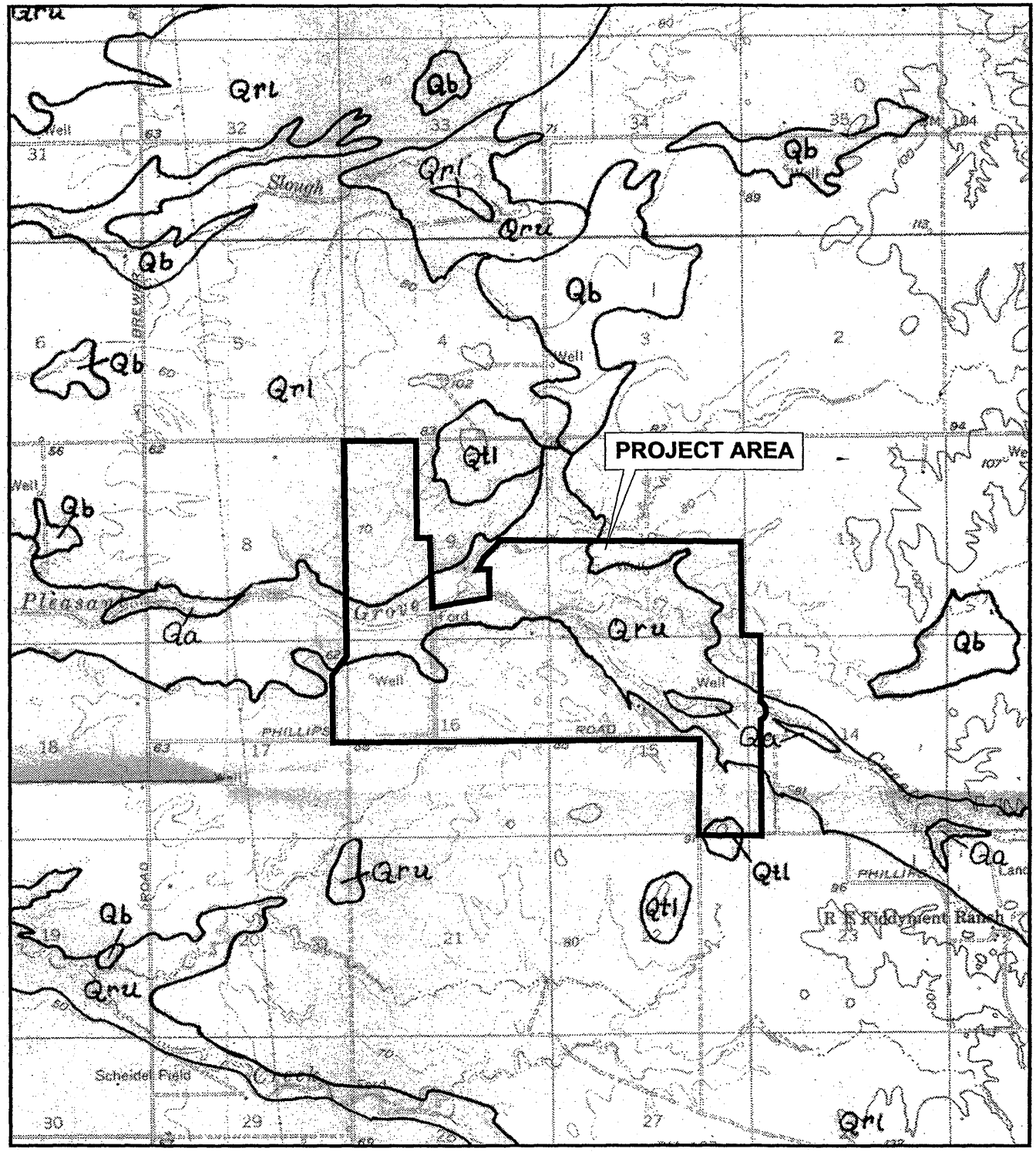
Source: USDA, 1979

Notes:

[a] USCS: Unified Soil Classification System
- CH = inorganic clays of high plasticity
- CL = inorganic clays of lower plasticity/organic silts
- ML = inorganic silts and very fine sands
- SC = clayey sands
- SM = silty sands

[b] Xerofluvents are characterized as Occasionally Flooded, Frequently Flooded, or Hardpan Substratum.

[c] NM: not measured



Source: Helley and Harwood, 1985. Scale 1:62,500.

LEGEND

Qa	Quaternary Alluvium
Qb	Basin Deposits, Undivided (Holocene)
Qru	Riverbank Formation, Upper Member, Pleistocene
Qrl	Riverbank Formation, Lower Member, Pleistocene
Qtl	Turlock Lake Formation, Plio-Pleistocene

N

2000 0 4000

Approximate Scale in Feet

Figure 3-5
GEOLOGY

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

6/11/02 vsa \43-00067030.00\F3-5_geology.cdr

g) Be located on expansive soil, creating substantial risks to life or property?

According to the USDA report, some of the soils present in the project area have high shrink-swell potentials (Table 3-13), which is related to expansion due to clay content. The current project design includes the construction of embankments from site soil and construction of concrete inlet and outlet structures that tie into the embankments. The presence of potentially expansive soils should be considered in the design of these facilities so that the constructed facilities perform as intended and are not adversely affected by expansion and contraction of the existing site soils.

Mitigation Measure G-1

Comply with the conclusions and recommendations of a site-specific geotechnical investigation.

Mitigation Measure G-1 applies to the potentially expansive soils that are present on the site, their use in the construction of embankments, and their presence in areas that where concrete inlet and outlet structures will be constructed. A geotechnical investigation will be conducted during final project design. Soil borings will be performed to classify subsurface soils, soil samples will be collected, and laboratory testing will be performed to determine existing soil properties and to make design recommendations for the embankments, structure foundation, and excavation and backfill.

The design recommendations will, at a minimum, address the following issues:

- The suitability of existing site soils for construction of the proposed embankment
- Recommendation of an appropriate embankment side slope
- Foundation subgrade preparation for inlet and outlet structures.

Compliance with Mitigation Measure G-1 will reduce the potential impacts of expansive soil to a less than significant level.

h) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water systems?

Most soils at the site have a relatively low permeability in the range of 0.02 to 0.06 inches per hour at depths of between 9 to 30 inches below grade (USDA, 1979). Low permeability soils in the project area would not be suitable for installation of an alternative wastewater disposal system, such as a septic tank or leach field. However, such use is not part of the project description and therefore would not represent a significant impact.

Conclusion

The development of the project would:

- have no impact on a known earthquake fault, and there would be no impact;

- not be subject to strong seismic ground shaking which could expose people or structures to risk, and there would be no impact;

- not result in seismic-related ground failure, including liquefaction, and there would be no impact;

- not result in or increase risk of a landslide, and there would be no impact;

- not create substantial soil erosion due to implementation of BMPs during construction, resulting in a less than significant impact;

- not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse due to location on a geologic unit or soil that unstable or would become unstable, and there would be no impact;

- result in increased risk to life or property due to the location of the project on expansive soils and is considered to be a potentially significant impact. This impact would be reduced with the implementation of Mitigation Measure G-1; and

- not result in the use of septic tanks or alternative waste water disposal systems, and there would be no impact.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

Amarel, Robert. 2002. Owner of Reason Farms. Personal communication with M. Thomas of Philip Williams & Associates, during site inspection. April 16, 2002.

CDMG (California Division of Mines and Geology). 1999. Probabilistic Seismic Hazard Map for California: 10% probability of exceedance in 50 years. Open File Report 96-08.

CDMG. 1984. Summary Report: Fault Evaluation Program, 1983 Area-Sierra Nevada Region, California. Open File Report 84-52.

Helley, E.J. and D.S. Harwood. 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills Region, California. U.S. Geological Survey, Miscellaneous Field Studies. MF-S74. Scale 1:62,500.

Placer County Water Agency. 1990. Lines of Equal Elevation of Water Wells, Spring 1990.

PWA/URS (Philip Williams & Associates and URS Corporation). 2002. Reason Farms Retention Basin Final Conceptual Design Report, Appendix D Sediment Transport Analysis. May 24, 2002.

PWA/URS (Philip Williams & Associates and URS Corporation). 2002. Reason Farms Retention Basin Final Conceptual Design Report. Prepared for the City of Roseville. May 24, 2002.

Toppozada, T.R., C.R. Real, and D.L. Park. 1981. Preparation of Isoseismal Maps and Summaries of Reported Effects for Pre-1900 California Earthquakes. California Division of Mines and Geology Special Publication 113, pp. 249-252.

URS Corporation. 2001. Roseville Energy Facility, Application for Certification to California Energy Commission, Appendix L.1 Geotechnical Engineering Study. August 6, 2001.

USDA (U.S. Department of Agriculture). 1979. Soil Survey of Placer County, California, Western Part.

USGS (U.S. Geological Survey). 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California. Miscellaneous Field Studies Map MF-1790.

3.7 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
7. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✓
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 3 miles of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				✓
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

a) Create a significant hazard through routine transport, use, or disposal of hazardous materials?

The proposed project would not require the routine transport, use, or disposal of hazardous materials. The hazardous materials that are currently used and stored in the project area will be removed prior to construction of the project, and hazardous materials are not intended to be used in the construction or operation of the retention basins.

b) Create a significant hazard through foreseeable upset and accident conditions involving the release of hazardous materials?

The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The current status and history of hazardous materials use and storage on the project area and in the surrounding vicinity were investigated by URS in April 2002. This investigation included a search of environmental databases for listings of the subject property and properties within the surrounding 3-mile radius, a site inspection, and a verification of a previous environmental site assessment report for all but 170 acres of the project area (Anderson Consulting Group 2001).

During the site reconnaissance, it was found that the hazardous materials that are currently used and stored in the project area consist of hydraulic oil, motor oil, diesel fuel, aqueous ammonia, algaecide, and pesticides. Debris such as abandoned cars, engines, gas tanks, farm equipment, tires, building materials, and a shopping bag full of medical waste were observed in various parts of the project area (Figure 3-6). The debris and hazardous materials were also noted as being on site in the previous report (Anderson Consulting Group, 2001). No listings were found in the reviewed environmental agency databases for the properties within the project area or any properties within the 3-mile radius of the project area.

Figure 3-6 shows the location of 12 existing agricultural wells, each with a 250-gallon aboveground storage tank (AST) for diesel fuel. Water wells located in the project area would be maintained as inactive wells according to California Department of Water Resources Bulletins 74-90 and 74-81, until their future use is determined.

For this project, the hazardous materials on site will be contained and removed in accordance with applicable regulations for the transport and disposal of hazardous materials on public thoroughfares by licensed contractors. Additionally, soil in the hydraulic oil, motor oil, and diesel fuel storage areas that has been affected by spills and leaks will be excavated, characterized for disposal, and disposed of at the appropriate waste management facility.

Therefore, no impacts resulting from disposal or accidents related to hazardous waste removal are expected.



LEGEND

- Medical Waste
- Debris
- Aboveground Storage Tank (AST) (Diesel fuel and aqueous ammonia)
- 3 Agricultural Groundwater Wells w/ 250-Gallon Diesel ASTs
- Abandoned Gas Pump
- Airstrip

N

1750 0 1750 3500

Scale (feet)

Figure 3-6
HAZARDOUS MATERIALS

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

Source: Placer County, 2001. Georeferenced aerial photography.

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6/10/02 vsa

c) Emit hazardous emissions or handle hazardous materials within 3 miles of a school?

The proposed project would not require hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste, except for transportation and disposal during construction, as described above. No existing schools are located within 3 miles of the project area. The proposed West Roseville Specific Plan would include several schools, but these would not be constructed or operational until after the transport and disposal of the hazardous materials, substances, or waste on the proposed project site. There would be no impacts.

d) Be located on a site included on a list of hazardous materials sites, and create a significant hazard?

The proposed project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. URS reviewed information gathered from several environmental databases through Environmental Data Resources (EDR), to evaluate whether activities that are regulated and overseen by federal, state, and local governmental agencies occur on or near the subject property. It should be noted that this information is reported as URS received it from EDR, which in turn reports information as it is provided in various government databases. It is not possible for either URS or EDR to verify the accuracy or completeness of information contained in these databases; however, the use of and reliance on this information is a generally accepted practice in the conduct of environmental due diligence. The database search found that the site address is not included in any of the reviewed environmental agency databases.

e) If located within an airport use plan or within two miles of a public airport, would the project result in a safety hazard?

The proposed project is not located within two miles of a public airport or public use airport.

f) If located in the vicinity of a private airstrip, would the project result in a safety hazard?

A private airstrip is currently located on the property (Figure 3-6), but it would no longer be used once the retention basins are constructed. A second, informal private airstrip is located across the road from this airstrip (Amarel, 2002). It would likely remain in use for crop dusting and seeding of surrounding farmlands. The proposed project would not result in a safety hazard for people residing or working in the project area, or for any uses associated with the airport. The proposed project would only require biannual inspections for maintenance purposes.

g) Impair or interfere with an emergency response or evacuation plan?

The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan because it does not interfere with evacuation routes for the surrounding community.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires?

Because seasonal flooding during the winter is likely to increase vegetation density, the conditions for wildland fires may be increased. However, as discussed in Section 3.13, Public Services, maintenance activities proposed will control vegetation density and reduce the potential for wildland fire conditions. Therefore, impacts related to wildland fires would be less than significant.

Conclusion

The development of the project would:

- not require the routine transport, use, or disposal of hazardous materials, and there would be no impact;
- not create a significant hazard through upset conditions involving the release of hazardous materials into the environment;
- not emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within 3 miles of an existing or proposed school, and there would be no impact;
- not be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5, and there would be no impact;
- not be located within an airport land use plan or within two miles of a public airport or public use airport, and there would be no impact;
- not result in a safety hazard for people working in the project area due to the proximity to the private use airstrip. During construction and operation, no residents would be located within the project area. No impact would occur;
- not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and there would be no impact; and
- slightly increase the risk of wildfire to surrounding residences, however this impact is considered to be less than significant. The implementation of maintenance activities to remove excess vegetation would reduce risk of wildfire associated with increased vegetation density.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

Amarel, R. 2002. Owner of Reason Farms. Personal communication with Jenny Becher and Denise Heick of URS Corporation, May 14, 2002.

Anderson Consulting Group. 2001. Phase I Environmental Site Assessment, Reason Farms, 1335 Acres, Placer County, California. Prepared for Westpark Associates. March 23, 2001.

EDR. 2002. EDR Radius Map with Geocheck, Reason Farms, 660 Phillips Road, Roseville, CA. April 19, 2002.

3.8 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):		Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
8. HYDROLOGY AND WATER QUALITY. Would the project:					
a)	Violate any water quality standards or waste discharge requirements?			✓	
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (for example, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				✓
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.			✓	
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.			✓	
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				✓
f)	Otherwise substantially degrade water quality?			✓	
g)	Place housing within a 100-year flood-hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h)	Place within a 100-year flood-hazard area structures which would impede or redirect flood flows?				✓
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			✓	
j)	Inundation by seiche, tsunami, or mudflow?				✓

a) Violate any water quality standards or waste discharge requirements?

The project would have the potential for short-term, construction-related decreases in the quality of surface water runoff associated with increased erosion and sedimentation and other general construction activities. Grading activities at the project site would involve disturbing more than 5 acres of land. As such, construction activities at the site would be subject to regulation under the Nationwide Pollutant Discharge Elimination System (NPDES) permit for General Construction Activities as administered by the California State Water Resources Control Board (SWRCB). Construction-related impacts to water quality, associated with activities other than grading, would also include the maintenance and storage of construction vehicles and equipment, fuel storage and fueling, and storage and management of construction materials and debris.

Construction of the project would have the short-term potential to degrade the water quality of Pleasant Grove Creek. A Notice of Intent will be filed with the SWRCB indicating that the project intends to comply with the state general construction activity NPDES permit. This would include preparation and implementation of a SWPPP that would contain BMPs designed to reduce the potential for increased erosion and transport of sediments and other pollutants to the Pleasant Grove Creek. Appropriate BMPs may include "good housekeeping" measures, designated construction staging areas, fuel spill containment, erosion and silt fencing and other measures. The implementation of these measures would result in the project having a less than significant impact to the water quality of Pleasant Grove Creek. No additional mitigation would be required.

b) Substantially deplete groundwater supplies or interfere with groundwater recharge?

Rice farming activities conducted within the project area currently extracts approximately 3.96 billion gallons of groundwater per year. The proposed project would not use groundwater, so it would not have the potential to deplete groundwater. The decrease in groundwater extraction associated with reduced rice farming activities caused by the project would decrease demand on groundwater supplies and increase the quantity of groundwater available for other uses in the region.

The soil conditions at the site are highly impervious; hence their suitability for rice farming. This same impermeability reduces the potential for groundwater recharge at the site. The project could, on the other hand, increase the rate of groundwater recharge within the bed of Pleasant Grove Creek by prolonging the flow of water through the creek system and thus increasing the period of over which water could infiltrate through the creek bed into the underlying groundwater aquifer.

c) Substantially alter the drainage pattern of the site or area in a manner which would result in erosion or siltation?

Construction of the project would have the short-term potential to increase erosion and sediment transport to Pleasant Grove Creek. Long-term erosion and sedimentation rates on and off of the project site would be expected to remain relatively stable and unchanged. In addition, a Notice of Intent would be filed with the SWRCB indicating the project intends to comply with the state general construction activity NPDES

permit, including preparation and implementation of an SWPPP. No other mitigation is needed to address changes in erosion and sedimentation rates either on or off the site.

Construction of the project would also alter the course of Northern Tributary Two. However, this alteration would reconstruct the stream in a more natural configuration than currently exists and would eliminate a 500-foot segment of existing active incision. The existing stream is within a man-made ditch. With the project, a gently meandering stream, approximating the historic alignment and grade of Northern Tributary Two, would be constructed. The project would re-establish a sediment transport capacity more closely resembling the conditions that existed prior to rice farming at the site. Water in the reconstructed Northern Tributary Two would flow through the north floodplain of Pleasant Grove Creek and through an outlet structure to join with Pleasant Grove Creek. Normally, the outlet structure gates would be in the open position so that flows would pass relatively unimpeded to join with Pleasant Grove Creek. On occasion, when flooding is imminent in Sutter County, the outlet structure gates would be closed and water would accumulate behind the gates. When the threat of flooding in Sutter County recedes, the gates would be opened and water would flow from the North Basin into Pleasant Grove Creek. Assuming that all sediment than enters the North Basin during the design event would be trapped in the basin, a range of sediment accumulation between 1.6 and 11 acre-feet in volume could be expected. This would represent between 0.2 and 1.7 percent of the total basin volume (PWA/URS, 2002). The reconstructed Northern Tributary Two would, to the extent practicable, be designed so that most of the time, when retention storage is not needed, sediments conveyed to the site by Northern Tributary Two would be conveyed through the North Basin to Pleasant Grove Creek.

With the project, a small portion of the flows in Pleasant Grove Creek would enter the bypass channel in the South Basin and would follow that bypass channel for a distance of about 9,000 feet and then rejoin Pleasant Grove Creek. On average, water would be expected to flow through the bypass channel once every year or two. On occasion, when flooding is imminent in Sutter County, the South Basin outlet gates would be closed and temporarily prevent water in the bypass channel from rejoining Pleasant Grove Creek. Water would then accumulate behind the gates and would be retained on the project site until the threat of flooding in Sutter County recedes. Then the gates would be opened and water would flow from the site into Pleasant Grove Creek. Normally, the gates would be in the open position so that flows would pass relatively unimpeded through the bypass channel to rejoin with Pleasant Grove Creek. The bypass channel would, to the extent practicable, be designed so that sediments entering the bypass channel would be conveyed through the South Basin to rejoin with Pleasant Grove Creek. During the design event, when the gates would be closed, approximately 1.3 acre-feet of sediment could be expected accumulate in the South Basin. This would represent less than 0.07 percent of the total volume of the South Basin (PWA/URS, 2002).

With the project, long-term geomorphic trends of Pleasant Grove Creek and Northern Tributary Two would not be expected to change (PWA/URS 2002).

d) Substantially alter the existing drainage pattern of the site or area in a manner which would result in flooding?

The project would alter the course of Northern Tributary Two and allow a small portion of the flows in Pleasant Grove Creek to leave the creek and follow the bypass channel through the South Basin. The Final Conceptual Design Report (PWA/URS, 2002) examines the operation of the North and South basins with the gates in the open and closed positions. In either position, the project would tend to increase the peak rate of flow upstream of the site and decrease the peak rate of flow downstream of and through the site. The project would also tend to decrease flood elevations upstream and through the site along Pleasant Grove Creek and Northern Tributary Two as well as downstream of the site along Pleasant Grove Creek.

In addition, when flooding is imminent in Sutter County, the outlet gates on the basins would be closed and water would be retained on the site and not be allowed to flow downstream and contribute to flooding in Sutter County.

Tables 3-14 and 3-15 below illustrate the expected changes in peak flow rate and flood elevation for a range of flood frequencies and for the design event. Flow rates would be reduced through and downstream of the site and flood water elevations would be reduced upstream, downstream, and through the site.

e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

The project would be maintained in a relatively natural condition. Impervious surfaces are not planned with this project. Therefore the project would not be expected to create or contribute runoff water above that which would naturally occur without the project. The project would not be expected to generate additional sources of polluted runoff, except as short-term increases in erosion and sedimentation, which are addressed in a) above. Conversely, the purpose of the project is to reduce the potential for flooding downstream of the site. With the project, peak flows in Pleasant Grove Creek would be reduced and, when flooding is imminent in Sutter County, flood waters would be retained on the project site, thus reducing the volume of runoff entering Sutter County from Placer County.

f) Otherwise substantially degrade water quality?

The project would not be expected to degrade water quality beyond those potential impacts discussed in a) above.

g) Place housing within an identified 100-year flood-hazard area?

The project would not involve the construction of housing. However, the project would remove one residential house that is currently shown within a FEMA Flood Zone A. This house is located in the center of the project area and would be removed as a result of construction of the bypass channel.

Table 3-14
Calculated Existing and Post-Project Conditions — Maximum Flow Rates at Selected Locations

Location	Map Index Number[a]	24-hour Duration Storm of Return Frequency										8-day Duration Storm of Return Frequency	
		2-years		10-years		25-years		50-years		100-years		100-years	
		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)	
		Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition
PGC 600 ft U/S of Site	1	1,873	1,905	3,919	3,938	5,277	5,307	6,301	6,372	7,135	7,215	9,939	10,050
PGC 300 ft U/S of Site	2	1,871	1,903	3,909	3,933	5,246	5,279	6,277	6,344	7,110	7,187	9,922	10,037
PGC at East Boundary of Site	3	1,870	1,905	3,903	3,950	5,237	5,350	6,268	6,341	7,101	7,174	9,913	10,267
PGC at U/S End of North Basin Levee	4	1,868	1,894	3,820	3,825	5,172	5,050	6,227	6,171	7,060	7,016	9,885	9,970
PGC at U/S End of South Basin Levee	5	1,861	1,312	3,763	2,682	5,144	3,785	6,209	5,631	7,046	5,631	9,873	8,750
South Basin Inlet Structure – Gates	6		572		1,099		1,224		1,250		1,261		1,100
South Basin Inlet Structure – Spillway	6		0		0		32		64		89		181
PGC in Slackwater Area U/S of NT2	7	1,823	1,289	3,721	2,664	5,097	3,755	6,170	4,803	7,016	5,586	9,917	8,720
PGC Just U/S of NT2 Confluence	8		1,284		2,662		3,751		4,791		5,574		8,715
NT2 Entering the Site	9	566	638	1,161	1,288	1,481	1,637	1,744	1,922	1,944	2,136	2,247	2,427
NT2 within North Basin	10	557	620	1,148	1,258	1,465	1,596	1,728	1,871	1,921	2,074	2,237	2,263

Table 3-14. (continued)
Calculated Existing and Post-Project Conditions — Maximum Flow Rates at Selected Locations

Location	Map Index Number[a]	24-hour Duration Storm of Return Frequency										8-day Duration Storm of Return Frequency	
		2-years		10-years		25-years		50-years		100-years		100-years	
		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)		Max Flow Rate (cfs)	
		Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition
North Basin Outlet Structure – Spillway	11		0		0		0		0		0		0
North Basin Outlet Structure – Gates	11		570		926		1,016		1,110		1,194		1,555
PGC Just D/S[6] of NT2 Confluence	12	2,328	1,842	4,732	3,577	6,228	4,654	7,239	5,652	7,809	6,363	11,808	9,575
PGC btw[7] NT2 and NB[8] Confluences	13	2,326	1,839	4,731	3,576	6,225	4,651	7,236	5,650	7,808	6,356	11,793	9,572
PGC Just U/S of NB Confluence	14	2,321	1,834	4,726	3,572	6,216	4,644	7,236	5,642	7,793	6,348	11,782	9,572
PGC Just D/S of NB Confluence	15	2,402	1,921	4,875	3,728	6,404	4,825	7,449	5,848	8,020	6,573	12,026	9,786
South Basin Outlet Structure – Spillway	16		0		0		0		0		0		426
South Basin Outlet Structure – Gates	16		392		552		561		563		564		0[b]
PGC Just D/S of South Basin Outlet	17	2,585	2,489	5,065	4,507	6,614	5,642	7,661	6,659	8,645	7,375	12,150	10,318
PGC at West Boundary of Site	18	2,546	2,452	4,979	4,450	6,509	5,557	7,606	6,556	8,503	7,243	12,080	10,255

Source: PWA/URS, 2002.

Notes:
[a] Map index numbers are keyed to maps in Appendix C, Hydraulic Modeling, in PWA/URS (2002).
[b] Gates in the closed position
btw = between
cfs = cubic feet per second
D/S = downstream
NB = North Branch Pleasant Grove Creek
NT2 = Northern Tributary Two
PGC = Pleasant Grove Creek
U/S = upstream

Table 3-15
Calculated Existing and Post-Project Conditions — Maximum Water Surface Elevations at Selected Locations

Location	Map Index Number[a]	24-hour Duration Storm of Return Frequency										8-day Duration Storm of Return Frequency	
		2-years		10-years		25-years		50-years		100-years		100-years	
		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]	
		Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition
PGC[4] 600 ft U/S[5] of Site	1	75.76	74.77	79.09	78.08	80.11	79.34	80.71	79.97	81.09	80.36	82.19	81.29
PGC 300 ft U/S of Site	2	75.56	74.31	78.86	77.64	79.86	78.84	80.48	79.44	80.88	79.81	81.99	80.80
PGC at East Boundary of Site	3	75.26	73.72	78.54	77.10	79.47	78.23	80.07	78.72	80.44	79.03	81.48	79.86
PGC at U/S End of North Basin Levee	4	71.61	70.45	74.33	73.10	75.44	74.19	76.27	74.94	76.82	75.46	78.41	77.48
PGC at U/S End of South Basin Levee	5	69.66	68.67	72.45	71.14	73.81	72.43	74.69	73.47	75.24	74.15	76.88	76.54
South Basin Inlet Structure	6		71.58		74.59		75.23		75.43		75.56		77.41
PGC in Slackwater Area U/S of NT2[6]	7	68.31	67.41	71.09	69.88	72.28	71.03	73.01	71.95	73.38	72.53	74.52	74.68
PGC Just U/S of NT2 Confluence	8		67.22		69.65		70.75		71.62		72.17		74.23
NT2 Entering the Site	9	77.45	75.26	78.07	75.93	78.32	76.13	78.48	76.25	78.59	76.34	78.75	76.44
NT2 within North Basin	10	76.39	72.50	76.88	73.32	77.06	73.63	77.19	73.88	77.28	74.06	77.40	74.99

Table 3-15 (continued)
Calculated Existing and Post-Project Conditions — Maximum Water Surface Elevations at Selected Locations

Location	Map Index Number[a]	24-hour Duration Storm of Return Frequency										8-day Duration Storm of Return Frequency	
		2-years		10-years		25-years		50-years		100-years		100-years	
		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]		Max WSEL[2] (ft)[3]	
		Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition	Existing Condition	Post-Project Condition
North Basin Outlet Structure – U/S	11		67.53		70.35		71.44		72.29		72.73		74.92
North Basin Outlet Structure – D/S[7]	11		67.19		69.61		70.70		71.56		72.10		74.15
PGC Just D/S of NT2 Confluence	12	67.80	67.11	70.51	69.50	71.64	70.57	72.32	71.41	72.67	71.94	73.65	73.93
PGC btw[8] NT2 and NB[9] Confluences	13	67.70	67.02	70.37	69.38	71.48	70.44	72.14	71.27	72.49	71.78	73.46	73.73
PGC Just U/S of NB Confluence	14	67.30	66.68	69.81	68.93	70.79	69.90	71.37	70.67	71.68	71.15	72.58	72.92
PGC Just D/S of NB Confluence	15	67.07	66.49	69.47	68.65	70.35	69.58	70.89	70.31	71.17	70.75	72.03	72.40
South Basin Outlet Structure	16		69.73		73.49		73.73		73.79		73.83		77.36[10]
PGC Just D/S of South Basin Outlet	17	63.99	63.85	65.98	65.63	66.78	66.29	67.28	66.82	67.68	67.16	68.99	68.37
PGC at West Boundary of Site	18	53.04	53.08	54.23	54.14	54.77	54.57	55.13	54.93	55.40	55.17	56.42	56.12

Source: PWA/URS, 2002.

Notes:

[a] Map index numbers are keyed to maps in Appendix C, Hydraulic Modeling, in PWA/URS (2002).

[b] Gates in the closed position

btw = between

cfs = cubic feet per second

D/S = downstream

NB = North Branch Pleasant Grove Creek

NT2 = Northern Tributary Two

PGC = Pleasant Grove Creek

U/S = upstream

h) Place within a 100-year flood-hazard area structures which would impede or redirect flood flows?

The project would include structures that are designed to impede flow and retain water on the site when flooding is imminent in Sutter County, and would cause flow rates and flood elevations downstream of the project to be reduced, and flood elevations upstream of the project to also be reduced. This is a design goal of the project and would not result in adverse environmental effects.

Normally, the structures would not tend to impede flows, although their presence would tend to reduce peak flow rates within Pleasant Grove Creek downstream of the site. This is discussed more completely in c) and d) above.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The project would, at capacity, retain approximately 2,530 acre-feet of water. Because the height of the stored water, vertically measured from the downstream flow line and the water surface in the basin, would exceed 6 feet, the facility would fall within the jurisdiction of the California Department of Safety of Dams (DSOD). Both basins would be designed and operated according to the requirements of the DSOD, and the potential impact of the project on the health and safety of downstream inhabitants and the risk of property would therefore be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

The project does not have the potential to create inundation by seiche, tsunami, or mudflow.

Conclusion

The development of the project would:

- not substantially degrade water quality or violate water quality standards or waste discharge requirements, and would result in a less than significant impact;

- not deplete groundwater supplies or interfere substantially with groundwater recharge, and there would be no impact;

- not result in substantial erosion and sediment transport to Pleasant Grove Creek during construction, and would result in a less than significant impact. The retention basin has been designed so that during operation sediment generated would be collected in the North and South Basins prior to entering Pleasant Grove Creek;

- alter the course of Northern Tributary Two and allow a small portion of the flows in Pleasant Grove Creek to leave the creek and follow the bypass channel through the South Basin. The project would

increase the peak rate of flow upstream of the site and decrease the peak rate of flow downstream of and through the site. Flood volumes flowing to Sutter County would be decreased. This is a design goal of the project and would result in a less than significant impact;

- not create or contribute runoff water which would exceed the capacity or planned storm water drainage systems or provide additional sources of polluted runoff, and there would be no impact;
- not substantially degrade water quality, and would result in a less than significant impact;
- not place housing within a 100-year flood hazard area, and there would be no impact;
- not place structures which would impede or redirect flows within a 100-year flood hazard area, and there would be no impact;
- have a less than significant risk of exposing people or structures to a loss, injury or death as a result of the failure of the retention basin; and
- not result in inundation by seiche, tsunami or mudflow, and there would be no impact.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

DWR (California Department of Water Resources), Division of Safety of Dams. 1993. Guidelines for the Design and Construction of Small Embankment Dams. January.

PWA/URS (Philip Williams & Associates, Ltd. and URS Corporation). 2002. Reason Farms Retention Basin Final Conceptual Design Report. May 24, 2002.

3.9 LAND USE AND PLANNING

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
9. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?				✓
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?			✓	

a) Physically divide an established community?

The project area, adjacent surrounding areas and greater surrounding region are currently used for agricultural purposes. One residential area, containing four mobile homes, and two residences occur within the project area and infrequent scattered residences occur within the surrounding areas. The development of the project would not divide an established community because no built-up areas or defined communities occur within or surrounding the project area.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The project area lies within Placer County. The project area is designated Agriculture in the Placer County General Plan, and is zoned Farming and "Minimum Building Site as Shown on Map" (F-B-X). The project area is predominantly agricultural, with most of the area used for rice farming. It also includes water courses/wetland areas and riparian habitat, described in more detail in Section 3.5, Biology. The water courses/wetland areas are situated along Pleasant Grove Creek, which traverses the site. One residential area, containing four mobile homes, and farm outbuildings are located between the southern boundary of the project area and Pleasant Grove Creek. Land uses are shown on Figure 3-7.

The proposed use of the site would not conflict with the current Placer County General Plan and zoning designations. The City of Roseville would purchase the site to construct the proposed project. Once purchased, the project area would become unincorporated City-owned property and would be managed through City policies developed consistent with project objectives. Included in the purchase of the site is

an easement for the construction and maintenance access road from Sunset Boulevard West to the northern boundary of the site. This is an existing private road. An easement would be required to be obtained for a small portion of a parcel adjacent to the eastern project boundary associated with the bypass channel diversion of Pleasant Grove Creek. This occurs on parcel No. 017-100-041.

Use of the site as a retention basin is a permitted use under the existing agricultural/farming land use designation and zoning of the site, respectively. The site would be managed as public open space by the City of Roseville upon purchase (see Chapter 2, Project Description).

For certain project components, the project would be subject to the jurisdiction of the California Department of Safety of Dams, the California Department of Fish and Game, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service, and must also comply with the goals, policies, and regulations of these agencies.

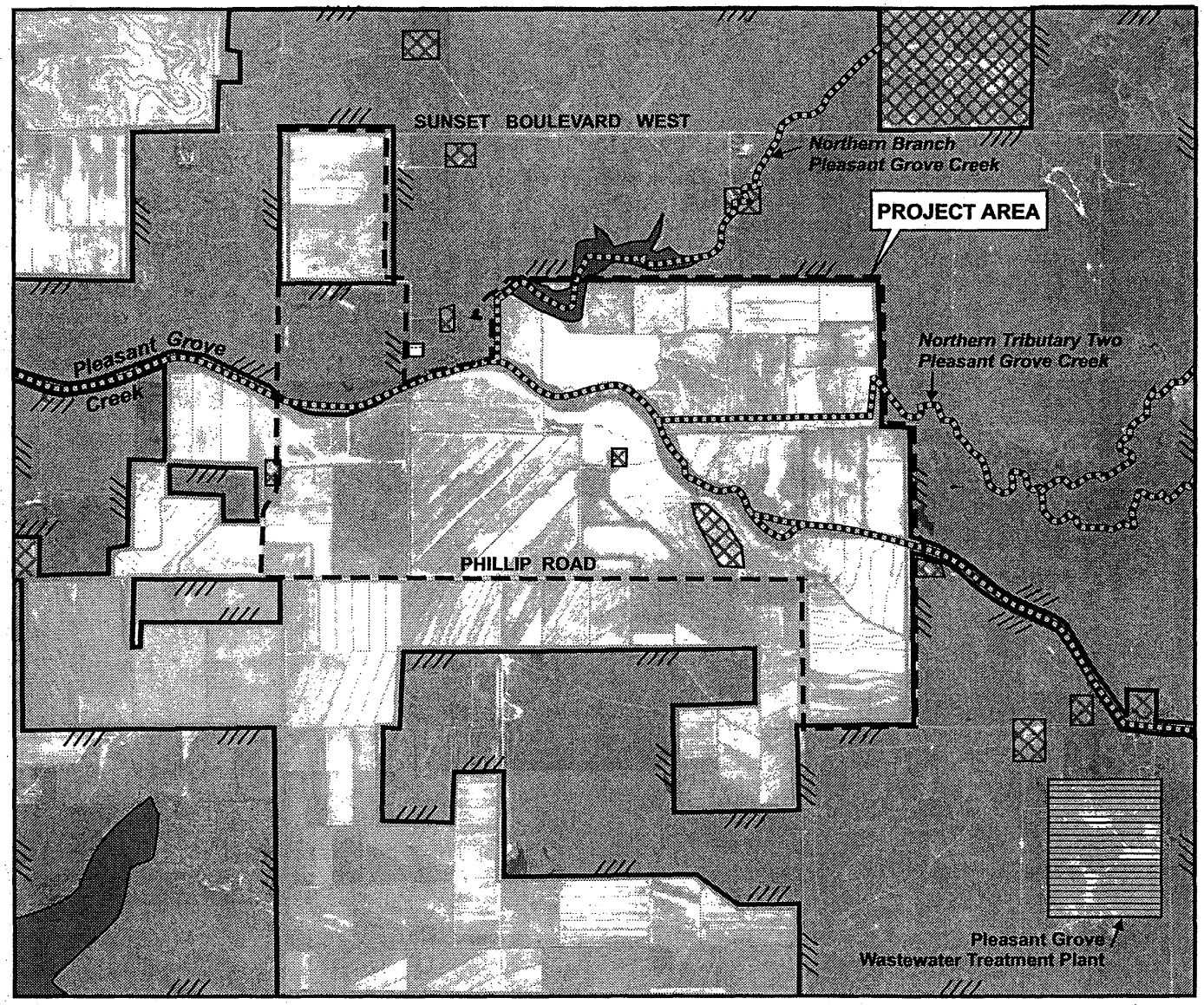
A summary of applicable goals and policies from the City of Roseville's General Plan (1992) and Bikeway Master Plan (2001) are presented below. A summary of applicable goals and policies in Placer County's General Plan (1994) are also identified, although once purchased, the project area would not be subject to this plan. The identified goals and policies of the City of Roseville's General Plan and Bikeway Master Plan, and Placer County's General Plan are provided in Appendix A. The ability of the project to comply with these relevant goals and policies is discussed below, as is the proposed project's consistency with regulations of the California Department of Safety of Dams. For the purposes of this section, those goals and policies relating to biology and the project's consistency with these goals and policies are presented in Section 3.4, Biological Resources; no conflicts with biological goals and policies have been identified.

City of Roseville General Plan and Bikeway Master Plan

Growth Management

> *Section II, Growth Management Goals 1, 2, 3, and 6.* Manage and encourage growth of the community.

The project would comply with these goals because the retention basin would provide stormwater retention for existing and already entitled City of Roseville projects and the approved Northwest Rocklin Annexation Area. It would also facilitate the development of the proposed West Roseville Specific Plan area and the remainder of the MOU area through provision of retention storage for flood waters generated by future development in these areas. Such development is regulated by an MOU between the City of Roseville and Placer County, and is discussed in detail in Section 3.17, Mandatory Findings of Significance.



Source: Placer County, 2001. Georeferenced aerial photography.

LEGEND

- Site Boundary
- Agriculture (Row Crops/Grazing/Open Space)
- Wetland Areas/Riparian Habitat
- Water Courses
- Agriculture (Rice Farming)
- Radio Tower
- Residential
- Rural Residential/Miscellaneous Development
- Industrial

N

2000 0 2000 4000

Scale (feet)

Figure 3-7
EXISTING LAND USE

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

6/11/02 vsa \43-00067030.00 \F3-7_ExLU.cdr

> *Section II, Community Form – Community Involvement and Interjurisdictional Cooperation (CI and IC) Policies 3 and 4.* Coordinate with local state, federal and other jurisdictional agencies on regional issues of importance including air quality, transportation, water supply, sewage treatment, solid waste disposal and recycling, flood control, hazardous waste management, resource protection and transit.

The proposed project would provide multi-jurisdictional benefit to the City of Roseville, Place County, the City of Rocklin, and Sutter County, all of which have been consulted.

> *Section II, Community Form – Relationship of New Development (RND) Policy 1.* New development areas and facilities shall be linked to existing developed areas of the community through open space systems, bikeway, trail and pedestrian systems, road networks, and other physical connections.

The project area is located along Phillip Road, an existing roadway, and is adjacent to the MOU area, which the City of Roseville proposes to include in its Sphere of Influence as part of a separate project. The proposed project's open space areas abut these areas and provide contiguous open space. The proposed project could be linked to future development in this area, and to the proposed West Roseville Specific Plan area in particular, through creation of bikeways, trail and pedestrian systems created by others in the future. This is discussed in Section 3.14, Recreation. Because the fees collected for flood retention cannot be used for recreational purposes, these linkages would require other funds or other proponents.

Open Space

> *Section V, Open Space System Goals 3 and 4, Policies 1, 2, 3, 5, 6, 7, 8, Section VI, Parks and Recreation Goals 1 and 2, Policy 11.* Provide a comprehensive system of public open space for the community. The public open space system should consider the preservation of natural habitat areas in developing linkages and provide opportunities for public education and recreation. Sensitive habitat areas that have the potential to be impacted should be avoided when developing linkages.

The project would comply with these goals and policies because the City of Roseville would manage the site as public open space. This would increase the area of public open space available for the community, bordering Roseville's proposed expanded Sphere of Influence as part of a separate project. The proposed project would thus provide an open space buffer at the western edge of the City's Sphere of Influence. The project would also protect natural habitat areas and would provide opportunities for public education and recreation. This is discussed in greater detail in the Project Description and in Section 3.4, Biological Resources and Section 3.14, Recreation.

Floodplain Management

> *Section V, Vegetation and Wildlife Policies 4 and 5.* Require dedication of the 100-year floodplain and preservation of contiguous areas in excess of the 100-year floodplain to protect habitat and wildlife values. Limit recreational values within the 100-year floodplain and require setback areas for trails and other public recreation uses so that natural resource areas are not adversely affected.

The project would comply with these policies because the retention basin has been designed to incorporate and expand the 100-year floodplain, and to protect contiguous areas having habitat and wildlife values along Pleasant Grove Creek. The project does not include recreation as a component. However, future recreational use would be limited in this zone, as discussed in Section 3.14, Recreation.

> *Section VIII, Flood Protection Goals 1, Policies 3, 5, 6 and 8.* Minimize the potential for flood damage by providing adequate flood control within the City and on a regional level.

The project would further these goals and policies because it would provide adequate flood control for entitled projects and future projects within the City of Roseville and in certain portions of Placer County in accordance with the Pleasant Grove Watershed Mitigation Fee, City of Roseville report (Civil Solutions, 2000).

> *Section VIII, Flood Protection Goal 2, Policy 9.* Pursue flood control solutions that are cost-effective and minimize environmental impacts. Where feasible, maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality and open space functions.

The project would comply with this goal and policy because the retention basin has been designed to provide flood control that is cost effective while minimizing environmental impacts. A screening evaluation of alternative approaches to creating the required storage volume were explored, and it was determined that taking advantage of the natural topography by creating embankments through a balanced cut and fill approach was more cost effective than creating storage through excavation (URS/PWA, 2002). The proposed project is designed to minimize environmental impacts, retaining and restoring the natural stream courses and adjacent habitat. It would maintain water quality and enhance open space functions, and would accommodate future recreation opportunities to be provided by others.

Water Quality and Erosion Control

> *Section V, Groundwater Recharge and Water Quality Goals 1 and 2, Policies 1 and 2.* Improve and enhance the water quality of surface water and groundwater resources. Utilize cost-effective urban runoff controls and implement erosion control and topsoil conservation measures to limit pollutants and sediments from entering watercourses.

The proposed project represents a low level of opportunity to improve surface and groundwater quality, because the project is a retention basin and its purpose is to retain surface water. The subsurface sediments of the site are clay, which prevents interaction between surface water and groundwater. It is unlikely that that the retention basin would provide a significant opportunity for recharge of groundwater. The proposed project would not contribute to additional urban runoff and would reduce pollutants entering watercourses due to the elimination of rice farming.

> *Section VIII, Seismic and Geologic Hazards Policy 6.* Require contour grading, where feasible, and re-vegetation to mitigate the appearance of engineered slopes and to control erosion.

The proposed project would comply with this policy because contour grading and erosion control measures would be employed during construction of the retention basin. Disturbed areas would be hydroseeded, and if required, straw mulch or biodegradable erosion control fabric would be applied to the embankment slopes and along low-flow/bypass channels, which may be more susceptible to erosion.

Bikeway and Trail Systems

> *Bikeway Master Plan, Recreation Policy b.* Provide a comprehensive bikeway/trail and open space system for the community.

Fees collected by the City of Roseville for construction of the proposed project cannot be used to create recreational facilities. However, the project has been designed to accommodate a future bikeway/trailway and open space system that could be linked to adjacent facilities to the east of the site. The project area would be managed by the City of Roseville as public open space, which would increase the area of public open space available in the area.

> *Bikeway Master Plan, Interconnectivity Objective, Connectivity Policy.* Create a bikeway system that links public open spaces, recreational facilities, transport facilities and other community facilities. Coordinate with Placer County and other jurisdictions to ensure consistency with existing bikeway systems.

As described above, fees collected by the City of Roseville for construction of the proposed project cannot be used to create recreational facilities. However, the project has been designed to accommodate a future bikeway/trailway and open space system that could be linked to adjacent facilities to the east of the site. No designated Placer Parkway bikeway systems are located in the vicinity of the proposed project.

Miscellaneous

> *Section IX, Noise – General Policy 10.* Regulate construction-related noise to reduce impacts on adjacent uses consistent with the City's Noise Ordinance.

The project would comply with this policy because construction activities would be undertaken in accordance with the City of Roseville's Noise Ordinance.

As discussed in Section 3.11, Noise, noise levels at three of the surrounding residences would be acceptable without mitigation. The remaining two surrounding residences would require mitigation in the form of sound attenuation barriers to reduce noise levels to an acceptable level.

Placer County General Plan

Agriculture

> *Placer County's General Plan Goals 1H, 7A and 7B, Policies 1H1, 1H5, 1H6, 7A1, 7A2, 7A3, 7A4 and 7A13.* Maintain agricultural uses and require development with or adjacent to designated agricultural areas to incorporate design, construction and maintenance techniques that protect agricultural use. A buffer or setback shall be required for new non-agricultural development immediately adjacent to agricultural lands.

As discussed in Section 3.2, Agricultural Resources, agricultural use of the site would not likely continue during operation of the project, although it may be possible that adjacent landowners with existing farming operations may consider portions of the site to be viable for rice farming, as an extension of their existing operations. The current owner of the Reason Farms parcels reports that continued attempts to grow row crops were unsuccessful due to the soil conditions (Amarel, 2002).

It is unlikely that the proposed project would directly impact adjacent agricultural use. The only ground disturbance associated with the development of the project would be from the construction of the embankments, inlet/outlet structures and low-flow/bypass channels. The remainder of the site is currently used for rice farming and would be left fallow. As the majority of the site will remain undeveloped, it is not anticipated that a buffer or setback would be required.

Growth Management

> *Goal 1F, Policies 1N12, 4E11 and 8B5.* Coordinate with neighboring jurisdictions to mitigate the impacts of new development in the County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.

The proposed project would comply with this goal and these policies because the retention basin would provide retention storage for flood waters generated by entitled and future projects in the City of Roseville and certain portions of Placer County, thus reducing runoff into Sutter County during the design storm events.

Open Space

> *Goals 1I and 6E, Policies 6E3, 6E4 and 6E5.* Establish and maintain interconnected open space areas. These open space areas should support the preservation and enhancement of natural landforms, vegetation, and resources when designating areas for public open space.

The proposed project would comply with these goals and policies because the project area would be managed by the City of Roseville as Public Open Space and would increase the area of public open space in the area. The proposed project is designed to support the preservation and enhancement of natural landforms, retaining and restoring the natural stream courses and adjacent habitat. It would maintain water quality and enhance open space functions. This is discussed in greater detail in Section 3.4, Biological Resources.

Floodplain Management

> *Goals 4F and 8B, Policies 4F3, 4F6, 4F7, 4F9 and 4F11.* Minimize the potential for flood damage by providing adequate flood control within the County and on a regional level. Provide protection specifically for agricultural and related activities from flooding.

The proposed project would comply with these goals and policies because it would provide retention storage for entitled projects and future projects within the City of Roseville and in certain portions of Placer County, thus reducing flooding in agricultural and other areas in Sutter County.

> *Policies 4F5, 6A2 and 8B1.* Require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance. Promote flood control that maintains natural conditions within the 100-year floodplain of rivers and streams.

The proposed project would assist in the furtherance of these policies by providing retention storage for existing and entitled development in Roseville and in certain portions of Placer County. The flood control features of the proposed project are designed to maintain and enhance natural conditions within the 100-year floodplain of Pleasant Grove Creek.

> *Goal 4E, Policies 4E1, 4E2, 4E3, 4E8, 4E10, 4F12, 6A5, 6A7 and 7D3.* Collect and dispose of stormwater that reduces damage or inconvenience to the community and enhances the environment. The County shall encourage the use of natural stormwater drainage systems that preserve or enhance natural features. Recreational opportunities and aesthetics should be considered in the design of stormwater ponds. The stormwater collected, if of adequate quality, may be used to replenish local groundwater basins,

restore wetlands and riparian habitat, and irrigate agricultural lands. Mitigation measures should be used to improve the quality of the stormwater collected.

The proposed project would collect stormwater (i.e., close the outlet gates so water could no longer flow freely) only very infrequently, because the facility is designed to retain water only in the event of a hypothetical 8-day, 100-year storm event. While the proposed project would contribute to reduction of damage or inconvenience to the community and would enhance the environment, the opportunity to make other use of stormwater collected in the retention basin is minimal.

Policies 4F10, 6A4, 6A12, 8B7 and 8B8, Implementation Programs 6.3. Require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values and to incorporate opportunities for recreation, where appropriate.

The proposed project would comply with these policies as the retention basin has been designed to preserve scenic resources and provide future opportunities for recreation, to be implemented by others. This is discussed in more detail in Section 3.1, Aesthetics and Section 3.14, Recreation.

Recreation

Policies 5A11, 5A12, 5A13, 5A14 and 5A22. Encourage recreational development that complements the natural features of the area, including the topography, waterways, vegetation and soil characteristics. The County shall encourage compatible recreational use of riparian areas where public access can be balanced with environmental values and private property rights.

The proposed project would comply with these policies because the retention basin has been designed to provide opportunities for future recreational development to be provided by others, consistent with natural resources in the project area. This is discussed in greater detail in Section 3.14, Recreation.

Policy 5A15. Promote the provision of non–membership-restricted hunting areas on public and private land in the western part of the County.

Since there is currently no non–membership-restricted hunting on the site, the proposed project would be passive regarding hunting policies of the County. The City of Roseville could allow hunting on either a restricted or non-membership basis. The development of the project would not affect surrounding areas that are currently used for hunting. This is discussed in greater detail in Section 3.14, Recreation.

Goal 5C, Policies 5C2 and 5C3. To support the development of interconnected hiking, riding, and biking trails and paths throughout the County. These trails and paths shall connect developed residential areas to the countywide trail system, regional trails, and the

trail or bikeway plans of cities. The County shall support the integration of public trail facilities into the design of flood control facilities and other public works projects wherever possible.

There are no designated or planned hiking, riding or biking trails and paths in this area of the County. The design of the proposed project has considered the proposed West Roseville Specific Plan, and it would provide opportunity for the future development of a trail system that would provide a linkage to that area. This is discussed in greater detail in Section 3.14, Recreation. As described above, fees collected by the City of Roseville for construction of the proposed project cannot be used to create recreational facilities.

Miscellaneous

Goals 1F and 1K, Policies 1K5 and 1N12. Protect visual and scenic resources and require new roads, parking and utilities to be designed to minimize visual impacts.

The proposed project would comply with these goals and policies because the retention basin has been designed to consider visual and scenic resources, by maintaining the majority of the existing landform. Embankments would be contoured to minimize adverse visual impacts, and reseeded. No permanent new roads, except the access roads for maintenance are required. No permanent parking facilities or utilities are required for project operation. This is discussed in greater detail in Section 3.1, Aesthetics.

Policy 8A5. In landslide areas, the County shall prohibit alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.

The proposed project would comply with this policy because the conceptual design of the retention basin has considered the requirements of the California Department of Safety of Dams, which will review the final design.

The existing topography is relatively flat, and the only affected slopes in the project area will be those created for embankments. Embankments would be designed so that they would not be susceptible to landslides or other types of slope failures. The lack of existing slopes on or near the site indicates that the hazard from slope instability, potentially resulting in landslides and debris flows, is negligible.

California Department of Safety of Dams

Division 3 of the California Water Code placed the supervision for safety of all dams and reservoirs larger than a specified minimum size under the jurisdiction of the California Department of Water Resources. The Division of Safety of Dams (DSOD) administers the code provisions. The division independently

analyzes and evaluates plans and specifications for construction of new dams and for enlarging, repairing, alteration of or removing existing dams, and must grant approval in writing before the owner may proceed with construction. The DSOD inspects and evaluates each dam and reservoir during construction to verify compliance with the approved plans and specifications and to ensure that changes or unforeseen foundation conditions are recognized and the design is modified as necessary. The DSOD also inspects, monitors, and evaluates dam operation annually, or more frequently as necessary to ensure safety (DSOD, 1993).

An application for approval of plans and specifications must be filed in duplicate with a copy to the State Department of Fish and Game. The proposed project falls within the jurisdiction of the DSOD because it would impound more than 50 acre-feet of water. The design and operation of the project must comply with the requirements of the DSOD, as identified above and as described in Section 3.8, Hydrology and Water Quality.

The proposed project complies with all relevant goals and policies of the City of Roseville, and proactively furthers some goals related to floodplain management, growth management, and open space. Although the proposed project would not be subject to the goals and policies of Placer County, it would comply with all relevant goals and policies of the County except for (1) that related to the promotion of non–membership-restricted hunting on the project site, and (2) maintenance of agricultural uses. Since there is currently no non–membership-restricted hunting on the site, the proposed project would be passive regarding hunting policies of the County. The proposed project would not contribute to the maintenance of agricultural use. Loss of important farmland in Placer County has been identified as a significant impact in Section 3.2, Agricultural Resources. The proposed project would also be constructed in accordance with the regulations of the DSOD. As described above, those goals and policies relating to biology and the project's consistency with these goals and policies are presented in Section 3.4, Biological Resources; no conflicts with the City of Roseville's biological goals and policies have been identified. For all of these reasons, the proposed project would not conflict with applicable land use plans, policies or regulations of an agency that would have jurisdiction over the proposed project, resulting in a less than significant impact.

c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?

The project area is located within the area covered by the Placer Legacy Open Space and Agricultural Conservation Program Planning Agreement, found in the Natural Community Conservation Planning Agreement (Placer Legacy, 2001). The goal's statement of the agreement is as follows:

> "Placer County has been blessed with extensive and diverse natural resources: woodlands, forests, grasslands, riparian areas, lakes, rivers and an assortment of open spaces. It is the goal of [the Placer Legacy Program] to develop specific, economically viable implementation programs which will enable the residents of Placer County to preserve a sufficient quantity of these resources to maintain a high quality of life and an

abundance of diverse natural habitats while supporting the economic viability of the County and enhancing property values. The [Placer Legacy Program] will further the various open space and natural resource goals of the Placer County General Plan and associated General Plans of the six cities in Placer County." (Placer Legacy, 2001)

The specific objectives of the Placer Legacy Program and the goals and objectives, are identified in Section 3.4, Biological Resources.

The ability of the project to comply with the objectives, goals, and policies of the Placer Legacy is discussed below. For the purposes of this section, those goals and policies relating to biology and agricultural land use and the project's consistency with these goals and policies are presented in Section 3.4, Biological Resources and Section 3.2, Agriculture Resources.

Maintain a viable agricultural segment of the economy.

As discussed in Section 3.2, Agricultural Resources, and previously in this section, agricultural use of the site is not likely to continue during operation of the project, although it may be possible that adjacent landowners with existing farming operations would consider portions of the site to be viable for rice farming, as an extension of their existing operations. However, the proposed project would not make the existing agricultural segment of the economy less viable. It would protect downstream agricultural lands from flooding during design flood events, thus contributing to the maintenance of these activities.

Conserve natural features necessary for access to a variety of outdoor recreation opportunities.

The proposed project would comply with this objective because the design of the retention basin has incorporated the preservation and enhancement of natural resources within the project area. A variety of passive outdoor recreation opportunities could be created within the project site. As described above, fees collected by the City of Roseville for construction of the proposed project cannot be used to create recreational facilities. However, the project has been designed to accommodate a future bikeway/trailway and open space system that could be provided by others. These features would focus primarily along the riparian corridor of the Pleasant Grove Creek, which is conserved by the proposed project. This is discussed in greater detail in Section 3.14, Recreation.

Retain important scenic and historic areas.

The proposed project would comply with this objective because the design of the retention basin has incorporated the preservation and enhancement of natural resources within the project area. These include preservation of the riparian corridor along the Pleasant Grove Creek and reconstruction of Northern Tributary Two of Pleasant Grove Creek to approximate its former location prior to its realignment for rice farming. No historic areas were identified at the project site. This is discussed in greater detail in Section 3.1, Aesthetics.

Preserve the diversity of plant and animal communities.

As discussed in Section 3.4, Biological Resources, the proposed project would convert lands within project area from agricultural to seasonal wetland habitat, thus reducing the area of agricultural lands in western Placer County. The conversion of these lands to retention basins with low-flow channels and swales would ultimately create a more diverse plant and animal community than currently exists in the cultivated portion of the project area. This is discussed in greater detail in Section 3.4, Biological Resources.

Protect endangered and other special-status plant and animal species.

As discussed in Section 3.4, Biological Resources, the proposed project would conserve the existing high quality riparian habitat along the main branch of Pleasant Grove Creek, and it would also enhance Northern Tributary Two by restoring it to its approximate historic location. In addition, an opportunity would be created for another entity to preserve vernal pool grasslands in the northwestern parcel of the project site (the City is not proposing to develop this parcel, nor is the project). This conservation and potential opportunity for preservation would provide habitat for the endangered and other special-status plant and animal species known or likely to occur within the project area. These species are identified in Section 3.4, Biological Resources. Conservation of the riparian habitat and the potential opportunity for preservation of the vernal pool grasslands are also discussed in greater detail in Section 3.4.

Separate urban areas into distinct communities.

This objective is not relevant and would not comply or be in conflict with the proposed project because the areas currently surrounding the project areas are not urban.

Ensure public safety.

The proposed project would comply with this objective of the Placer Legacy as the retention basin would assist in providing adequate stormwater retention storage for entitled and future projects in the City of Roseville and certain portions of Placer County, reducing the risk of flooding in Sutter County during design flood events.

In summary, the project broadly complies with the objectives, goals and policies of the Placer Legacy Program. Therefore, the development of the project would result in a less than significant level of impact.

Conclusion

The development of the project would:

- not divide an established community, and there would be no impact;

- not conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project, and there would be a less than significant impact; and

- broadly comply with the Placer Legacy Program. Conflicts are minor and are considered to be a less than significant impact.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

Amarel, Robert. 2002. Personal communication with J. Becher of URS Corporation. May 14, 2002.

City of Roseville. 2001. Bicycle Master Plan. City of Roseville Public Works Department/Transportation Division, June 2001.

City of Roseville. 1992. General Plan. City of Roseville Planning Department, November 18, 1992.

Civil Solutions. 2000. Pleasant Grove Watershed Mitigation Fee for the City of Roseville. May 5, 2000.

Division of Safety of Dams (DSOD). 1993. Guidelines for the Design and Construction of Small Embankment Dams. State of California Department of Water Resources Division of Safety of Dams. Reprinted January 1993.

Placer County/City of Roseville. N.D. Memorandum of Understanding, Placer County/City of Roseville. Adopted by the Council of the City of Roseville. January 5, 2000.

Placer County, Crawford Multari & Starr, DKS Associates, Psomas and Associates, Jones & Stokes Associates, Recht Hausrath & Associates and J. Laurence Mintier & Associates. 1994. Placer County General Plan. Placer County, August 16, 1994.

Placer Legacy (Placer Legacy Open Space and Agricultural Conservation Program). 2001. Natural Community Conservation Planning Agreement, an understanding by and among: the County of Placer; the California Department of Fish and Game; the United States Fish and Wildlife Service; and the National Marine Fisheries Service. September 10, 2001.

URS/PWA (URS Corporation and Philip Williams & Associates). 2002. Screening Level Evaluation of Alternative Site Locations for the City of Roseville Retention Basin. March 8, 2002.

3.10 MINERAL RESOURCES

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
10. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				✓

a) Result in the loss of availability of a known mineral resource of value?

According to the mineral land classification map (CDMG, 1995), the project vicinity is classified as Mineral Resource Zone (MRZ) 1 or MRZ-3, which are zones having no significant aggregate deposits, or aggregate deposits of unknown significance. Therefore, the proposed project would not result in the loss of availability of a known mineral resource, and there would be no impact.

b) Result in the loss of availability of a locally-important delineated mineral resource recovery site?

No known locally-important mineral resource recovery sites are located within the project area. Therefore, there would be no loss of such a site, and there would be no impact.

Conclusion

The development of the project would:

- not result in the loss of availability of a known mineral resource, and there would be no impact; and
- not result in the loss of availability of a locally-important mineral resource recovery site, and there would be no impact.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

Reference

CDMG (California Division of Mines and Geology). 1995. Mineral Land Classification of Placer County, California. DMG Open File Report 95-10.

3.11 NOISE

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
11. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?	✓			
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?				✓
c) Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	✓			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity?

Noise from the proposed project would be limited to construction noise sources. There would be no on-site noise receptors, and according to Noise Ordinance Section 9.214.140, City operations and activities are exempt from Noise Ordinance regulation.

Because some construction activities would occur near project site boundaries, County noise standards would also apply where construction noise is detectable at off-site locations (adjacent lands under the County's jurisdiction). However, the Placer County Noise Element of the General Plan does not address

construction noise level limits. Furthermore, the Placer County Municipal Code does not contain an explicit Noise Ordinance. However, the Placer County Board of Supervisors has issued a Minute Order that controls construction noise by limiting the hours of operation to the daytime hours of 6 A.M. to 8 P.M., Monday through Friday and 8 A.M. to 6 P.M. Saturday. This order also requires proper maintenance of equipment mufflers and the indication of the staging area on the improvement plans.

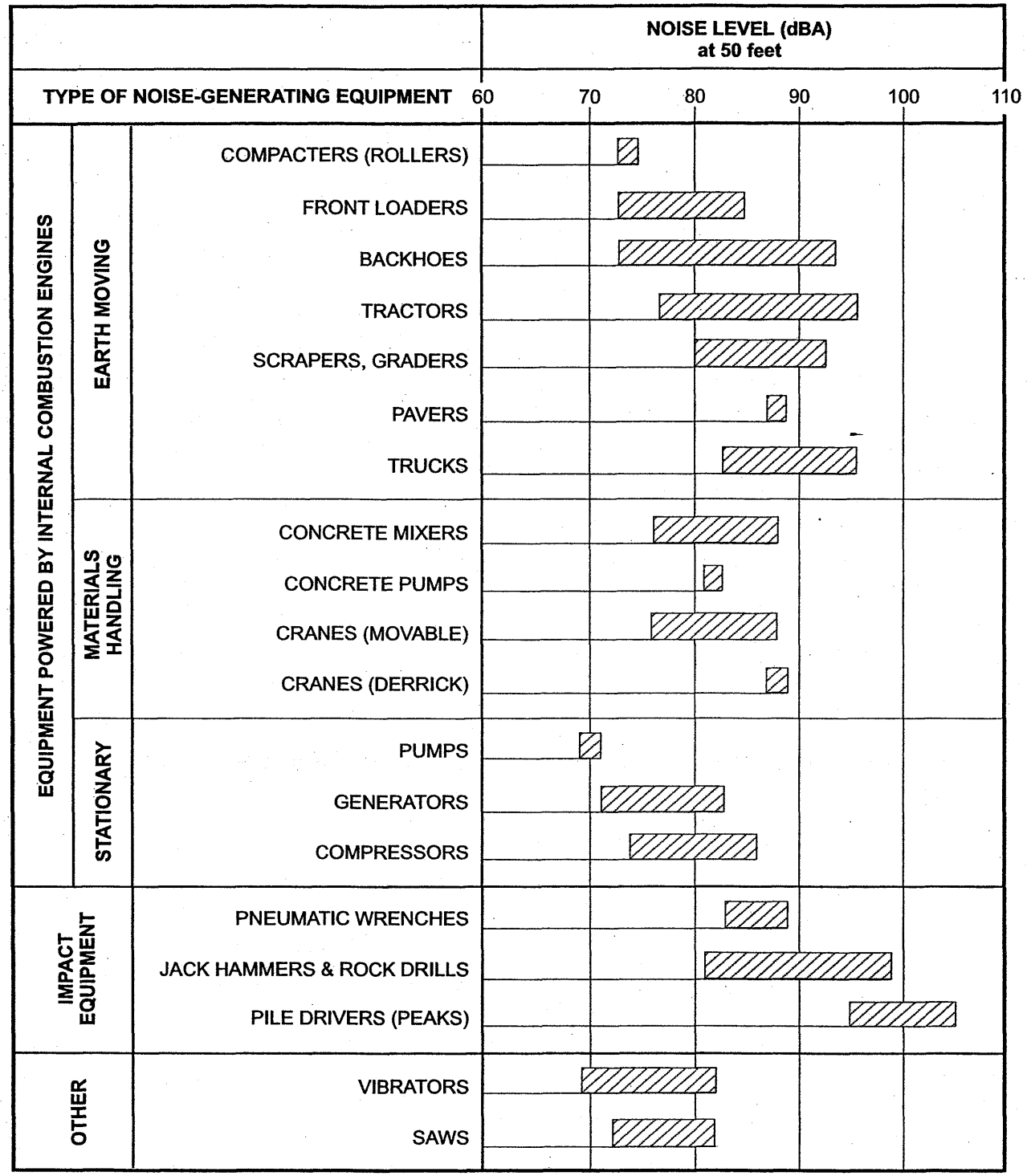
In the absence of County standards defining sound level limits for off-site locations, the EPA guidelines were used to evaluate the significance of a noise impact. Research has shown that whenever intrusive noise exceeds approximately 60 dBA indoors, there will be interference with speech communication. A steady A-weighted background level of 60 dBA will produce 98 percent sentence intelligibility; that of 65 dBA will produce 93 percent intelligibility; that of 70 dBA will produce 66 percent intelligibility; and that of 75 dBA will produce 2 percent intelligibility. Therefore, assuming that the building shell of a residential structure will provide at least 15 dBA noise attenuation, exterior sound levels exceeding 75 dBA at off-site locations will be considered significant (on-site construction noise is exempt by ordinance as discussed above).

The number of each type of construction equipment was taken from the description of construction equipment listed in Section 2.5.6.1 of the Project Description. The noise level produced by each type of equipment was taken from the Typical Construction Equipment Noise Generation Levels presented in Figure 3-8. The distances from the construction locations to nearby residences were determined from the City of Roseville Retention Basin Site Map (Figure 2-4) and the City of Roseville Retention Basin Plan View (Figure 2-5) Map. Five potential sensitive noise receptor locations were identified, as shown on Figure 3-9.

The following assumptions were made to calculate the expected construction-related noise levels at these residential locations: (1) each piece of equipment is running for the entire hour, (2) any given piece of equipment working on a bypass channel or an embankment is near a sensitive receiver for fifteen minutes in every hour, (3) two concrete mixers are working on an inlet or outlet structure in any hour, and (4) two bulldozers or scrapers, one compactor, and one water truck are working on a given embankment area at one time. Noise from construction equipment would be expected to attenuate at the standard rate of 6 "A"-weighted decibels (dBA) per doubling of distance from the source.

The ambient noise level at each residential area (numbered 1 through 5, starting at the westernmost residence and continuing clockwise) was measured with a Brüel & Kjær Type 2236 C-007 Type 1 Integrating Sound Level Meter (Serial Number 2015788) during a site visit on May 22, 2002. All measurements were made in the immediate vicinity of the residence, with the exception of residences 2 and 5; these measurements were made at the end of the driveway to each home, due to access restrictions. However, in both cases, the noise environment in the vicinity of the measurement was very similar to that near the residence. The sound level meter was calibrated with a Brüel & Kjær Type 4231 Acoustical Calibrator (Serial Number 1850301) following the site visit and was shown to be in compliance.

Table 3-16 indicates the expected construction sound level and the existing ambient noise level at each of the five nearby permanent residential locations. The measurement locations are depicted in Figure 3-9. Noise calculations are provided in Appendix D.



Source: U.S. EPA, 1971.

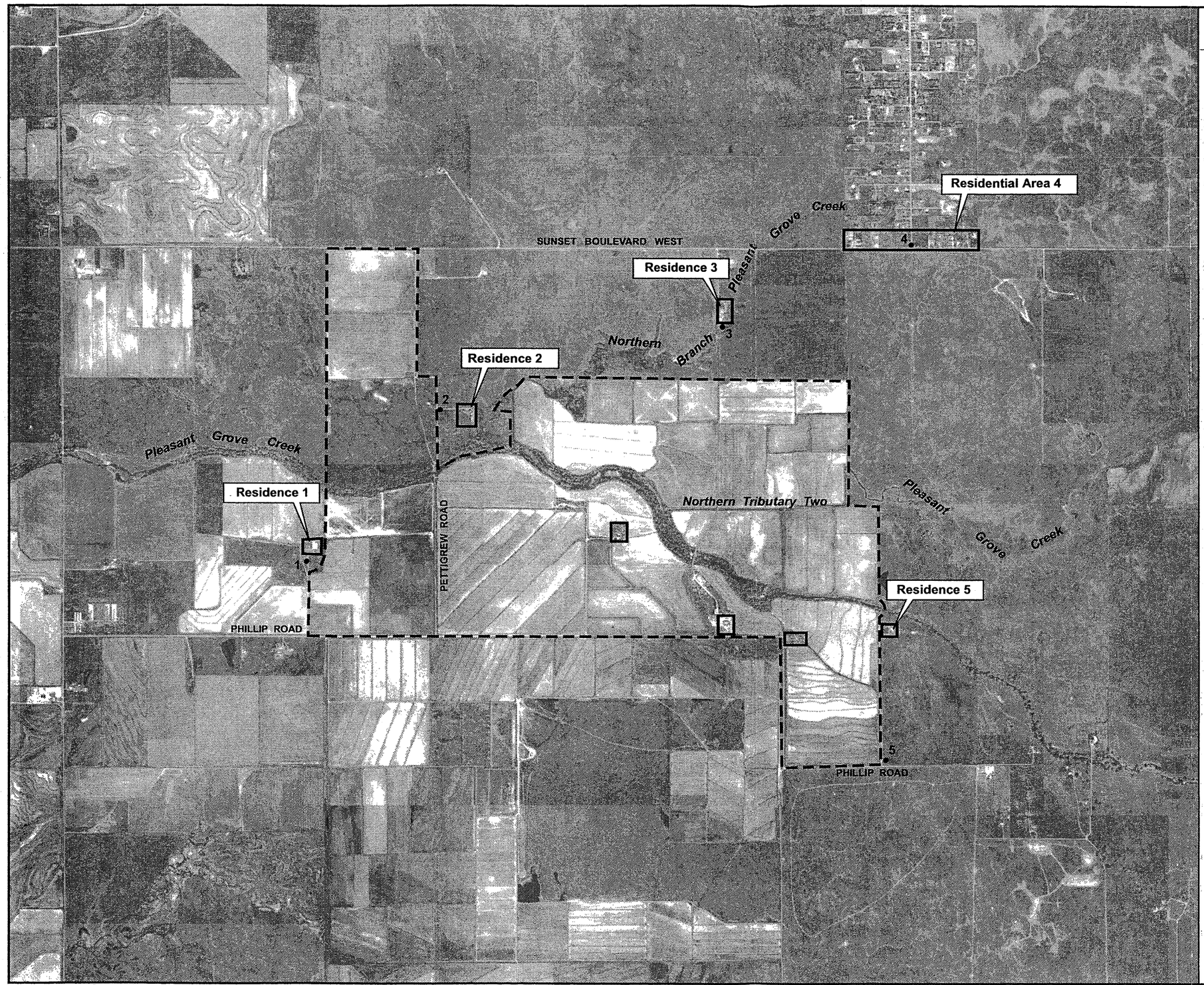
Figure 3-8
TYPICAL CONSTRUCTION EQUIPMENT NOISE GENERATION LEVELS

Initial Study
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Roseville, California

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URS PWA

6/11/02 vsa \43-00067030.00\F3-8_equipnoise.cdr



LEGEND

- Project Area
- Residences/Residental Area
- Noise Measurement Location

N

1000 0 1000 2000

Scale (feet)
1:24:000

Figure 3-9
LOCATIONS OF BASELINE NOISE MEASUREMENTS

Initial Study
City of Roseville Retention Basin
Roseville, California

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URS PWA

Source: Placer County, 2001. Georeferenced aerial photography.

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Table 3-16
Noise Levels at Nearby Residences

Location Number	Residence Location	Construction Noise Level Range	Measured Ambient Noise Level
1	8100 Phillip Road	68-80 dBA L_{eq}	46.5 dBA L_{eq}
2	South end of Pettigrew Road	55-68 dBA L_{eq}	40.0 dBA L_{eq}
3	Along northern access road	54-67 dBA L_{eq}	52.8 dBA L_{eq}
4	Sunset Boulevard West & Amoruso Way	49-62 dBA L_{eq}	60.4 dBA L_{eq}
5	5730 Phillip Road	73-86 dBA L_{eq}	41.9 dBA L_{eq}

Table 3-17 indicates the distance from each residence to the nearest point of each type of construction associated with the project.

Table 3-17
Distances from Residences to Construction

Location Number	Distance to Nearest Embankment	Distance to Nearest Inlet/Outlet Structure	Distance to Nearest Bypass Channel Area
1	75 feet	2,475 feet	2,625 feet
2	975 feet	2,250 feet	2,625 feet
3	1,650 feet	2,775 feet	2,175 feet
4	5,500 feet	4,500 feet	4,500 feet
5	1,200 feet	300 feet	300 feet

Construction sound levels at 5730 Phillip Road and at 8100 Phillip Road are estimated to be as high as 86 dBA L_{eq}. These sound levels would result in a substantial temporary increase in ambient noise levels in the project vicinity and may disrupt speech communication at these residences during construction, which would be considered a significant impact. Mitigation of the noise levels at these residences will be necessary to comply with EPA guidelines, as described below.

Mitigation Measure N-1

Consult with residents at 8100 Phillip Road and 5730 Phillip Road, and if they are agreeable, provide feasible noise mitigation such as sound attenuation barriers or temporarily boarding up windows facing construction.

If feasible and if agreed to by the affected residents, mitigation in the form of a sound attenuation barrier or boarding up of windows facing construction will be necessary to protect the residences at 5730 Phillip Road and 8100 Phillip Road from construction noise. If a barrier is used, it should be placed near the residential buildings. It is estimated that 12-foot-high barriers would reduce the sound level at each residence to below a level of significance. For residence 1, the barrier should be in place until all construction activity within 400 feet of the residence is completed. For residence 5, the barrier should be in place until all construction activity within 1,900 feet of the residence is completed. The exact placement and height of these barriers can be more fully determined at a later stage, when more information on construction sequencing and equipment is available. Since it is not certain that the residents would allow mitigation to be constructed, construction noise at these two residences is considered a potentially significant and unavoidable impact and is subject to further analysis in the focused EIR. No significant noise impacts to any other residence would occur.

Up to 65 worker vehicles will travel the northern and southern access roads to the site daily; these vehicles are expected to all arrive within the span of one hour. These roads will also handle the ingress of the heavy construction equipment; however, this equipment is expected to remain on the site for as long as it is needed each season. The routes from SR 70/99 and I-80 to the northern and southern site entrance points pass through land used for industrial, commercial, residential, and farmland purposes. The majority of the roadways comprising this route carry hundreds or thousands of vehicles per day. Only one area of the access routes, the area near the intersection of Sunset Boulevard West and Amoruso Way, will be affected by noise from the addition of this traffic. A group of homes at this intersection (residential area 4) and the home near the gravel driveway (residence 3) are the only residences along the access route not protected by a sound attenuation wall. The locations of these residences are shown in Figure 3-9.

Sixty-five cars traveling on a roadway at 45 mph, the speed observed on Sunset Boulevard West in the area, are expected to create a noise level of approximately 60 dB L_{eq} over one hour at residential area 4. This noise level will be much lower at residence 3, because the road material and proximity to the home dictate a maximum safe speed of approximately 25 mph. Since this noise level will only occur during two hours of the day, access traffic does not constitute a significant impact to the residences in the area.

Noise associated with demolition of the three existing residences on the project site will be of a temporary nature. Sound levels may be as high as 85 dBA at 50 feet from the source. The shortest distance between a permanent residence and a residence planned for destruction is approximately 1,500 feet. The sound level from demolition at this distance would be approximately 55 dBA, and would not result in a significant impact.

b) Exposure of persons to or generation of excessive ground borne vibration or noise levels?

No equipment utilizing vibration as a tool is planned for this project. All planned equipment will be located at distances greater than 75 feet from any potentially impacted residences during normal

operation; the equipment may be closer during brief periods of transit to or from the project site. Any nominal vibration caused by movement of the equipment will be damped to levels below perception through 75 feet of ground. No significant impact would occur.

c) Substantial permanent increase in ambient noise levels in the project vicinity?

The finished project will not include any noise generating mechanical equipment. No significant impact would occur.

e) If located within an airport land use plan or within two miles of a public airport, would the project expose people to excessive noise levels?

This project is not within an airport land use plan, nor is it located within two miles of a public airport.

f) If within the vicinity of a private airstrip, would the project expose people to excessive noise levels?

Two informal private airplane landing strips for planes are associated with local farming. One is on the property (see Figure 3-6), and one is across the road from it. However, the strip on the proposed project property would be abandoned as a result of the project. The other airstrip is used infrequently and was observed to only rarely create a noise level exceeding 60 dBA Sound Pressure Level (SPL) on the project site. The proposed project would not expose construction workers or people residing or working in the project area to excessive noise levels due to the presence of the airstrip.

Conclusion

The development of the project would:

- expose persons to or generation of noise levels in excess of applicable standards and is considered to be a potentially significant impact. Mitigation Measure N-1 would, if implemented, reduce this impact to a less than significant level. However, it is not certain that this mitigation measure would be implemented, and therefore this impact is considered potentially significant and unavoidable;

- not expose persons to or generation of excessive ground borne vibration or ground borne noise levels, and there would be no impact;

- not substantially increase ambient noise levels permanently above existing levels, and there would be no impact;

- result in a substantial temporary or periodic increase in ambient noise levels above existing levels at two locations and is considered to be a potentially significant impact. Mitigation Measure N-1 would, if implemented, reduce this impact to a less than significant level. However, it is not certain that this

mitigation measure would be implemented, and therefore this impact is considered potentially significant and unavoidable;

- not result in people residing or working in the project area to excessive noise levels generated from a public airport, and there would be no impact; and

- not result in people residing or working in the project area to excessive noise levels generated from a private airstrip, and there would be no impact.

Potential significant and unavoidable temporary construction noise requires further analysis and warrants carrying forward to the focused EIR.

Reference

U.S. Environmental Protection Agency. 1971. Noise from Construction Equipment and Operations, Building Equipment and Home Appliances. (Prepared under contract by Bolt, et al., Bolt, Beranek & Newman, Boston, Massachusetts.) Washington, D.C.

U.S. Environmental Protection Agency. 1972. Information on Levels of Environmental Noise Requisite to protect the Public health and Welfare with an Adequate Margin of Safety. Report 550/9-74-004, March.

3.12 POPULATION AND HOUSING

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
12. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	✓			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			✓	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			✓	

a) Induce substantial population growth in an area?

The proposed project could indirectly facilitate substantial population growth as it includes capacity for retention of stormwater generated from existing, entitled, and potential future growth in the region, as shown on Table 2-2 in the Project Description.

Projects included in the design storage capacity are:

- The proposed West Roseville Specific Plan, which would be annexed to the City of Roseville, and the remainder of the MOU area (see Figure 2-3 in the Project Description) which would be added to the City's Sphere of Influence. If developed, these areas would increase the projection of Roseville's population in 2020 from about 111,000 to about 137,000, with the City's buildout population (including development after 2020) projected at 147,000 (MuniFinancial, 2001a, 2001b).
- The proposed Roseville Energy Facility, which would have a negligible effect on population (URS, 2001).
- Effluent storage for the City of Roseville's Pleasant Grove Wastewater Treatment Plant (WWTP) to satisfy Mitigation Measure 6-2 of the Roseville Regional Treatment Service Area Masterplan EIR (ESA, 1996) (Phase 1 is currently under construction), which has a planned total capacity of 21 million gallons per day (mgd). If the plant were to provide wastewater treatment to the proposed West Roseville Specific Plan area and the remainder of the MOU area, or such other areas that may be developed and served by the Wastewater Treatment Service Area Master Plan, the plant would require additional treatment capacity. The project requirement for the West Roseville Specific Plan area and the remainder of the MOU area would be for an additional 4.12 mgd of plant capacity. Since the logical expansion of the plant is in 3 mgd increments, accommodation of the additional

4.12 mgd would require construction of two new treatment units of 3 mgd each (Montgomery Watson Harza, 2001). To build two new units on the WWTP site, the existing onsite effluent storage facility (for storage of tertiary treated effluent during a 24-hour wet weather flow condition) could be displaced. The existing onsite effluent storage facility could also be displaced by other plant operational modifications that may be identified in the future. For maximum operational flexibility, therefore, the storage requirement of 207 acre-feet could be conveyed instead to the proposed retention basin. If new treatment units were to be constructed, this could indirectly facilitate the additional population identified above. This potential indirect impact is discussed in more detail in Section 3.17(b) of this Initial Study.

- The Northwest Rocklin Annexation Area. This project has been approved and would result in a population increase in the City of Rocklin of approximately 11,620 residents at buildout. Because this project has already been approved, the proposed project could not be responsible for inducing this population (EIP Associates, 2001).
- Existing and entitled projects in the City of Roseville, which require 1,461.2 acre-feet of retention.

Of these projects, the retention basin could indirectly induce substantial population growth as a result of its accommodation of the proposed West Roseville Specific Plan and the potential future development of the remainder of the MOU area. The additional treatment capacity of the Pleasant Grove WWTP could also accommodate this growth, and provides an additional increment of capacity for growth beyond that identified above, because of the requirement that treatment units be constructed in 3 mgd increments. If development does not occur in these areas, then the retention storage capacity could be used to facilitate population growth in other areas, the amount of which is unknown. The proposed project's indirect inducement of population growth is a potentially significant impact.

b) Displace substantial numbers of existing housing?

One residential area consisting of four mobile homes and two additional residences is located within the project area (Amarel, 2002). It would likely be moved or demolished with development of the proposed project (Figure 2-4). The four mobile homes would likely be moved. Demolition of the two homes (if they cannot be feasibly moved) would not be a substantial impact on housing availability in Placer County, and would not necessitate the construction of replacement housing elsewhere. This impact is considered to be less than significant.

c) Displace substantial numbers of people?

Existing residences are identified in b) above. Five people reside at the mobile homes, five people reside at one house, and two people reside at the remaining house (Amarel, 2002). The development of the project would therefore displace approximately 12 people. Although the development of the project would displace people currently residing within the project area, the number of persons displaced is not substantial. Therefore, this impact is considered to be less than significant.

Conclusion

The development of the project would:

- indirectly induce substantial population growth and is considered to be a potentially significant and unavoidable impact;

- displace a small number of existing housing not requiring construction of replacement housing elsewhere. This is considered to be a less than significant impact; and

- displace a small number of people not requiring the construction of replacement housing elsewhere. This is considered to be a less than significant impact.

The impact relating to indirect substantial population growth requires further analysis and would be carried forward to the focused EIR.

References

Amarel, Robert. 2002. Current Owner of Reason Farms. Personal communication with D. Heick and J. Becher of URS Corporation. May 14, 2002.

EIP Associates. 2001. Northwest Rocklin Annexation (Sunset Ranchos) Draft Environmental Impact Report SCH No. 99102014. Prepared by EIP Associates, Sacramento California for the City of Rocklin, California. October 2001.

ESA (Environmental Science Associates). 1996. Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report. SCH No. 93092079. Prepared by ESA, Sacramento, California, for the City of Roseville, California, May 1996.

Montgomery Watson Harza. 2001. "Wastewater Evaluation of Urban Growth Areas." Technical Memorandum dated December 4, 2001 in Feasibility Analysis Technical Studies for Proposed West Roseville Specific Plan and City/County MOU Area prepared by the City of Roseville dated February 2002.

MuniFinancial. 2001a. 2020 Development Projections for the City of Roseville. Prepared for the City of Roseville. February 7, 2001.

MuniFinancial. 2001b. 2020 Citywide Development Projections with Proposed West Roseville Specific Plan. Prepared for the City of Roseville. November 9, 2001.

URS Corporation. 2001. Roseville Energy Facility Application for Certification. Submitted to the California Energy Commission by the Roseville Energy Facility, L.L.C. August 2001.

3.13 PUBLIC SERVICES

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
13. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a) Fire protection?			✓	
b) Police protection?			✓	
c) Schools?				✓
d) Parks?				✓
e) Other public facilities?			✓	

a) Fire Protection?

The project area is currently served by the Placer County Fire Department. Current response time to the project area is approximately 10 to 15 minutes from the Placer County Dry Creek Fire Station, which is the fire station closest to the project area (Boyle, 2002). Following the City's purchase of the project area and the implementation of the proposed project, the City of Roseville would provide fire services to the project area (Matheson, 2002). However, as the project area is not proposed to be annexed into the city limits, the project would require compliance with both the City's and County's fire codes (Boyle, 2002).

In the event of fire, the Placer County Dry Creek Fire Station would continue to provide emergency services, as it is currently the closest fire station to the project area (Boyle, 2002). This may change in the future if development in the proposed West Roseville Specific Plan area and MOU area proceeds and need for fire services increases. The City of Roseville may then consider building a fire station in this area, which would then be closer to the project area than the Placer County Dry Creek Fire Station. It is expected that the response time to the project area during operation will not change because access to the project area will not be modified as a result of the project. Access within the project area will be modified; however, this is expected to decrease response time, because an access road will be located along the embankment. The embankment would provide elevated access overlooking the project area.

Increased public access to site, and potential future recreational opportunities such as described in Section 2.6, could increase the risk of fire because more people could be using the site. The proposed project would involve the construction of embankments, bypass/low-flow channels, and inlet and outlet structures. The remaining areas within the project area, which are currently grassland, riparian vegetation or rice fields, would presumably be left fallow. It is anticipated that the level of fire risk may increase

because it is likely that vegetation would dry out during summer months when conditions are dry, rather than be suppressed as they are now for rice farming. The potential increase in dry vegetation, which would be available as fuel source for wildfires, would increase the potential level of fire risk throughout the project area.

This increased level of risk would be a less than significant impact, because response times will not change, and because maintenance activities during operation of the project would reduce this level of fire risk. Proposed maintenance activities would include the removal of excess vegetation when required and would be undertaken in accordance with the City of Roseville's Municipal Code, Chapter 9.20 Abatement of Weeds, Dirt, Rubbish and Rank Growths (Eicholtz, 2002). In addition, the embankments of the retention basin could act as fire breaks to contain fire in the event of a wildfire.

b) Police protection?

The site is currently served by the South Placer Substation of the Placer County Sheriff's Department and is located within the Ocean Beat Area (Flaherty, 2002). Current response time from the beat area averages five to ten minutes (Flaherty, 2002). Once the property is acquired by the City of Roseville, the proposed project would be served by the City of Roseville Police Department (Flaherty, 2002; Neves, 2002). Following the City's purchase of the project area and implementation of the proposed project, the anticipated response time to the project area would average approximately 10 minutes (Neves, 2002). This anticipated response time is in accordance with the City's response time standards (Neves, 2002).

The proposed project would become a public area, until (or if) such time as the City decides to convey the land to others. While it is a public area, inappropriate use of the project area may potentially increase through activities such as four-wheel driving, off-road motorbike use, and illegal hunting because the site would no longer likely be used for rice farming (Neves, 2002). However, this would be a less than significant impact because the City of Roseville has sufficient resources to adequately provide service to the project area (Neves, 2002).

c) Schools?

The primary objective of the project area is to retain floodwaters generated by entitled and future developments within the City of Roseville and Placer County. The project would not directly generate any increase in population and therefore would have no impact on schools in the region.

d) Parks?

The primary objective of the project area is to retain floodwaters generated by entitled and future developments within the City of Roseville and Placer County. The project would not directly generate any increase in population and therefore would have no impact on parks in the region. The proposed project would accommodate future use of the site for passive recreation, to be constructed by others.

e) Other public facilities?

During the life of the project, the retention basin may require maintenance on an infrequent basis. An inspection of the retention basin would be undertaken biannually to identify any areas or components requiring maintenance. The inspections and maintenance activities would be undertaken by the City of Roseville Public Works Department.

The development of the project is expected to have a less than significant impact on the services of the City's Public Works Department as the Department's services are not anticipated to be required at frequent intervals or for long periods.

Conclusion

The development of the project would:

- result in an increase in fire risk to the area which may increase the need for fire protection services. Maintenance activities conducted would remove excess vegetation and reduce the level of fire risk to the project area. Therefore, the impact on fire protection services is considered to be less than significant;

- have a less than significant impact on the provision of police protection services;

- not impact schools;

- not impact parks; and

- increase demand of the services of the City's Public Works Department for maintenance activities. However, the demand for these services is not anticipated to be substantial and the impact of the Department's services is considered to be less than significant.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

Boyle, Mike. 2002. Placer County Office of Emergency Services. Personal communication with J. Becher, URS Corporation. June 6, 2002.

Eicholtz, Bob. 2002. Placer County Office of Emergency Services. Personal communication with J. Becher, URS Corporation. June 13, 2002.

Flaherty, Amanda. 2002. South Placer Substation, Placer County Sheriff's Department. Personal communication with J. Becher. June 10, 2002.

Matheson, Dennis. 2002. City of Roseville Fire Department. Personal Communication with J. Becher, URS Corporation. May 31, 2002.

Neves, Joel 2002. City of Roseville Police Department. Personal Communication with J. Becher, URS Corporation. June 7, 2002.

3.14 RECREATION

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
14. RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			✓	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		✓	-	

a) Increase the use of parks or other recreational facilities such that deterioration of the facility would occur or be accelerated?

Currently, the only recreational activities that take place within the project area are hunting and fishing, because the property is privately owned and public access is not permitted. The site is a good location for fishing because Pleasant Grove Creek traverses it. It is also a popular site for bird hunting because the creek, irrigated agricultural lands, seasonal wetlands, and riparian habitat attract waterfowl and other birds to the site.

Wilderness Unlimited (WU) is the only fishing and hunting club that has access to the project site. Wilderness Unlimited is an organization that manages outdoor recreational property for sporting opportunities on private land. WU has been leasing the property to provide access to a limited number of people per year. They typically only allow 5 people for waterfowl hunting and 5 people for fishing each year on the site to ensure everyone has access to acquiring fish and waterfowl. They also permit 10 people per year for hunting dove and pheasants. (Ruiz, 2002)

Fishing can take place year round. The primary catch is catfish; however, some bluegill, largemouth bass, and carp have also been caught in Pleasant Grove Creek. The hunting season for waterfowl is from October through December; pheasant and dove hunting occurs from November through January. While the site relies heavily on seasonal rainfall to attract birds, WU pays to flood a field on the southern portion of the site to maintain a water level of approximately 6 inches during the hunting season. The waterfowl observed on the site includes resident wood ducks and mallards, and migratory pintail, wigeon, spoonbill, gadwall, teal, mallard, and geese (snow, ross, Canadian Aleutian). Valley quail and blackbirds are also located on site, but are restricted from being hunted. (Ruiz, 2002)

Several hunting and fishing clubs utilize sites throughout Placer County and a few others are located in close proximity to Reason Farms. Wilderness Unlimited leases another site in the area, the Sunset Club,

located off Pettigrew Road. They permit 3 people per year to hunt dove and pheasant at the Sunset Club location. Two other competing clubs, Birds Limited and the M & D Hunting Club, are located nearby, off Phillip Road. (Ruiz, 2002)

The project would convert actively managed rice fields to passively managed seasonal wetlands and uplands. Portions of the retention basins and adjacent fields would continue to seasonally pond water due to the high clay content of the soils, especially in and near the low-flow bypass channel. This would continue to provide winter waterfowl habitat, and continue to attract birds to the site, although the area used by winter waterfowl may be reduced.

The change in property use and ownership could eliminate the use of the Reason Farms site as a private place for hunting or fishing, or the City could decide to continue to allow bird hunting to take place on the site while it is under City ownership. Access could be restricted via, for instance, selling hunting rights to a private duck-hunting club, or access could be unrestricted. If bird hunting were not allowed, this could result in an increase in the use of other surrounding bird hunting areas, and could reduce the area available for bird hunting within Placer County. Because the existing bird hunting opportunities on the site are so restricted (15 people per year), and because other nearby bird hunting opportunities are numerous, displacement of these individuals to other bird hunting venues would not be a significant impact on these other venues. The City would likely allow public fishing.

The design of the retention basin would result in open space that may improve in quality over time as the riparian habitat expands into the buffer zone between Pleasant Grove Creek and the embankment. This would provide future recreational opportunities on site, if desired, and would not have an impact on off-site recreational amenities.

The proposed West Roseville Specific Plan area (WRSP) adjacent to the southeast side of the project area and would include a residential and mix-use development, with 30 percent of the land use designated for preservation of open space, creeks, and oak woodlands. The WRSP proposes to include two neighborhood parks, three golf courses and a City regional sports complex when fully developed. The park designs would include linkages to habitat preservation and open space corridors. Pedestrian trails are planned to allow for public access to oak woodlands and riparian habitat along Pleasant Grove Creek. Future trail systems on the proposed project site could provide linkages to the proposed WRSP trail system, and then to the City's trail system.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No recreational facilities are included as part of the proposed project. Recreational facilities would not be constructed as part of the proposed project because the fees collected by the City for retention basin construction cannot be used for other purposes. It is recognized, however, that the site has the potential to provide passive recreational amenities such as hiking, biking, and bird watching.

In addition, potential future recreational facilities could include a passive recreational trail system. This is discussed in Section 2.6 of the Project Description, and conceptually illustrated on Figure 3-10. Scenic viewpoints could be constructed within the retention basin embankments and along Pleasant Grove Creek. The trail could undulate from the bottom of the basin to the top elevation of the embankment and flow from side to side in a serpentine form from the embankment setback to the creek edge. Locations where the trail might be located adjacent to the creek could be made into landscaped scenic overlooks or viewpoints. These locations could coincide with the inlet/outlet structures and could be integrated into the existing habitat to the extent possible. By incorporating public open space and passive recreation, the site could have the potential for walking, fishing, and bird watching. If implemented, this may supplement and provide linkages to local and regional parks and recreational facilities within the City of Roseville and Placer County. With public access to the site, fishing in Pleasant Grove Creek would likely be open to the public rather than controlled through a private organization, like Wilderness Unlimited. This may result in an increase in number of people fishing on the site. It is unknown whether this would result in a reduction in fish population over time. Because no special-status fish are likely to occur in the creek, this would not be a significant impact.

The development of the project would result in additional public open space within the project area. While a recreational trail is not part of the project, consideration to public access and use of the site should be given to the riparian zone of Pleasant Grove Creek and other sensitive habitats. With or without a designated recreational trail, the public may access the site for fishing, walking, or bird watching within the project area. This may result in some recreational users venturing within the riparian zone or other sensitive habitat with the potential to impact the physical environment. To protect important sensitive habitat during recreational use, Mitigation Measure R-1 will be implemented.

Mitigation Measure R-1

Prepare guidelines to limit disturbance to the riparian zone of Pleasant Grove Creek or other sensitive habitat, and prepare a public educational program, including informative signage to explain the ecological importance of the unique habitats on the site.

Guidelines will be developed for users to follow to use the open space appropriately, in an effort to protect unique habitats on the site. The guidelines will be protective of the riparian corridor and other unique habitats on the site. They will also address access to fishing along Pleasant Grove Creek. Prior to operation, the area will be sign-posted with information explaining the ecological importance of the riparian zone. This would discourage users from venturing into the sensitive habitat areas, and reduce recreational impacts on the physical environment to a less than significant level.

Conclusion

The development of the project would:

- increase the use of existing neighborhood and regional parks or recreational facilities and is considered to be a less than significant impact; and

- include passive recreational opportunities and present opportunities for the development of future recreational facilities, which could have an adverse physical effect on the environment. Implementation of Mitigation Measure R-1 would reduce this impact to a less than significant level.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

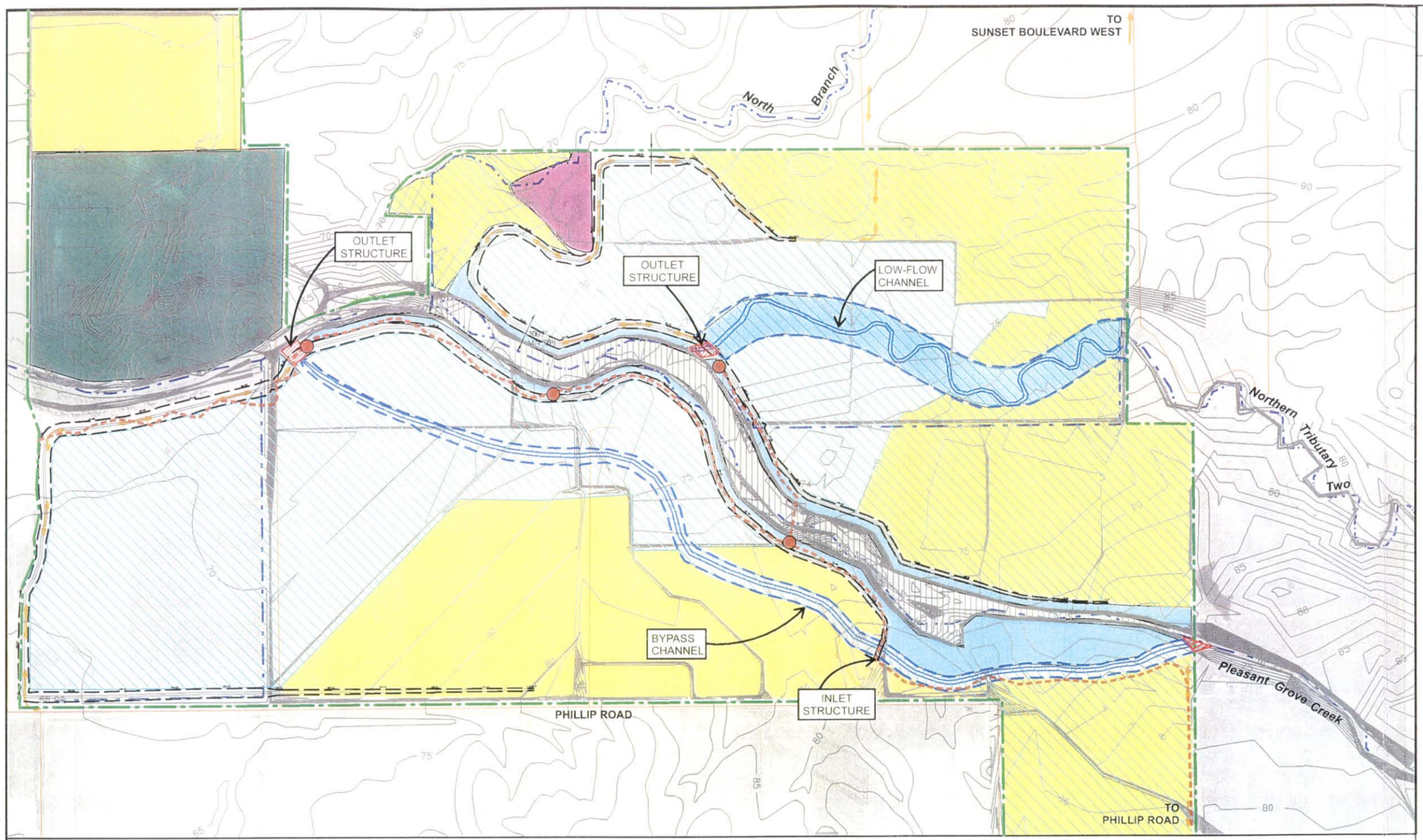
References

City of Roseville. 1995. General Plan. City of Roseville Planning Department, November 18, 1992.

Draft West Roseville Specific Plan. April 2002. Prepared for the City of Roseville.

Roseville Chamber of Commerce. 2002. "Fun and Games" in *Roseville and Granite Bay Magazine,* pp. 64-66.

Ruiz, Serge. 2002. Wilderness Unlimited, personal communication with D. Reel of URS Corporation, May 20, 2002.



LEGEND

- Site Boundary
- Existing Contour
- Existing Channel
- Existing Road
- New Low-Flow/Bypass Channel
- New Embankment
- Seasonal Wetlands and/or Waterfowl Habitat
- Zone of Riparian Disturbance (Permanent and Temporary)
- Access Road
- Potential Trail
- Potential View Point/Rest Area
- Preserve or Enhance Vernal Pools
- Restore Riparian Habitat
- Preserve or Enhance Riparian Habitat
- Restore Annual Grassland
- Preserve Freshwater Marsh

N

0 500 1000

Scale (feet)

Sources:
1) County of Placer, 2001. Georeferenced aerial photography.
2) URS/PWA, 2002. Reason Farms Retention Basin Final Conceptual Design Report.

Figure 3-10
OPPORTUNITIES FOR OTHER USES

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS PWA

6/11/02 vsa\43-00067030.00\F3-10_opportunities.cdr

3.15 TRANSPORTATION/TRAFFIC

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
15. TRANSPORTATION/TRAFFIC. Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (for example, result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			✓	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				✓
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?				✓
d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?				✓
e) Result in inadequate emergency access?				✓
f) Result in inadequate parking capacity?				✓
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (for example, bus turnouts, bicycle racks).				✓

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?

b) Exceed, either individually or cumulatively, a level of service standard established by the County Congestion Management Agency for designated roads or highways?

CEQA Guidelines state that a project will normally have a significant effect on the environment if it causes a substantial increase in traffic in relation to the existing traffic load and capacity of the street system. Level of service (LOS) is a qualitative measure of the effect of a number of factors that determine roadway operating conditions. These factors include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operation cost. Levels of services are designated "A" through "F" from best to worst. Placer County uses an LOS "C" standard

for county roadways, except for those roadways within one-half mile of a state highway, where LOS "D" is permissible. This standard is consistent with the City of Roseville standard.

Project Construction

Three state highways provide access to the vicinity: State Route (SR) 70/99, SR 65, and Interstate 80 (I-80). The transportation network in the project area is composed primarily of older rural roadways and newer or upgraded suburban roadways that provide access to the City of Roseville Specific Plan areas. Pertinent roadways are shown on Figure 2-1.

Construction of the retention basin would likely occur during two or more construction seasons, which would likely extend from about April through October, depending on the rainfall which renders the ground surface difficult to work in. Temporary internal access roads would be constructed to provide access to temporary spoil dumps during construction. These roads would be unpaved and the ground surface would be rehabilitated at the completion of construction. The amount of construction equipment travelling to and from the site would vary, depending on the particular project feature under construction. Up to 35 or 40 pieces of heavy construction equipment may be on site at one time, although these would not all travel to or from the site at the same time, and most heavy equipment would remain on site for the duration of the time needed for construction. During construction of the inlet/outlet structures, approximately 10 to 15 concrete mixers per day may be delivering concrete to the site, in addition to other heavy equipment.

The largest construction workforce would be on site if both basins were constructed in one construction season, with concurrent construction of the channels, embankments, and inlet/outlet structures. This would be a "worst-case" scenario, unlikely to occur given the existing fee collection program, but conservative for the purpose of analyzing construction traffic impacts. Were this to occur, approximately 65 daily worker vehicle round-trips would occur during the most intensive construction activities. Each worker is assumed to commute in his or her own vehicle.

Construction access would be via Baseline Road to Brewer Road or Fiddyment Road, then along Phillip Road to the southern site entrance. Construction traffic originating from north of the site could also travel along Sunset Boulevard West to either Brewer Road or Fiddyment Road, and then along Phillip Road to the southern site entrance. An existing farm road on the site would be used to cross Pleasant Grove Creek and access the North Basin construction areas. If the North Basin is not constructed concurrently with the South Basin, or if construction access from the north is required by the construction contractor, construction traffic would use Sunset Boulevard West to access an existing roadway easement along a private road east of Pettigrew Road, which extends to the Reason Farms northern site boundary. Construction workers and materials from outside the immediate vicinity would use SR 70/99, SR 65 or I-80 to reach these access roads.

Table 3-18 presents data pertaining to the existing traffic characteristics of local roadways likely to be affected by project construction (Brinkman, 2002; Gandler, 2002). In addition, the private roadway providing northerly site access could be temporarily affected by North Basin construction.

Table 3-18
Existing Traffic Characteristics of Local Roadways in the Project Area

Roadway	Location	Classification	Average Daily Traffic	Level of Service C Capacity	LOS
Baseline Road[a,b]	Between Fiddyment Road and Brewer Road	Arterial, 2-lane	12,761	14,400	A
Fiddyment Road[a]	Between Baseline Road and Sunset Boulevard West	Arterial, 2-lane	8,800	12,000	A
Phillip Road[a]	West of Fiddyment Road	Local, 2-lane	157	9,600	A
Sunset Boulevard West[c]	Between Fiddyment Road and Brewer Road	Arterial, 2-lane	600	12,000	A

Notes:
[a] City of Roseville Traffic County Database (URS, 2001).
[b] Average ADT (east and west of Fiddyment) (URS, 2001).
[c] Brinkman, Placer County Department of Public Works (2002b)

No information is available regarding the existing level of service at intersections that would be potentially affected during construction, except for the Fiddyment Road/Baseline Road intersection and the Fiddyment Road/Phillip Road intersection. At the Fiddyment Road/Baseline Road intersection, the current A.M. and P.M. peak hour LOS is F (signalized intersection LOS calculated using Circular 212 Planning Method; unsignalized intersection LOS calculated using HCM Unsignalized Intersection methodology; URS, 2001). Improvements to the north side of this intersection are currently under construction. The intersection LOS is forecast to improve to LOS B during the A.M. peak hour and LOS A during the P.M. peak hour after completion of these intersection improvements in 2002 (URS, 2001). The Fiddyment Road/Phillip Road intersection is currently operating at LOS A during both the A.M. and P.M. peak hours (URS, 2001). No traffic congestion would be expected to occur on other intersections near the project site (Gandler, 2002; Brinkman, 2002).

The project would generate a short-term increase in traffic during the construction of the retention basins. The private road that may be used for North Basin construction could experience a temporary noticeable increase in traffic during construction of this facility. Based on the traffic volumes on other access roadways and at intersections within the project area, the addition of project construction traffic would not cause a substantial increase in the number of vehicle trips, or cause substantial congestion on affected roadways or intersections. Project construction traffic volumes would not cause LOS standards to be exceeded. Therefore, impacts related to construction traffic would be less than significant.

Project Operation

A permanent access road would be constructed within the project area for maintenance vehicles during project operation. The alignment of the permanent access road would extend along portions of the top of the embankments, as illustrated on Figure 2-5. The permanent access road would most likely consist of approximately eight inches of compacted aggregate base rock placed on a subgrade of compacted earth. Vehicle trips along the permanent access road during operation of the project are expected to be on the order of approximately two trips per year. This would have no impact on the street system or LOS standards in the project area.

The proposed project would not provide new or upgraded public roads. It would result in the abandonment of Pettigrew Road, a two-lane local County rural roadway, between Pleasant Grove Creek and Phillip Road. No homes or businesses abut this road. The City of Roseville would initiate abandonment proceedings in accordance with the Placer County Department of Public Works Procedures for Abandonment of County Easements. Since the road is not a through road, and traffic is limited to farm workers and a small number of fishermen and hunters (hunting would be discontinued when the City purchases the property), abandonment of Pettigrew Road would not cause a noticeable increase in traffic on existing roads in the project vicinity. Abandonment of this road would be a less than significant impact.

The proposed project would not preclude a future Placer Parkway alignment, as generally described in the Project Study Report (Project Development Support) (the PSR) for Placer Parkway (DKS Associates, 2001). The proposed project's physical relationship to the alternatives described in the PSR is shown on Figure 2-11. The northernmost alignment would border and likely traverse the northernmost boundary of the Reason Farms site. This area would not be used for retention purposes and would likely be excess City property available for sale. The preferred alignment would traverse the lower portion of the southeastern-most portion of the Reason Farms site. This area would not be used for retention purposes and would likely also be excess City property available for sale. These alignment alternatives are preliminary, and the process of determining which alignments will be carried forward into a formal EIS/EIR process is scheduled to begin in late 2002. The actual alignment could vary considerably. A parkway could be constructed virtually anywhere on the site outside of the retention basins or could potentially be designed to incorporate the embankments furthest from Pleasant Grove Creek into a parkway alignment. The PSR recommends that a 1,000-foot-wide buffer be included as part of the roadway right-of-way. Such a buffer area would be compatible with the retention basin design, and could contribute to future preservation of habitat on the site.

c) Result in a change in air traffic patterns that results in substantial safety risks?

There are no airports in the project vicinity. Two informal airplane landing strips are used for small local planes that seed and crop-dust the Reason Farms site and nearby fields, one shown on Figure 3-6, and the other located across the road off of the Reason Farms site. The airstrip on the Reason Farms site is used

infrequently (Amarel, 2002) and would be abandoned. Because farming on the site would likely be discontinued, abandonment would not adversely affect air traffic patterns at the remaining airstrip. The construction and operation of the proposed project would not interfere with the operation of the remaining airstrip, either by changing air traffic patterns or traffic levels, and no substantial safety risks to air traffic would occur.

d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses?

e) Result in inadequate emergency access?

No new public roadways would be constructed as part of the proposed project. Access roads for maintenance purposes would be constructed along portions of the embankments and design features would not create or increase traffic hazards or be incompatible with other uses. In the future, if constructed as part of subsequent projects, other uses could include access for pedestrians, equestrians or bikes, as described in Section 2.6. Use of the access road as a bike trail would require additional construction of a 10-foot-wide paved section with 2-foot shoulders in accordance with City standards. These uses would not be incompatible with the access road or interfere with emergency access.

Construction traffic would not add substantial amounts of new traffic to the roadway network, and would therefore not interfere with emergency access to surrounding areas. Access to the site would be maintained at the primary entrance on Phillip Road and through the easement at the north property boundary, and would therefore not interfere with emergency access to the site during construction.

f) Result in inadequate parking capacity?

Construction parking would be entirely contained on site in designated parking areas to be identified by the construction contractor. All parking areas would be outside of areas designated as sensitive, which would be enclosed in construction or silt fences to prohibit access.

During operation, maintenance activities would be generally limited to about two trips per year. Due to this limited use, temporary parking could occur on the internal access roads. Should other uses be constructed as part of subsequent projects, as described in Section 2.6, limited parking facilities may be required at trailheads or at recreational access points. This could easily be accommodated within the existing project site and outside of the areas designated for protection as part of the proposed project (i.e., the Pleasant Grove Creek riparian corridor). No adverse parking impacts are anticipated.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation?

No planned or projected alternative transportation systems are identified at or adjacent to the project site in existing City of Roseville or County of Placer plans. The project would therefore not conflict with adopted plans, policies or programs of the City or of the County supporting alternative transportation.

The project would not preclude alternative transportation features to be constructed in the future by others, as described in Section 2.6. These features could include development of a trailway along the embankments of the retention basin and could provide pedestrian access to portions of Pleasant Grove Creek from both east and west of the project area. The design of the South Basin in particular could accommodate a future connection to the City's existing trail system and the proposed West Roseville Specific Plan trail system.

Conclusion

The development of the project would:

- result in a minor increase in traffic during construction, which would impact the capacity of the street system to a less than significant impact level;
- not exceed a level of service standard established by the City or County, and there would be no impact;
- not result in a change in air traffic patterns, and there would be no impact;
- not increase hazards due to a design feature or incompatible use, and there would be no impact;
- not result in inadequate emergency access to the site, and there would be no impact;
- not result in inadequate parking capacity, and there would be no impact; and
- not conflict with adopted policies, plans or programs supporting alternative transportation.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

Amarel, Robert. 2002. Personal communication with D. Heick and J. Becher of URS Corporation and M. Thomas of Philip Williams Associates, May 14, 2002.

Brinkman, T. 2002a. Transportation Engineer, County of Placer Public Works Department. Personal communication with D. Heick of URS Corporation, May 16, 2002.

Brinkman, T. 2002b. Transportation Engineer, County of Placer Public Works Department. Fax to D. Heick of URS Corporation, May 21, 2002.

DKS Associates, 2001. Project Study Report (Project Development Support) for Placer Parkway. June 13, 2001.

Gandler, S. 2002. Associate Civil Engineer, City of Roseville Public Works Department. Personal communication with D. Heick of URS Corporation, May 16, 2002.

URS Corporation. 2001. Roseville Energy Facility, Application for Certification. Submitted to the California Energy Commission by the Roseville Energy Facility, L.L.C. August 2001.

Weber, John. 2002. Right of Way Agent, Placer County Department of Public Works. Personal communication with D. Heick of URS Corporation, June 6, 2002.

Weber, John. 2002. Right of Way Agent, Placer County Department of Public Works. E-mail. June 7, 2002.

3.16 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
16. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				✓
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				✓
g) Comply with federal, state, and local statutes and regulations related to solid waste?				✓

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The development of the proposed project would not generate wastewater. It would therefore not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, and no impact would result.

b) Require the construction or expansion of water or wastewater treatment facilities?

The project would satisfy flood related effluent storage requirements (Mitigation Measure 6-2 from the Roseville Regional Wastewater Treatment Service Area Master Plan EIR) for the Roseville Regional Wastewater Treatment Plant. However, the development of the proposed project would not require the construction of new water or wastewater treatment facilities or expansion of existing facilities.

c) Require the construction or expansion of new storm water drainage facilities?

The development of the proposed project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities. Therefore, there would be no impact to these facilities as a result of the proposed project.

d) Have sufficient existing water supplies to serve the project?

Currently, 12 groundwater wells are located within the proposed project area. Eleven groundwater wells are currently used to supply water for rice farming. The remaining groundwater well is operational; however, it has not been used for production for an extended period. The production capacity of these groundwater wells ranges from approximately 1,800 to 2,500 gallons per minute (Amarel, 2002). Currently, up to approximately 3.96 billion gallons are extracted each year for rice farming (Amarel, 2002).

Some water would be required for dust control and cleaning activities during construction. No water would be required during project operation. No new or expanded water entitlements are required, and no impacts would result.

e) Result in a determination by the wastewater treatment provider that it has adequate capacity to serve the project's projected demand?

The development of the proposed project would not generate any wastewater and would therefore not impact additional demand for services by local wastewater treatment providers.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Small quantities of solid waste, up to several 25-cubic-yard dumpsters per day, may be generated during project construction. This waste would be collected and disposed of at the Western Regional Sanitary Landfill during the construction period (Bosik, 2002). The Western Regional Sanitary Landfill is managed by the Western Placer Waste Management Authority which includes the City of Roseville, Placer County, City of Lincoln and the City of Rocklin. No solid waste would be generated during the operation of the project.

The Western Regional Sanitary Landfill has a remaining capacity of approximately 8.84 million tons, which is adequate to accept all solid waste generated by the project (Bosik, 2002). Therefore, there will be no impact as a result of the project.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

The construction contractor would be required to dispose of solid waste generated as a result of the project in accordance with federal, state and city requirements. Non-hazardous solid waste will be transported to the Western Regional Sanitary Landfill as described above. The proposed project would not require the disposal of hazardous materials during its operation. Hazardous materials that are currently used and stored in the project area will be removed in accordance with applicable regulations for transport and disposal prior to the construction phase of the project. This would minimize the impacts associated with this disposal and transport of hazardous materials or waste prior to construction.

Hazardous materials are not intended to be used in the construction or operation of the project. Therefore, there will be no impact as a result of the proposed project.

Conclusion

The development of the project would:

- not generate wastewater, and there would be no impact;
- not require the construction of new water or wastewater treatment facilities or expansion of existing facilities, and there would be no impact;
- not require the construction of new storm water drainage facilities or expansion of existing facilities, and there would be no impact;
- have sufficient existing water supplies, and there would be no impact;
- not generate any wastewater and therefore would not impact additional demand for services by local wastewater treatment providers;
- be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and there would be no impact; and
- comply with federal, state and local statutes and regulations related to solid waste, and there would be no impact.

None of these issues require further analysis and do not warrant carrying forward to the focused EIR.

References

Amarel, Robert. 2002. Personal communication with J. Becher of URS Corporation, May 14, 2002.

Bosik, T. 2002. City of Roseville, Environmental Utilities Department. Personal communication with J. Becher of URS Corporation. June 4 and 6, 2002.

3.17 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
17. MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects.)	✓			
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		✓		

a) Have the potential to degrade the environment, reduce habitat, etc.?

The proposed project would benefit the quality of the environment by providing protection from flooding to downstream communities and agricultural activities, and would implement the Pleasant Grove Watershed Mitigation Fee program by using existing and future fees collected by the City of Roseville to mitigate increased runoff volume resulting from 100-year frequency storms after development.

The proposed project could affect habitat for vernal pool fairy shrimp, a federally threatened species, and vernal pool tadpole shrimp, a federally endangered species. Mitigation Measure B-1 described in Section 3.4, Biological Resources, would reduce impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp habitat to a less than significant level. The proposed project could potentially affect nesting raptors, including white-tailed kite, a federal species of concern and fully protected by the State of California, and Swainson's hawk, a state threatened species, during construction. Mitigation Measure B-2, described in Section 3.4, Biological Resources, would reduce impacts to nesting raptors to a less than significant level. The proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to

eliminate a plant or animal community, or restrict the range of rare or endangered plant or animal species. This is discussed in more detail in Section 3.4, Biological Resources.

No important examples of the major periods of California history or prehistory have been identified on the proposed project site, so no such examples would be eliminated.

b) Have impacts that are individually limited but cumulatively considerable?

The proposed project would have cumulatively considerable impacts to agricultural resources and air quality, and, indirectly, to growth not currently identified in existing plans.

Agricultural Resources

The development of the project could convert up to approximately 75 acres of Prime Farmland, approximately 300 acres of Farmland of Statewide Importance, approximately 900 acres of Unique Farmland, and approximately 150 acres of Farmland of Local Importance to other uses, primarily open space within Placer County. This represents a loss of approximately 0.8 percent of Prime Farmland, approximately 5.6 percent of Farmland of Statewide Importance, approximately 3.8 percent of Unique Farmland, and approximately 0.1 percent of Farmland of Local Importance. Although it may be possible that adjacent landowners with existing farming operations would consider portions of the site to be viable for rice farming or grazing, as an extension of their existing operations, it is likely that some remaining areas would not be suitable for agricultural use. Although the percentage of important farmland in Placer County that could be lost as a result of the project appears fairly small, this is regarded as a potentially significant impact, as important farmland in Placer County is currently declining and under pressure from future developments. Given the retention requirements of the proposed project, no feasible mitigation has been identified to reduce this potential impact to a less than significant level. Therefore, this impact is considered to be potentially significant and unavoidable and would be discussed in greater detail in the focused EIR.

Air Quality

Watering of active construction sites, combined with a rigorous set of other mitigation measures, could potentially achieve a 75 percent reduction in air quality emissions resulting from proposed project construction. However, this level of control is not expected to be sufficient to reduce non-attainment emissions (i.e., O_3 and PM_{10} emissions) to less than significant levels. Since the proposed project alone is expected to generate significant levels of emissions during construction, the proposed project would also result in a cumulatively significant short-term increase in these non-attainment pollutants.

Growth

The proposed project could indirectly contribute to impacts associated with growth facilitated by the retention basin. The proposed project would accommodate retention requirements of some existing and

entitled projects within the City of Roseville, and the approved North Rocklin Annexation Area. It could also facilitate substantial growth, including population growth, as a result of its accommodation of potential development not considered in any current General Plans, but in an area west of the Roseville city limits called the Memorandum of Understanding (MOU) planning area. This area consists of the proposed West Roseville Specific Plan (WRSP) and potential development within the remainder of the MOU area (see Figure 2-3). The indirect effects of growth associated with the retention basin are those potential impacts resulting from development it facilitates. This development is discussed below.

The proposed WRSP is a 3,100-acre site to the west of Fiddyment Road, near the Pleasant Grove Wastewater Treatment Plant. This area is being considered for future residential, commercial, and industrial development and annexation into the City of Roseville. The WRSP lies almost entirely within a larger land area that is the subject of an MOU between Placer County and the City of Roseville, which the City of Roseville is currently proposing to add into its Sphere of Influence. This MOU identifies the area west of the Roseville city limits as an area for future development, and sets forth a process to be followed for development in it. Included in this process are mitigation requirements relating to Fiscal, Transportation and Circulation, Utilities and Services, Affordable Housing, and Groundwater impacts of any proposed development, e.g., that impacts in these areas will be mitigated to a level that is less than significant unless *both* the County and the City agree that specific overriding considerations render such mitigation measures infeasible. A specific development plan within the MOU area must demonstrate that adequate surface water, sewer capacity, and the necessary distribution and collection systems including transportation exist or can be built to serve the proposed project, and must also demonstrate that the legal, financial, and practical ability to provide a full range of public services exists. The MOU also requires that all physical development, infrastructure development, and public services be constructed, installed, financed or provided at an "urban" standard of development or service.

The MOU would suggest that the MOU area is a logical planning area for growth to occur (it states that development should proceed in an orderly east-to-west progression), and sets forth expectations that most impacts of such development would be mitigated to a less than significant level, unless both parties agree that mitigation is infeasible. "The purpose of the MOU is to promote interagency communication and foster cooperative land use planning between the City and Placer County. The MOU establishes both procedures for review of any development proposal, as well as standards for mitigating development-related impacts. Through these procedures, the MOU also provides the City greater control over development on its western boundary, thereby assuring that any such development result in impacts that are neutral or beneficial to the City." (City of Roseville, 2002)

In June 2001, the City adopted thirteen Guiding Principles, which, together with applicable General Plan policies, are to be applied to any development proposed west of the City to establish minimum standards that a future annexation and associated development would have to meet. The City then prepared a number of technical studies that analyzed the opportunities and constraints of development in this area, especially as they relate to traffic, water, wastewater, solid waste, electricity, and fiscal impacts. Collectively, these technical studies are called the Feasibility Analysis (City of Roseville, 2002). The

information and conclusions drawn from the Feasibility Analysis will be used by the City Council to provide direction for evaluation and environmental review of the proposed WRSP and the proposed change in the City's Sphere of Influence. The Feasibility Analysis was the first step in a comprehensive planning process undertaken by the City to determine appropriate land uses on the western border of the current City limits and the potential impacts and benefits of the proposed WRSP. The conclusions of the Feasibility Analysis are presented below:

III. Executive Summary Conclusions

Staff recommends that Council reaffirm the Guiding Principles which would require the WRSP, or any development west of the City, to provide full funding and maintenance of new improvements and services at no cost to existing residents; ensure that new development not burden/increase costs or diminish supply/reliability of services; that new development provide "public benefit" to the City and residents; and that new development comply with the General Plan service levels and expectations.

As previously noted in the action items, Staff will continue to work with the Landowners to meet the Guiding Principles. Compliance with the Guiding Principles will likely require revisions to the proposed plan. To meet the challenges set forth in the Guiding Principles, direct Staff to give particular attention and effort to the mitigation of impacts relating to traffic, fiscal, funding capacity, and water. As the processing of the project further proceeds and should Staff determine that it is not feasible to comply with a Guiding Principle, Staff will return for Council discussion and direction. (City of Roseville, 2002)

The direct impacts resulting from future projects within the MOU planning area would be analyzed as part of the environmental review process for future development, and mitigation, if required, would be the responsibility of the project applicants. This project has been initiated for the WRSP.

In assessing the proposed retention basin project's indirect cumulative impacts resulting from its facilitation of growth, it would be necessary to first identify the probable environmental impacts of such growth. Given the early stage of the WRSP planning process, and because no development has been proposed in the remainder of the MOU area, it would be speculative to identify the specific scope of such impacts at this time. It would, however, be prudent to turn to the MOU, the Guiding Principles, and the Feasibility Analysis for guidance. Issues important to the City of Roseville and Placer County are addressed in these documents, as described above. The direction of the Guiding Principles and the entire MOU process are focused on reducing environmental impacts to a less than significant level. The Feasibility Analysis reaffirms this principal, and identifies that potential changes to the proposed WRSP may be necessary to achieve the objectives of the MOU. If the WRSP and other future growth in the MOU planning area cannot achieve these objectives, then it is possible that such developments would not be approved. Again, such future action is unknown at this time.

It is likely, however, that any substantial development facilitated by the proposed project would result in some impacts that would be cumulatively significant. These impacts could include changes in land use from agricultural to other uses, and impacts related to air quality and population growth, as discussed in Sections 3.2, 3.3, and 3.12 of this Initial Study. Impacts to other resources may more easily be mitigated, or are specific targets of the planning process to reduce impacts to less than significant levels, described above. For this reason, conclusions regarding the proposed project's indirect contribution to cumulative impacts (except for potential changes in land use from agricultural to other uses, and impacts to air quality and population growth) are unknown. A process is in place to rigorously reduce impacts to less than significant levels, although it is possible that some cumulatively considerable impacts would occur if such development is approved.

The proposed project would also accommodate additional treatment capacity or operational modifications of the Pleasant Grove WWTP. As described in Section 3.12, Population and Housing, the retention basin will accommodate up to 207 acre-feet of storage for the plant's tertiary treated effluent during a 24-hour wet weather flow condition. The provision of this storage capacity in the retention basin would allow the current and planned storage areas at the plant site to be displaced by the addition of up to two new wastewater treatment units, or other operational modifications that may be identified in the future. Any such expansion or modification would first need to be designed and approved by the City of Roseville and the participating Wastewater Treatment Service Area Master Plan agencies: Placer County and South Placer Municipal Utilities District. The construction of two new units at the Pleasant Grove Wastewater Treatment Plant would remove one barrier to as-yet unplanned growth, i.e., provision of wastewater treatment to service new development. Such development could include the proposed West Roseville Specific Plan and the potential future development of the remainder of the MOU area, plus some additional unidentified development within the wastewater treatment service area (Roseville, Rocklin, Loomis, Sunset Industrial Area, Granite Bay, and Dry Creek/West Placer). If the proposed West Roseville Specific Plan is not approved, the new wastewater treatment capacity could be used to service other development, although if and where this growth would occur is speculative at this time. Because the proposed project could facilitate additional expansion of the Pleasant Grove WWTP, it could indirectly contribute to increasing an already significant unavoidable air quality impact resulting from operation of the WWTP. Odor impacts associated with equipment failure or downtime were identified as a significant and unavoidable impact of the WWTP, and although mitigation was identified to reduce this impact (install odor control systems), this mitigation was not sufficient to reduce the impact to a less than significant level (ESA, 1996).

Finally, the proposed project could facilitate growth in other, unknown areas if development in the MOU planning area were not approved, or it could be constructed so as to accommodate only growth that has been approved. The potential impacts of such future actions are as speculative as these actions themselves.

c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No environmental effects that will cause substantial adverse effects on human beings are associated with the proposed project, other than the potential and speculative indirect effects associated with the facilitation of growth discussed in b) above. The proposed project will alleviate potential downstream flooding by mitigating increased runoff volume resulting from 100-year frequency storms.

References

City of Roseville. 2002. Executive Summary of the Feasibility Analysis Report for Proposed West Roseville Specific Plan and City/County MOU Area. February 2002.

ESA (Environmental Science Associates). 1996. Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report. SCH No. 93092079. Prepared by ESA, Sacramento, California, for the City of Roseville, California, May 1996.

Placer County/City of Roseville. N.D. Memorandum of Understanding, Placer County/City of Roseville. Adopted by the Council of the City of Roseville. January 5, 2000.

4.0 EVALUATION AND RECOMMENDATIONS/ENVIRONMENTAL DETERMINATION

On the basis of the information available to it in the record and the boxes checked in Chapter 3 of this Initial Study, the City of Roseville finds that:

___ that the proposed project COULD NOT have a significant effect on the environment, and recommends that a NEGATIVE DECLARATION be prepared.

___ that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in the checklist have been added to the project and agreed to by the applicant, and recommends that a MITIGATED NEGATIVE DECLARATION be prepared.

_X_ that the project MAY have a significant effect on the environment, and recommends that a focused ENVIRONMENTAL IMPACT REPORT be required.

___ that the proposed project MAY have a significant effect(s) on the environment, but that one or more of its potentially significant adverse effects 1) have been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) have been adequately addressed by mitigation measures based on said earlier document, as described above, and recommends that an ENVIRONMENTAL IMPACT REPORT be required, but that it analyze only those effects that have not been addressed in said earlier document.

___ that the proposed project MAY have a significant effect(s) on the environment, but that all of its potentially significant adverse effects 1) have been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) have been adequately addressed by mitigation measures based on said earlier document, as described above, and recommends that no further environmental review is necessary.

Through preparation of an Initial Study, the City of Roseville has determined that the proposed project may have a significant impact on the environment. Accordingly, City of Roseville has determined that a focused Environmental Impact Report (EIR) will be prepared as defined in Section 15168 of the California Environmental Quality Act (State CEQA Guidelines). The preliminary scope and content of the EIR is based on the results of the Initial Study. The Initial Study assumptions will be further evaluated based on input received from responsible/trustee agencies and other interested parties during the 30-day Notice of Preparation (NOP) comment period.

Based on the Initial Study, the proposed project (i.e., City of Roseville Retention Basin Project) has the potential to result in significant direct impacts on Agricultural Resources, Construction Air Quality, Construction Noise, and potentially significant impacts on Growth, including Population Growth. The

EIR will analyze all potential impacts concerning this topic. In addition, the EIR will further include a more detailed analysis of impacts on Biological Resources, even though the Initial Study identifies mitigation measures to reduce all impacts to Biological Resources to less than significant levels. This analysis will be included in support of the future 404(1)(b) alternatives analysis for the subsequent permitting process. Based on the evidence in the Initial Study, no other potentially significant impacts have been identified, and an EIR focused on the topics described herein is currently anticipated.

The EIR will consider the following alternatives to the proposed project:

- No Action Alternative. Under this alternative, the proposed project would not be developed.
- Curry Creek Alternative. The proposed retention basin and associated structures would be built on a site approximately 2 miles south of the Reason Farms site, and 2¼ miles west of the city limits of Roseville.
- Alternative 3. Similar to the proposed project, Alternative 3 would be comprised of two retention basins: one located north of Pleasant Grove Creek and the second located south of the creek. Each basin would have certain typical features such as embankments, low flow channels and inlet/outlet structures. Alternative 3 would set back the embankments 300 feet from the ordinary high water mark of Pleasant Grove Creek.
- Alternative 4 provides two variations of the proposed project, both of which provide for reduced storage volume within the retention basin.
  - Alternative 4A. The embankments both north and south of Pleasant Grove Creek would be located 300 feet back from the ordinary high water mark of the creek, similar to Alternative 3. Unlike Alternative 3, no additional excavation would take place under Alternative 4A.
  - Alternative 4B would be identical to the proposed project, except that only the retention basin south of Pleasant Grove Creek would be constructed.
- Alternative 5 proposes an independent design feature for the retention basins that could be implemented within the context of Alternatives 3, 4A, 4B, or the proposed project. Alternative 5 would consist of the removal or breaching of the existing levees along the main branch of Pleasant Grove Creek.

This disposition constitutes the official action of the City of Roseville.

MARK MORSE
Environmental Coordinator

7/22/02
Date

5.0 LIST OF PREPARERS

City of Roseville

Raul Cervantes – Associate Engineer, City Projects Section, Public Works Department, Engineering Division.

Mark Morse – Environmental Coordinator, Community Development Department.

Garth Gaylord – Associate Engineer, Floodplain Management Section, Public Works Department, Engineering Division.

Rhon Herndon – Senior Engineer, Public Works Department, Engineering Division.

URS Corporation

Denise Heick – Project Manager: B.A., Political Science and History, 1973, San Francisco State University, California.

Vivien Arnold – Technical Illustrator, B.A., Architecture, University of California, Berkeley.

Jenny Becher – M.Env.Law, Environmental Law, in progress, Australian National University, Canberra, Australia; B.Sc., Environmental Science, 1994, Murdoch University, Perth, Australia.

Denise Bradley – M.L.A., Landscape Architecture, 1986, Louisiana State University; B.S., Agriculture/ Ornamental Horticultural Landscape Design, 1979, University of Tennessee, Knoxville.

Steven Fiedler – B.Sc., Physics, 2000, Purdue University, West Lafayette, Indiana.

Jeffrey Fuller – B.S., Environmental Health, University of Washington, 1981. Member, Institute of Noise Control Engineering (INCE), 1996.

Fritts Golden, AICP – MRP, Regional Planning, 1974, University of Pennsylvania, Philadelphia. B.A., Biology, 1970, Swarthmore College, Swarthmore, Pennsylvania.

Mark Hale – M.S., Cultural Resources Management, in progress, Sonoma State University; B.A., Anthropology, 1983, University of California, Berkeley.

William Kostura – B.A., History, San Francisco State University, California.

Steve Leach – M.A., Vegetation Ecology, 1992, University of California, Davis. B.S., Physical Geography, 1990, University of California, Davis.

Jean Lewis – B.A., Russian Language and Literature, 1984, University of Michigan, Ann Arbor.

Steve McKnight – M.S., Geology, 1995, Arizona State University, Tempe, Arizona; B.A., Geology, 1990, Pomona College, Claremont, California.

Elena Nilsson – M.A., Anthropology, 1985, California State University, Los Angeles. B.A., English, 1978, California State University, Los Angeles.

Jennifer Pretare – Ph.D., Environmental Science, Policy and Management, 2000, University of California, Berkeley; B.S., Environmental Studies, 1993, The Evergreen State College, Olympia, Washington.

David Reel – M.A. and Master of Urban Planning, 1991, School of Architecture and Urban Planning, University of Wisconsin-Milwaukee; B.S., Architecture, 1988, University of Wisconsin-Milwaukee.

Ray Rice – M.A., Geology, 1967, Rice University, Houston, Texas; A.B., Geology, 1964, Lafayette College, Easton Pennsylvania; B.S., Civil Engineering, 1964, Lafayette College, Easton, Pennsylvania.

Richard Shih - M.S., Mechanical Engineering, 1996, University of California at Berkeley; B.S., Mechanical Engineering, 1995, University of California at Berkeley.

Cheri Velzy – B.S., Meteorology, San Jose State University, 1989.

Subconsultants

Erich Hester – Philip Williams & Associates – M.S., Civil and Environmental Engineering, 1998, Stanford University, Stanford, CA. A.B., Biology, 1992, Dartmouth College, Hanover, NH.

David Lawler – Lawler Associates Geoscience – M.S., Paleontology, 1978, University of California, Berkeley, California. B.Sc., Paleontology, 1974, University of California, Berkeley, California.

Michael Thomas – Philip Williams & Associates – B.S., Civil Engineering, 1982, Institute of Technology, University of Minnesota at Minneapolis.

6.0 DISTRIBUTION LIST

6.1 GOVERNMENT – FEDERAL, STATE AND LOCAL AGENCIES

State Clearinghouse
- California Department of Fish and Game
- Regional Water Quality Control Board
- State Reclamation Board
- California Department of Safety of Dams
- Placer County Air Pollution Control District

Placer County
Sutter County
Sacramento County
City of Rocklin
City of Lincoln
Town of Loomis
Sacramento Area Flood Control District
Placer County Flood Control and Water Conservation District
Placer County Transportation Planning Agency
South Placer Municipal Utilities District
Dry Creek Watershed Council
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
National Marine Fisheries Service

6.2 LIBRARIES

Roseville Main Library, 225 Taylor Street, Roseville
Maidu Branch Library, 1530 Maidu Drive, Roseville

6.3 INDIVIDUALS, ADJACENT PROPERTY OWNERS, ORGANIZATIONS AND COMPANIES

Reason Farms
6368 S. Township Rd.
Yuba City CA 95993

Dean, Keith Euel
3555 Pettigrew Rd.
Roseville CA 95747

Warnick, Dean & Betty et al.
8351 Palladay Rd.
Elverta CA 95626

Scheidel, George S.
6201 S. Brewer Rd.
Pleasant Grove CA 95668

American Towers Inc.
c/o Ash Sander Esq.
One Post Office Square
Boston MA 02109

Placer Ninety-Four-Twenty PTSP
1205 La Sierra Dr.
Sacramento CA 95864

Placer 2780
c/o Johas & Associates
PO Box 22938
Sacramento CA 95822

Dickerson, John R.
3825 Pettigrew Rd.
Roseville CA 95747

Griswold, Lyman D. & Olga T. TRS
772 N. Douty St.
Hanford CA 93230

Mourier Family Enterprises LP et al.
c/o Mourier, Lois
5460 Straight Rd.
Roseville CA 95747

Friedman, Kenneth J et al.
c/o Doane, Joan S.
PO Box 531
Tiburon CA 94920

Hellyer, Susan W. Trustee
8121 Phillip Road
Pleasant Grove CA 95668

Gleason, James C. & Gaynell Trustees
6495 Sunset Blvd. West
Roseville CA 95678

Phillips Road 160 Investors
Manikas, John
511 35th St.
Sacramento CA 95816

Amoruso, Peter & Jennifer M.
3460 Amoruso Way
Roseville CA 95747

CHI Partnerships & Marco Dillon Ltd.
234 Polhemus Avenue
Atherton CA 94027

Watson, Walter C. & Lilliane L. Trustee
2641 Kempton Road
Rio Oso CA 95674

Allen, John L. & Musto, Sharon L.
10323 Pleasant Grove School Road
Elk Grove CA 95624

Deala, Edward Rolland & Beatrice M.
1288 Antrim Drive
Roseville CA 95747

1600 Placer Investors LP
c/o William A. Falik
100 Tunnel Road
Berkeley CA 94705

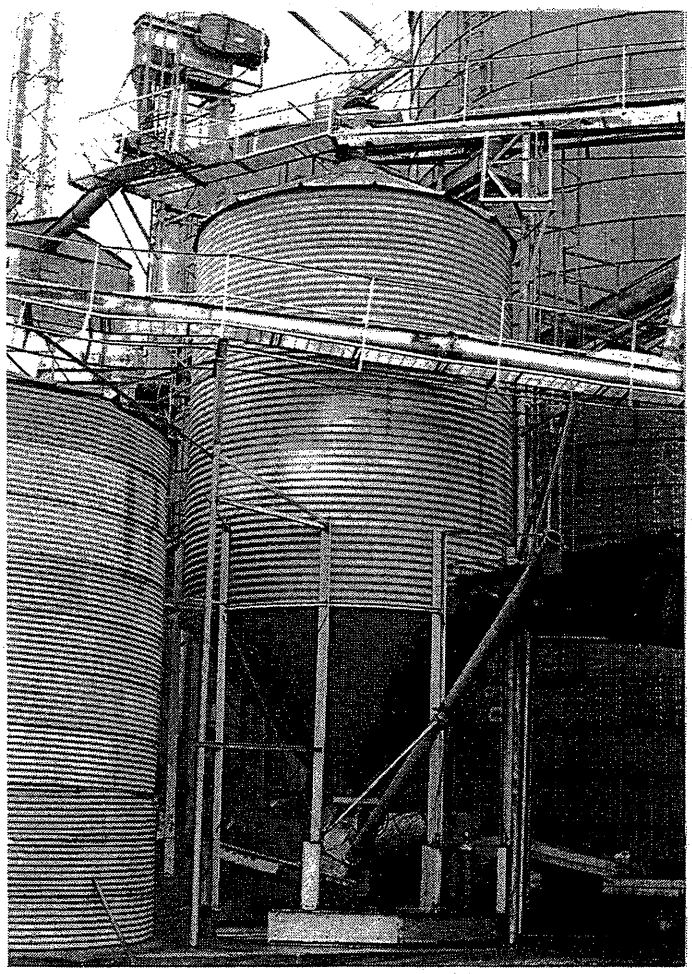
APPENDIX A

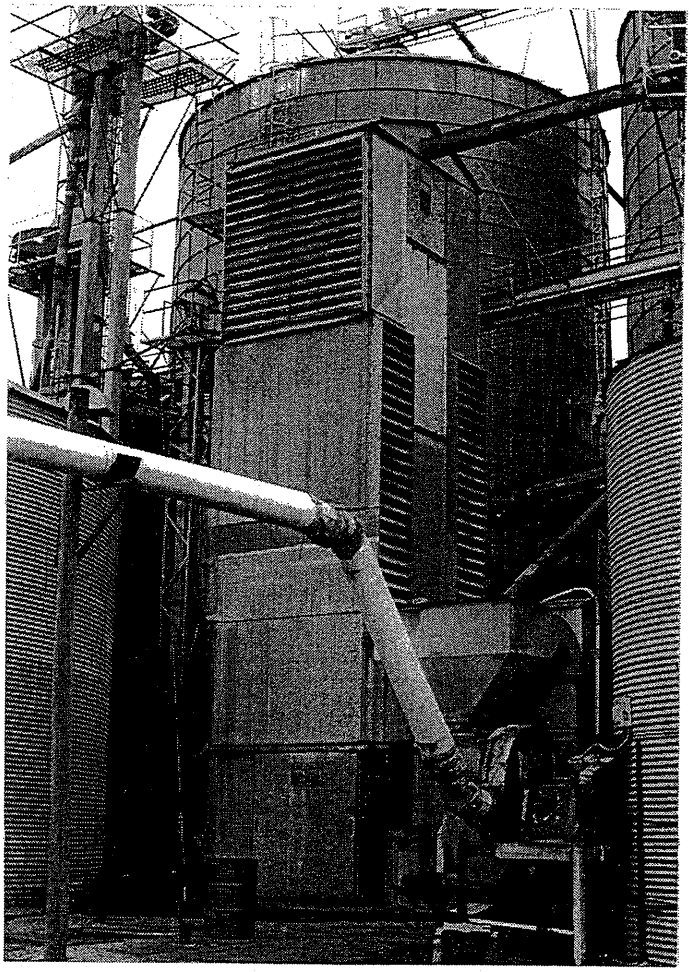
IDENTIFICATION OF RELEVANT GOALS AND POLICIES

A1 CITY OF ROSEVILLE BIKEWAY MASTER PLAN
A2 CITY OF ROSEVILLE GENERAL PLAN
A3 PLACER COUNTY GENERAL PLAN

APPENDIX A1

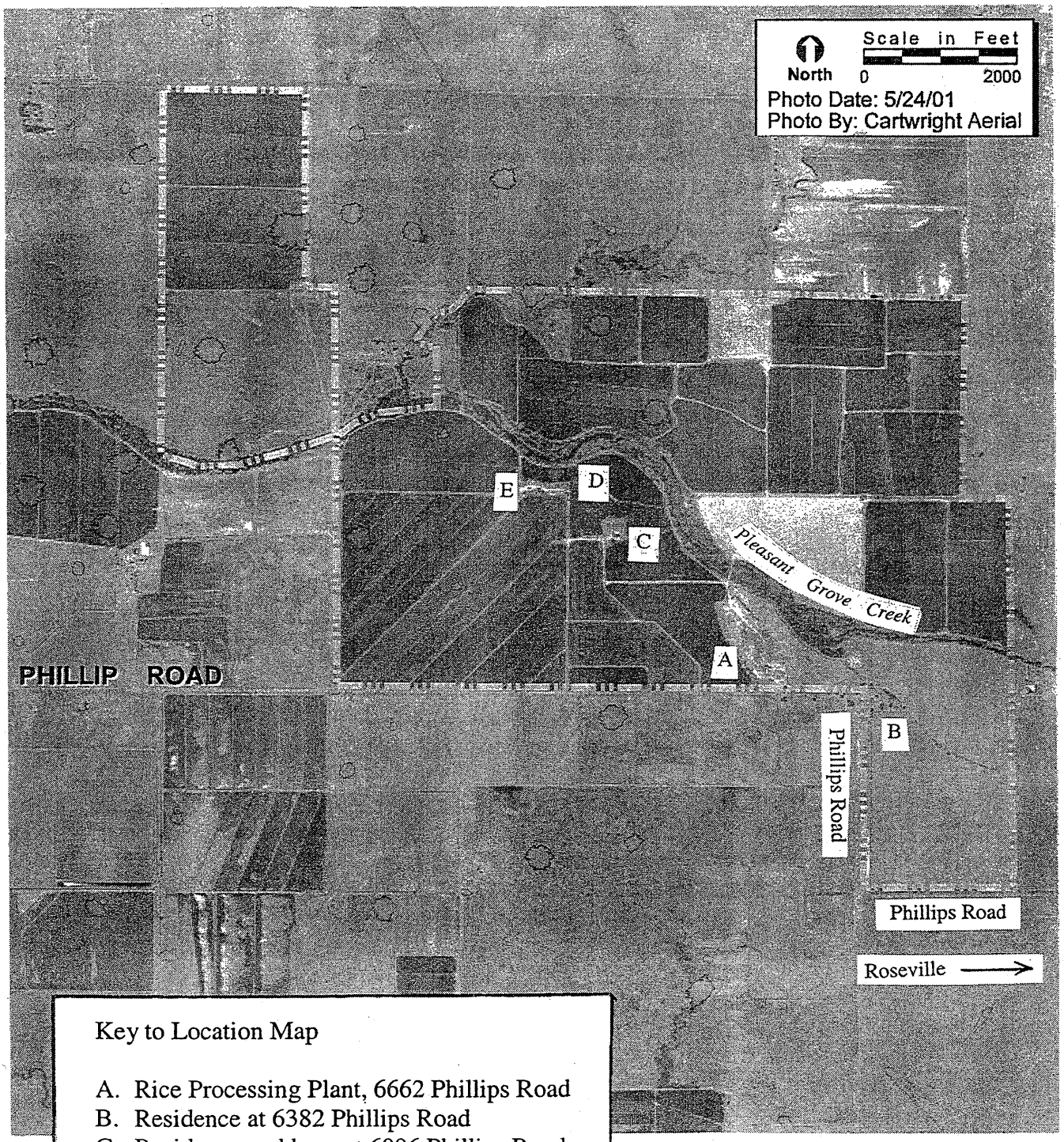
CITY OF ROSEVILLE BIKEWAY MASTER PLAN





At left: Detail of rice silos at main rice processing plant, 6662 Phillips Road (site A on map)
At right: Shanzer rice dryer, moved to 6662 Phillips Road from Gridley in ca. 1995.

In both photos, tall silage silos built of standing seam metal and dating from the late 1960s or ca. 1970 can be seen. These were converted to rice silos in 1975.



Key to Location Map

A. Rice Processing Plant, 6662 Phillips Road
B. Residence at 6382 Phillips Road
C. Residence and barn at 6996 Phillips Road
D. Windmill
E. Barn

Evaluation (continued from Building, Structure, and Object Record)

Neither individual buildings, nor the Reason Farms property as a whole, appears to be eligible for the California Register under criteria 1, 2, or 3. The reasons for this evaluation are given below.

The dairy barn in the main complex is a late example, and a very minor one, of a dairy barn, and no other dairy-related structures stand on the property to give it a contextual presence. It therefore does not appear to be eligible for the California Register under criteria 1, 2, or 3. The barn that is located west of the windmill is of modest dimensions and is a very minor example, one lacking structural or architectural interest. It is probably not fifty years old, but even if it is, or becomes fifty years old in the near future, it does not appear that it is or will be eligible for the California Register under criteria 1, 2, or 3. The house at 6382 Phillips Road appears to date from the late 1950s or the 1960s. It is an extremely minor example for its period. Even if it becomes fifty years old in the near future, it does not appear that it will be eligible for the California Register under criteria 1, 2, or 3.

All other structures on Reason Farms date from the 1960s, the 1970s, or later, and have no potential for California Register eligibility due to lack of age.

The rice farm as a whole is composed principally of buildings that were built in or after 1975. Therefore, the farm has no potential for California Register eligibility due to lack of age.



Residence at 6382 Phillips Road, dating apparently from the late 1950s or the 1960s (Site B on Location Map).

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary # _____
HRI # _____

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code _____

*Resource Name or # (Assigned by recorder) Resaon Farms

B1. Historic Name: x
B2. Common Name: Reason Farms
B3. Original Use: dairy farm, feed lot B4. Present Use: rice farm and processing
*B5. Architectural Style: houses: ranch style; other structures: n/a
*B6. Construction History: (Construction date, alterations, and date of alterations)

Dairy barn in main complex at 6662 Phillips Road built ca. late 1940s or 1950s. House at 6382 Phillips Road built ca. late 1950s or early 1960s. Barn west of windmill built 1950s or 1960s. House at 6996 Phillips Road built 1960s or 1970s. All other buildings in the main complex at 6662 Phillips Road built late 1960s or later.

*B7. Moved? Rice dryer: ■ Yes All other structures: ■ No Date rice dryer moved: 1991 Original Location: Gridley, CA
*B8. Related Features:
none

B9a. Architect: none/unknown b. Builder: unknown
*B10. Significance: Theme x Area x
Period of Significance x Property Type x Applicable Criteria n/a

The oldest building on this property is a dairy barn, which from its appearance and materials, appears to date to the late 1940s or the 1950s. No other information about the use of this property as a dairy farm is available.

In the late 1960s or in about 1970 a group of doctors purchased this property as an investment and used it as a feed lot. They erected the three largest silos on the property – those made of standing-seam sheet metal – as silage silos (i.e., these silos stored feed for cattle). The doctors owned the property for several years or less. In 1975 the current owner purchased the property. He converted the silage silos to rice silos and erected the other rice-processing equipment and storage sheds that are now on the property.

(Evaluation: see Continuation Sheet, page 5.)

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

History

B11. Additional Resource Attributes: (List attributes and codes) none

*B12. Reference:

Bob Amarel, Jr. Telephone interview by William Kostura, December 2001.

B13. Remarks:

*B14. Evaluator: William Kostura
Date of Evaluation: December 2001

(This space reserved for official comments.)

(Sketch map with north arrow required)

See Location Map, page 6

Description (continued from page 2):

Residence at 6382 Phillips Road (see site B on Location Map)

This residence is located on the east side of Phillips Road roughly four hundred yards east of the main Reason Farms complex. It is one story in height, is stud framed in construction, has a hipped roof, and is clad in stucco. The house is, very roughly, seventy-five feet in width, and has gable projections in the roof at either end. A brick base across the front of the house indicates an approximate construction date of the late 1950s or the 1960s. The original windows were aluminum sliders, and these were recently removed and replaced with new metal sash windows by the current tenant.

Residence and barn at 6996 Phillips Road (see site C on Location Map)

This residence is located about 2,500 feet northwest of the main Reason Farms complex and 2,000 feet north of Phillips Road. Access to this house is gained by a dirt road running north from Phillips Road. The house is one story in height, is clad in plywood siding with battens, and has a hipped roof. Windows are aluminum sliders. The house appears to date from the 1960s or 1970s. Near the house is a barn with a gambrel roof. The barn is clad, and the roof is covered, with corrugated metal siding. The date of the barn is unknown.

Windmill northwest of 6996 Phillips Road (see site D on Location Map)

Several hundred to a thousand feet northwest of the house described above is a windmill that is entirely made of metal. The windmill blades appear to be made of sheet aluminum. The windmill is in the middle of a field near a dirt road. The windmill is in very good condition and seems to be of fairly recent vintage.

Barn located west of the windmill (see site E on Location Map)

This small, gabled barn is one story in height. It is clad in corrugated metal, rests on a concrete slab, and has a structure of 4×4 wood posts and 2×4 wood beams. It appears to date to the 1950s or 1960s. The barn is on a dirt road about 2,500 feet north of one leg of Phillips Road and 2,000 feet east of another leg of Phillips Road.

Description (continued from Primary Record):

Rice Processing Plant, 6662 Phillips Road (see site A on Location Map)

The main complex of buildings on Reason Farms is located at 6662 Phillips Road, along the south boundary of the farm property. This complex of buildings functions as rice drying, rice storage, and equipment storage. Fifteen buildings, silos, sheds, etc. can be found in this complex, of which thirteen are tightly clustered near Phillips Road and two stand a short distance away, to the north.

The thirteen structures that are clustered near Phillips Road are the following:

1) Two tall silos and one silo of medium height. These were built as feed silos in the late 1960s or in ca. 1970, and since 1975 have been used as rice silos. They are clad in standing-seam sheet metal.
2) Five rice silos that are shorter in height than the above. They were built in ca. 1975 and are clad in corrugated sheet metal.
3) One shop or office building, built in or after 1975 and clad in sheet metal.
4) Two large storage sheds that are clad in sheet metal and were built in or after 1975.
5) One rice dryer. This was built at an unknown date by Shanzer Grain Dryers of San Francisco. In ca. 1995 it was acquired by Reason Farms from the Rice Growers Association of Gridley and was moved from that town to this location. This structure is clad in sheet metal, with metallic vents.
6) One rice cooler, built in or after 1975.

An elaborate system of piping and ducts connects all of the silos, the rice dryer, and the rice cooler. Rice is moved through this system by turnscrews and forced air, in a manner typical of rice processing plants throughout the northern Central Valley.

A short distance to the north are two other structures. They are:

7) A large vehicle shed with open sides. This is made of wood and was built in or after 1975.
8) A dairy barn. This is one story in height and is made of concrete blocks to the top of the main story. Above this, the roof rises to a gable. The gable ends of the building are made of horizontal plank siding and the roof is covered with corrugated metal. The building has been covered on one side with a coat of stucco. Windows lack sash or glazing. Both the interior and exterior of the building are in poor condition. The building's construction date is unknown, but from its materials and appearance it appears to have been built in the late 1940s or in the 1950s.

To reiterate, all of the structures in this complex date to the late 1960s or later, except for the dairy barn, which appears to be older.

(Description continued on page 3.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 12 *Resource Name or #: (Assigned by recorder) Reason Farms

P1. Other Identifier: _____
P2. Location: ☐ Not for Publication ■ Unrestricted *a: County Placer
and (P2c,P2e, and P2b or P2d. Attach Location Map as necessary.)
*b. USGS 7.5' Quad x Date x T ___; R ___; ___¼ of ___¼ of Sec ___; _____B.M.
c. Address 6662 Phillips Road City Roseville Zip 95747
d. UTM: (Give more than one for large and/or linear resources) Zone x ; _____mE/ _____ mN
*e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

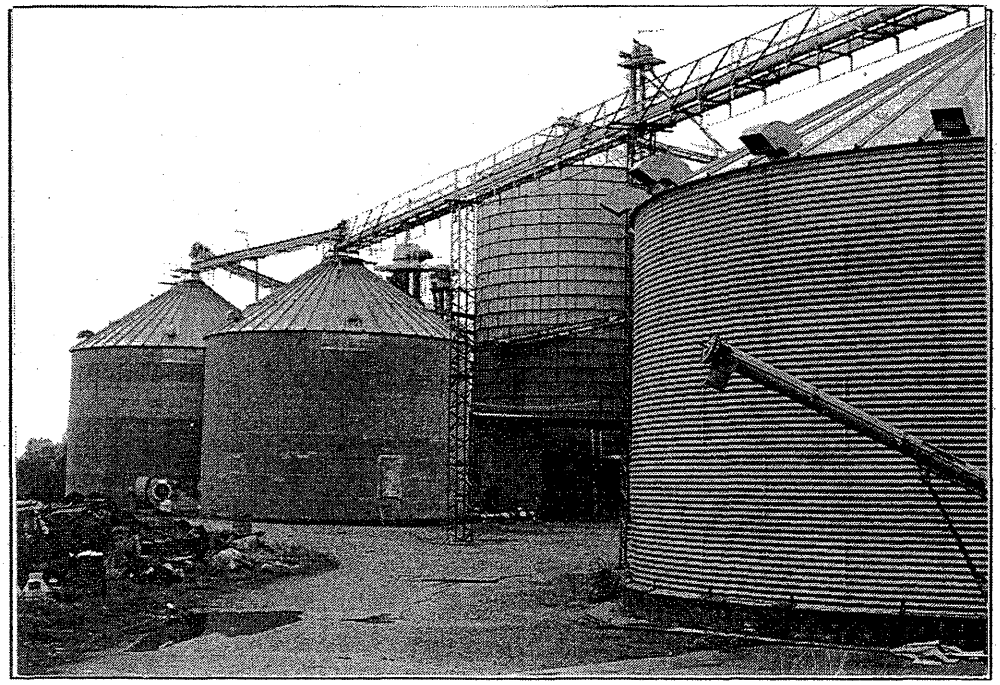
*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Reason Farms is located near to, and immediately west of, the City of Roseville, in Placer County, California. Most of its 1,336 acres are devoted to rice farming. A creek meanders through the center of the property, and a narrow strip of land along each side of the creek remains in its natural state. Phillips Road forms the southern boundary of this property.

Buildings and structures can be found at five places on the property. With one exception, all of the buildings and structures appear to have been built or moved here in the late 1950s or later. The exception is a dairy barn that appears to date to the late 1940s or the 1950s. All structures on Reason Farms are being evaluated here individually and as a single property.

(See Continuation Sheet.)

*P3b Resource Attributes: (List attributes and codes) HP33 – farm; HP2 – single-family houses
*P4. Resources Present: ■ Building ■ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (isolates, etc.)



P5b. Description of Photo: (View, date, accession #)
Rice silos at main Reason Farms complex, 6662 Phillips Road, November 2001.

***P6. Date Constructed/Age**
■ Historic ☐ Prehistoric ☐ Both
ca. 1950s, 1960s, 1970s

***P7. Owner and Address:**
Bob Amarel, Jr.
Reason Farms
6368 S. Township Road
Yuba City, CA 95993

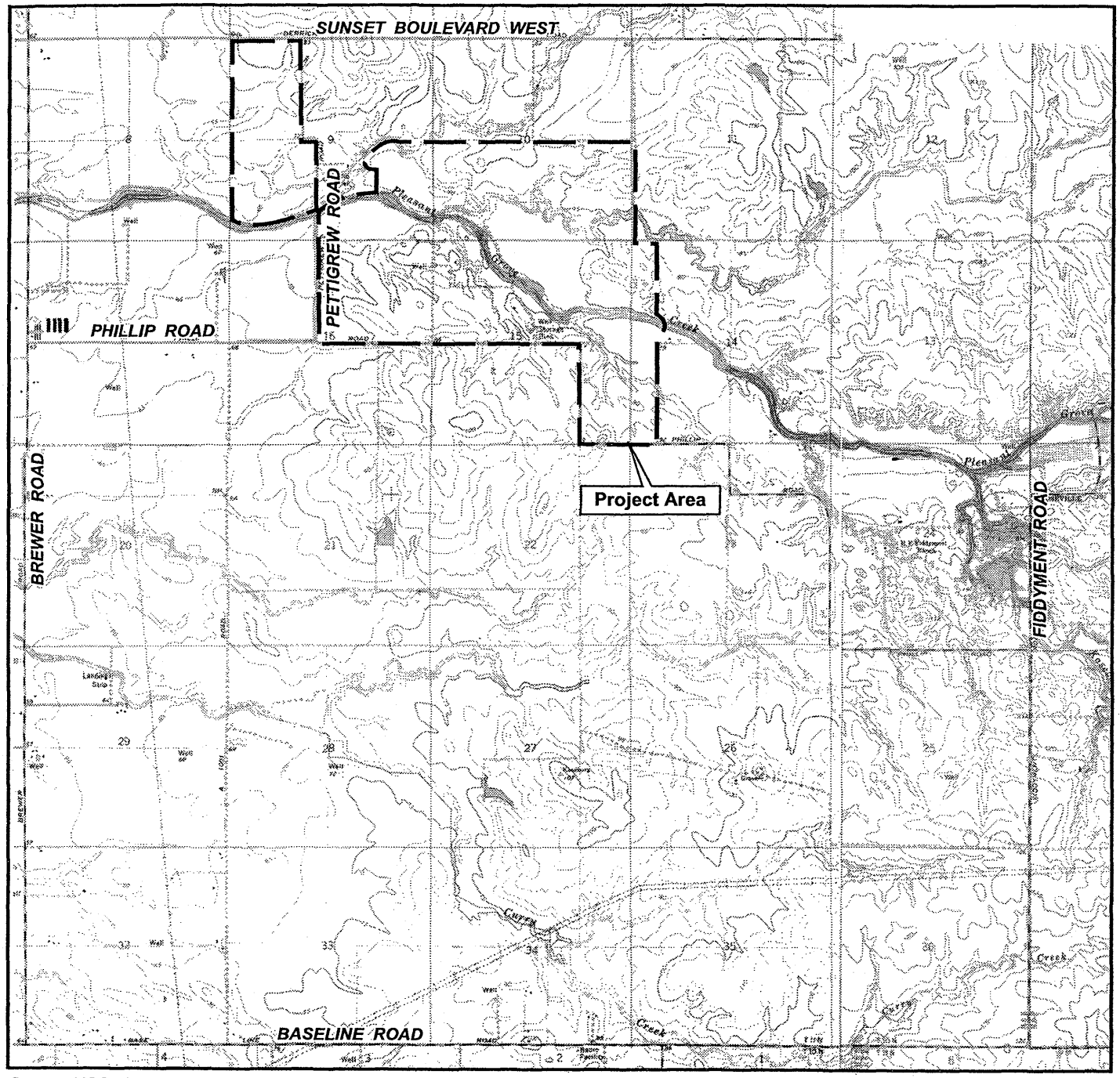
***P8. Recorded by:** (Name, affiliation, and address)
William Kostura, URS Corp
221 Main Street, #600
San Francisco, CA 94105

***P9. Date Recorded:**
December 2001

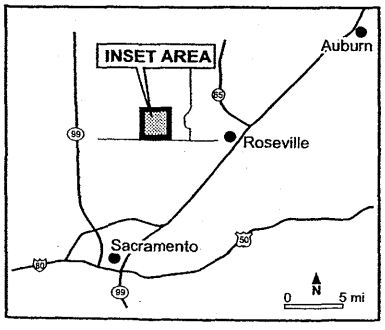
***P10. Survey Type:** (Describe)
intensive

P11. Report Citation*: (Cite survey report and other sources, or enter "none".) "City of Roseville Retention Basin – An Historical Evaluation," URS Corporation, December 2001

***Attachments:** ☐ NONE ☐ Location Map ☐ Sketch Map ■ Continuation Sheet ■ Building, Structure and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List)



Source: USGS 7.5 Series Topographic Maps,
Pleasant Grove, California, 1967, photorevised 1981 and
Roseville, California, 1967, photorevised 1981



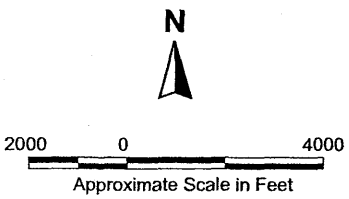


Figure 1
PROJECT LOCATION

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

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located west of the windmill (site E) is of modest dimensions and is a very minor example, one lacking structural or architectural interest. It is probably not fifty years old, but even if it is, or becomes fifty years old in the near future, it does not appear that it is or will be eligible for the California Register under criteria 1, 2, or 3. The house at 6382 Phillips Road (site B) appears to date from the late 1950s or the 1960s. It is an extremely minor example for its period. Even if it becomes fifty years old in the near future, it does not appear that it will be eligible for the California Register under criteria 1, 2, or 3.

- All other structures on Reason Farms date from the 1960s, the 1970s, or later, and have no potential for California Register eligibility due to lack of age.

- The rice farm as a whole is composed principally of buildings that were built in or after 1975. Therefore, the farm has no potential for California Register eligibility due to lack of age.

BIBLIOGRAPHY

Amarel, Bob, Jr. Telephone interview by William Kostura, December 2001. Mr. Amarel provided information relating to the history and use of buildings on Reason Farms.

Book C of Maps, Enwood Tract. Placer County Recorder's Office.

Davis, Leonard M. "A Brief History of Roseville," Roseville Historical Society Newsletter, June 1993. (Viewed via the City of Roseville/Roseville Public Library website.)

_____. *Roseville, Yesterday and Today.* Roseville Community Projects, 1975.

From Trail to Rail: A History of Roseville From the 1860s. Roseville, CA: n.d.

Lardner, W. B. and M. J. Brock. *History of Placer and Nevada Counties.* Los Angeles: Historic Record Company, 1924.

Maniery, James Gary, of PAR Environmental Services, Inc. "Cultural Resources Investigation of the Westpark/Fiddyment Ranch and Liveoak Enterprises/Signature Property Development Project, Placer County, California." Sacramento, 2001. This document provided background information on agriculture in southern Placer County, particularly in the Pleasant Grove Creek area, in the nineteenth century and the first half of the twentieth century.

Roseville continued to grow, from 2,600 in 1910 to nearly 4,500 in 1920. The Southern Pacific Railroad facilities, and the ability of the railroad to serve agriculture, continued to be the main reasons for this growth. Perhaps the largest employer in Roseville, other than the railroad, was the Pacific Fruit Express (PFE), a cold storage plant and ice manufacturer founded in 1909 and located next to the railroad tracks. Railroads loaded with California produce would pull alongside PFE facilities for supplies of ice before continuing east, across the Sierras and on to eastern markets. In 1913 PFE doubled its cold storage capacity, from 15,000 to 30,000 tons, making it, according to one source, the largest ice plant in the world. PFE expanded its Roseville plant again in 1924, and built another plant between Roseville and Antelope in 1926-1927. Southern Pacific kept pace with PFE, laying many miles of new track for PFE use. In 1926, Southern Pacific also commenced construction of a $1.5 million car shop. By the end of the 1920s, the Southern Pacific shops and yards in Roseville employed 1,225 men, and was perhaps the largest rail complex west of the Mississippi.

The Depression dampened construction activity during the 1930s, and during World War II construction all but ceased, with two exceptions. Roseville suffered a housing shortage during the war, and so a few housing developments were built for war workers. Due to large troop movements (including the transportation of wounded soldiers to DeWitt Center, the Pacific Theater hospital in Auburn) and the moving of war material through Roseville during the war, the Southern Pacific Railroad also expanded its rail yards at this time.

Roseville remained primarily a railroad town through the 1940s, but major changes came in the 1950s. Automobiles and interstate trucks began to displace trains. New transportation projects were automobile-oriented; these included the Seawall Underpass (which provided tunnel access underneath the Southern Pacific tracks, connecting the two sides of Roseville) and the improvement of Highway 40 (now Interstate 80) to freeway status. In 1955, Folsom Dam was enlarged as part of the state's Central Valley Project. At PFE, refrigerator cars replaced icing machines in the 1960s.

As rail jobs declined, jobs were created in other areas of commerce and industry. These included the construction of retail shopping centers and corporate headquarters along Douglas Boulevard and Harding Boulevard, east of the old center of town; and industry along Highway 65, north of the old city. In general, there has been a major shift in population and construction to outlying areas, especially to the east. The railroad is still an important part of Roseville's economy, but it is far from the dominant factor that it was from 1906 through the 1940s.

FINDINGS AND CONCLUSIONS

Each structure in the APE was individually evaluated, and the entire Reason Farms property was also evaluated as a whole. The result of this evaluation can be found in the appended DPR S23B Form Primary Record and Building, Structure and Object Record (12 pages).

The results were:

- The dairy barn in the main rice processing complex at 6662 Phillips Road (site A on the Location Map) is a late example, and a very minor one, of a dairy barn, and no other dairy-related structures stand on the property to give it a contextual presence. It therefore does not appear to be eligible for the California Register under criteria 1, 2, or 3. The barn which is

Another large ranch in the vicinity of this project was that of Elizabeth Fiddyment Hill. She and her husband, George Hill, moved to the Pleasant Grove area of Placer County in 1856, and acquired some land soon after that date. Although George Hill died in 1861, his widow continued to acquire property, amounting to a reputed 13,000 acres between Lincoln and today's Folsom Lake, by the time of her death in 1912. She raised grain and stock on the land.

A much smaller ranch was that of Elizabeth Hill's son, Walter Fiddyment, who purchased 80 acres in the Pleasant Hill district in about 1879. He eventually owned 240 acres. His land proved to be too poor for farming, so he attempted to raise horses and mules. This was also unprofitable, and he next raised cattle and sheep. When he retired from ranching in 1918, his son Russell added commercial turkey raising to the ranch's stock raising operations. In the late 1930s they also began to raise chickens. In the 1940s the family switched from raising bronze to white turkeys. An attempt to grow rice, irrigated by a ditch and well, in the 1950s and 1960s, proved unsuccessful. About ten years ago sheep and turkey raising ended on the ranch, and today cattle raising and the growing of pistachios comprise the ranching activities on Fiddyment ranch. Many early structures, including the main farmhouse, a barn, a smokehouse, a cooler, a reservoir, a bunkhouse, a windmill, and a garage, dating variously from the 1880s to 1949, survive on the property.

In summary, it appears that cattle and sheep ranching were the dominant forms of agriculture in southern Placer County, especially near Pleasant Grove Creek, during the nineteenth century and the first half of the twentieth century. Other agricultural activities were sometimes pursued as well, although some of these were unprofitable and were abandoned.

The town of Roseville, which is located five miles southeast of the Pleasant Grove district, got its start in 1864, when the Central Pacific Railroad was building the transcontinental railroad through Placer County. At a place midway between Sacramento and Auburn their rail line crossed the tracks of the California Central Railroad, a short line which connected the towns of Lincoln and Folsom. Where the two railroads intersected, a small collection of buildings formed and was known as the town of Junction. This "railroad town" became a place where farmers and ranchers could bring their agricultural products for shipment. During the balance of the nineteenth century, Junction – whose name was changed to Roseville – had a population of about 250.

Roseville grew into a city during the first decade of the twentieth century. Its sudden growth was due to the Southern Pacific Railroad's decision to move its roundhouse, repair facilities, and switching yard from nearby Rocklin to Roseville. The construction of these railroad facilities in Roseville took two years, from 1906 to 1908. During this period, many railroad employees in Rocklin moved to Roseville, and the latter's population grew to over two thousand. The downtown business district swelled, and new subdivisions were laid out to accommodate the larger population.

Growth stimulated a need for public services such as fire protection, a sewer system, an electric power system, and a bridge across Dry Creek. In 1909 Roseville citizens voted to incorporate, giving them power to levee taxes on themselves, and to choose a Board of Trustees and a mayor. In 1910 a bond measure was passed to provide city services.

CITY OF ROSEVILLE RETENTION BASIN, ROSEVILLE, CALIFORNIA
CALIFORNIA REGISTER EVALUATION

SUMMARY OF FINDINGS

The Reason Farms property was evaluated for possible California Register eligibility, in order to determine whether any of the structures located there were historic resources for the purposes of the California Environmental Quality Act (CEQA). Each structure was evaluated individually, and the Reason Farms property was evaluated as a whole. The finding is that none of the individual structures are eligible for the California Register, and that the farm as a whole is not eligible for the California Register.

PROJECT DESCRIPTION

The City of Roseville is interested in development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City, or within the area covered by a Memorandum of Understanding (MOU) between the City of Roseville and the County of Placer. Estimates of required retention capacity range from 1,500 acre-feet for currently entitled projects, plus approximately 750 acre-feet for the soon-to-be-proposed West Roseville Specific Plan area and the MOU area.

Reason Farms has been identified as a potential location for a retention facility. The Roseville City Council has approved purchase of an option to obtain Westpark's option to purchase the farm property for use as a retention basin. Project design has not been completed at the time this study was performed (December 2001), and a more complete project description is not possible at this time. Accordingly, the entire Reason Farms property is included in the Area of Potential Effects (APE) for this project.

FIELD AND RESEARCH METHODS

William Kostura, an architectural historian with URS Corporation with sixteen years of experience in the field, performed a survey of all structures within the APE during December 2001. The ages of all structures were estimated based on their materials and architectural appearance. In addition, a telephone interview with Bob Amarel, Jr. provided information regarding the dates of construction of nearly all structures in the main rice processing plant at 6662 Phillips Road, as well as background information on ownership of the property back to the late 1960s.

HISTORIC CONTEXT

What is today southwestern Placer County was first settled by people of European descent in the 1850s, as an agricultural community. During the early or mid-1850s a man named Lee is reputed to have acquired 10,500 acres of land on Pleasant Grove Creek, in the vicinity of this project area, by government script. Lee is said to have sold his land in 1856 to Stephen A. Boutwell, who with partner William Dunlap greatly increased their holdings for use as a sheep ranch. In 1864 they joined with James W. Kaseberg, for whom Kaseberg Creek (which flows into Pleasant Grove Creek) is named. During the 1870s the combined Boutwell, Dunlap, and Kaseberg ranches provided grazing for 30,000 sheep as well as thoroughbred and trotting horses.

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CALIFORNIA REGISTER EVALUATION

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June 2002

URS

CITY OF ROSEVILLE
RETENTION BASIN, ROSEVILLE, CALIFORNIA

CALIFORNIA REGISTER EVALUATION

Job No. 43-00067060.00
June 2002

APPENDIX C1

CITY OF ROSEVILLE RETENTION BASIN, CALIFORNIA REGISTER EVALUATION

APPENDIX C

CULTURAL RESOURCES SUPPORTING DOCUMENTATION

C1 CITY OF ROSEVILLE RETENTION BASIN, CALIFORNIA REGISTER EVALUATION

C2 ARCHAEOLOGICAL RECONNAISSANCE OF THE 1,329-ACRE REASON FARMS

C3 ARCHAEOLOGICAL RECONNAISSANCE OF A 170-ACRE ADDITION TO THE CITY OF ROSEVILLE RETENTION BASIN PROJECT AREA

C4 PALEONTOLOGY RESOURCES TECHNICAL REPORT

APPENDIX B
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROJECT AREA

[a] Federal and State Listing Codes:

- E = Endangered
- T = Threatened
- C = Candidate
- PT = Proposed Threatened
- P = Protected
- FP = Fully Protected
- SC = Species of Concern

[b] California Native Plant Society's Inventory of Rare and Endangered Plants of California, 6th Edition. David P. Tibor, Editor. Sacramento, CA.
CNPS List:

- 1B. Rare or Endangered in California and elsewhere
- 2. Rare or Endangered in California, more common elsewhere

CNPS Rarity – Endangerment – Distribution key:

R – Rarity
- 1 Rare in California but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
- 2 Distributed in a limited number of occurrences in California, occasionally more if each occurrence is small.
- 3 Distributed in California in one to several highly restricted occurrences, or present in such small numbers that it is seldom report.

E – Endangerment
- 1 Not very endangered in California
- 2 Fairly endangered in California
- 3 Seriously endangered in California

D – Distribution
- 1 More or less widespread outside California
- 2 Rare outside California
- 3 Endemic to California

APPENDIX B
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROJECT AREA

Scientific Name Common Name	Federal/ State Listing[a]	CNPS/ R-E-D[b]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Scaphiopus hammondii western spadefoot	SC/ SC	-	Grassland and valley-foothill hardwood woodlands, vernal pools are essential for breeding and egg laying	May occur in the project area
Acipenser medirostris green sturgeon	SC/ SC	-	Pacific Ocean, seldom migrates inland beyond estuaries of large rivers	Not likely; Pleasant Grove Creek too far upstream from ocean
Spirinchus thaleichthys longfin smelt	SC/ None	-	Moderately saline water, bays and estuaries	Not likely; Pleasant Grove Creek too
Linderiella occidentalis California linderiella	SC/ None	-	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan, or in sandstone depressions; where water has very low alkalinity, conductivity and total dissolved solids levels	May occur in the project area
Legenere limosa legenere	SC/ None	1B/ 2-3-3	Vernal pools; in beds of vernal pools; many historic occurrences are extirpated	May occur in the project area
Cordylanthus mollis hispidus hispid bird's beak	SC/ None	1B/ 2-3-3	Meadows, playas, valley and foothill grasslands; in damp alkaline soils, especially in alkaline meadows and alkali sinks with *Distichlis* spp.; 10 to 155 meters	Not likely; no habitat
Downingia pusilla dwarf downingia	None/ None	2/ 1-2-1	Valley and foothill grassland (mesic), vernal pools, elevation 1 to 445 meters	Observed in the project area
Sagittaria sanfordii Sanford's arrowhead	None/ None	1B/ 2-2-3	Swamps and marshes (assorted shallow freshwater), elevation 0 to 610 meters	Not likely; no habitat
Balsamorhiza macrolepis var. *macrolepis* big-scale balsamroot	None/ None	1B/ 2-2-3	Chaparral, cismontane woodland, valley and foothill grassland / sometimes serpentinite, elevation 90 to 1400 meters	Not likely; no habitat
Juncus leiospermus var. *ahartii* Ahart's dwarf rush	None/ None	1B/ 3-2-3	Valley and foothill grassland (mesic), elevation 30 to 100 meters	Not likely; no habitat

Source CNPS (2001)

[a] Federal and State Listing Codes:

E = Endangered
T = Threatened
C = Candidate

APPENDIX B
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Scientific Name Common Name	Federal/ State Listing[a]	CNPS/ R-E-D[b]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Asio flammeus short-eared owl	SC/ SC	-	Nests in marsh habitats; during winter uses grasslands, marshes, and agricultural habitats	May occur in the project area; nesting habitat would not be impacted
Carduelis lawrencei Lawrence's goldfich	SC/ None	-	Oak and pine riparian woodland, chaparral, piñon/juniper woodland, arid weedy areas near water	May occur in the project area
Chaetura vauxi Vaux's swift	SC/ SC	-	Typically associated with old growth redwood forests on the coast and in the Sierra Nevada, and man-made structures such as chimneys	Not likely; no habitat
Cypseloides niger black swift	SC/ SC	-	Mountainous cliffs, sea cliffs, and caves	Not likely; no habitat
Chlidonias niger black tern	SC/ SC	-	Freshwater marshes and wetlands in the Central Valley and northeastern California	Not likely; no habitat
Lanius ludovicianus loggerhead shrike	SC/ SC	-	Throughout California in grasslands, woodlands, and agricultural areas	May occur in the project area
Melanerpes lewis Lewis' woodpecker	SC/ None	-	Year-round resident of the Central Valley, found in open woodland or forest, including oaks and riparian areas	May occur in the project area
Numenius americanus long-billed curlew	SC/ SC	-	Large coastal estuaries; upland herbaceous areas and cultivated fields in the Central Valley	May occur in the project area
Selasphorus rufus rufous hummingbird	SC/ None	-	Coniferous forests and adjacent open fields in northern California	Not likely; no habitat
Circus cyaneus northern harrier	None/ SC	-	In the Central Valley, occurs in meadows, grasslands, rangelands, fresh and saltwater emergent wetlands	Observed in the project area
Phrynosoma coronatum frontale California horned lizard	SC/ SC, P	-	Valley-foothill hardwood, conifer, and riparian habitats, as well as pine-cypress, juniper, and annual grass habitats, basks on low boulders or rocks, burrow into soil or under objects for cover and hibernation	May occur in the project area
Clemmys marmorata northwestern pond turtle	SC/ SC, P	-	Ponds, marshes, rivers, streams, irrigation ditches, need basking sites such as partially submerged logs or rocks, and suitable upland habit (sandy banks or grassy open fields) for egg laying	Observed in the project area

APPENDIX B
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Scientific Name Common Name	Federal/ State Listing[a]	CNPS/ R-E-D[b]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Myotis evotis long-eared myotis bat	SC/ None	-	Widespread in California, avoids the arid Central Valley and hot deserts	Not likely; no habitat
Myotis ciliolabrum small-footed myotis bat	SC/ None	-	Arid woody or brushy uplands, near water, west and east sides of Sierra Nevada; elevation 0 to 2,700 meters	May occur in the project area
Corynorhinus townsendii townsendii Pacific western big-eared bat	SC/ SC	-	Prefers mesic areas; roosts in caves or similar structures	Not likely; no roosting habitat
Eumops perotis californicus greater western mastiff bat	SC/ None	-	Open, arid grassland and sparse woodland, often utilizing cliffs for breeding and roosting	May occur in the project area
Agelaius tricolor (nesting colony) tricolored blackbird	SC/ SC	-	Open water, protected nesting substrate such as blackberry brambles or emergent vegetation sufficient to accommodate at least fifty nesting pairs	Not likely; no habitat
Athene cunicularia hypugea western burrowing owl	SC/ SC	-	Grassland, sparse shrubland use abandoned burrows of ground squirrel, and other burrowing mammals, for shelter and nesting	Not likely; no small mammal burrows observed in the project area
Buteo regalis (wintering) ferruginous hawk	SC/ SC	-	Grasslands or desert with elevated structure for nest; uncommon winter resident and migrant in Central Valley	Not likely; no habitat
Plegadis chihi white-faced ibis	SC/ SC	-	Roosts among dense stands of fresh water emergent vegetation, near shallow water or muddy fields for foraging; currently known to the Central Valley as a rare summer visitor	Not likely; no habitat
Ammodramus savannarum grasshopper sparrow	SC/ None	-	Nests in dense grasslands with a thick cover of grasses and forbs in the Central Valley	Not likely; no habitat

APPENDIX B
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROJECT AREA

Scientific Name **Common Name**	**Federal/ State Listing[a]**	**CNPS/ R-E-D[b]**	**Preferred Habitat**	**Likelihood That Species May Occur in Project Area**
Pogonichthys macrolepidotus Sacramento splittail	T/ None	-	Lower Sacramento Delta, spawn over shoreline vegetation or over gravel in creek tributaries of large rivers during spring high water levels	Not likely; too far upstream from the Delta
Branchinecta lynchi vernal pool fairy shrimp	T/ None	-	Vernal pools, inhabit small, clear-water sandstone depression pools and grassed swale, earth slump, or basalt-flow depression pools	May occur in the project area
Lepidurus packardi vernal pool tadpole shrimp	E/ None	-	Seasonal pools in unplowed grassland with old alluvial soils underlain by hardpan or in sandstone depressions, water in the pools has very low alkalinity and conductivity	May occur in the project area
Desmocerus californicus dimorphus valley elderberry longhorn beetle	T/ None	-	Occurs only in the Central Valley, in association with blue elderberry shrubs; prefers to lays eggs in elderberries 2 to 8 inches in diameter, some preference for "stressed" elderberries	Not likely; there are no elderberry shrubs present in the project area
Gratiola heterosepala Boggs Lake hedge-hyssop	None/ E	1B/ 1-2-2	Marshes and swamps (freshwater), vernal pools; clay soils; usually in vernal pools, sometimes on lake margins; elevation 10 to 2,375 meters	May occur in the project area
SPECIES OF CONCERN				
Perognathus inornatus inornatus San Joaquin pocket mouse	SC/ None	-	Grasslands, blue oak savannas, needs friable soils	Not likely; no habitat
Myotis thysanodes fringed myotis bat	SC/ None	-	Widespread in California, occurring in all but the Central Valley and Colorado and Mojave deserts; generally at elevation 1,300 to 2,200 meters	Not likely; wrong elevation
Myotis volans long-legged myotis bat	SC/ None	-	Coast ranges, Cascade/Sierra ranges, Mojave Desert mountains; common above elevations of 1,200 meters	Not likely; wrong elevation
Myotis yumanensis yuma myotis bat	SC/ None	-	Forests and woodlands with sources of water over which to feed, roosts in buildings, mines, caves, crevices, occasionally under bridges	May occur in the project area

APPENDIX B
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROJECT AREA

Scientific Name **Common Name**	**Federal/ State Listing[a]**	**CNPS/ R-E-D[b]**	**Preferred Habitat**	**Likelihood That Species May Occur in Project Area**
Coccyzus americanus occidentalis western yellow-billed cuckoo	C/ E	-	Willow and cottonwood tree riparian forests and orchards. Found along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter County, and in Kern County.	Not likely; riparian habitat comprised almost entirely of oaks
Thamnophis gigas giant garter snake	T/ T, P	-	Prefers freshwater marsh and low gradient streams, has adapted to drainage canals and irrigation ditches	Not likely; outside the species' current known range, too high an elevation
Rana aurora draytonii California red-legged frog	T/ SC, P	-	Pools in marshes, streams, ponds, with emergent vegetation, and typically without predatory fish, require adequate hibernacula such as small mammal burrows and moist leaf litter	Not likely; no habitat
Oncorhynchus tshawytscha Central Valley fall-run chinook salmon	C/ SC	-	Pacific Ocean, spawn in large, permanent coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Oncorhynchus tshawytscha winter-run chinook salmon	E/ E	-	Pacific Ocean, spawn in large, permanent coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Oncorhynchus tshawytscha spring-run chinook salmon	T/ T	-	Pacific Ocean, spawn in large, permanent coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Hypomesus transpacificus Delta smelt	T/ T	-	Low-mid reaches of San Joaquin-Sacramento Delta	Not likely; too far upstream from the Delta
Oncorhynchus mykiss Central Valley steelhead	T/ T	-	Pacific Ocean, spawn in coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal

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Scientific Name Common Name	Federal/ State Listing[a]	CNPS/ R-E-D[b]	Preferred Habitat	Likelihood That Species May Occur in Project Area
LISTED SPECIES				
Riparia riparia (nesting) bank swallow	None/ T	-	Colonial nester; nests primarily in riparian and other lowland habitats; requires vertical banks/cliffs with fine textured/sandy soils near streams, rivers, lakes, or ocean to dig nesting hole	Not likely; no nesting habitat
Falco peregrinus anatum (nesting) American peregrine falcon	D/ E, FP	-	Uncommonly found in the Central Valley as a winter resident, requires protected cliffs and ledges for cover, frequents bodies of water in open areas with cliffs and cover for nesting	Not likely; no habitat
Elanus leucurus (nesting) white-tailed kite	SC/ FP	-	Low rolling foothills, valley margins with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland; dense-topped trees for nesting and perching	Observed in the project area; has nested in the vicinity
Branta canadensis leucopareia Aleutian Canada goose	D/ None	-	Open water, fields, in the Central Valley almost exclusively within the Merced National Wildlife Refuge	Not likely; this species occurs at only two distinct locations in the Central Valley
Buteo swainsoni (nesting) Swainson's hawk	None/ T	-	Breeds in stands with few trees in juniper-sage flats, riparian areas, oak savannahs, with adjacent suitable forage areas such as grasslands, or alfalfa or grain fields supporting rodent populations	May occur in the project area; mature trees suitable for nesting on the project site
Haliaeetus leucocephalus (nesting and wintering) bald eagle	T/ E, FP	-	Large lakes and rivers, coastal lagoons, sea cliffs and islands	Not likely; no habitat
Charadrius montanus mountain plover	PT/ SC	-	Central Valley (winter resident); prefers grassland for foraging	May occur in the project area
Grus canadensis tabida (nesting and wintering) greater sandhill crane	None/ T, FP	-	Winters in the Central Valley; prefers wide open habitats, including mesic grasslands, mesic croplands, and large freshwater marshes	May occur in the project area
Empidonax traillii brewsteri little willow flycather	None/ E	-	Wet meadows and riparian habitats, requires dense willow thickets for nesting and roosting	Not likely; riparian habitat comprised almost entirely of oaks

APPENDIX B

LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROJECT AREA

APPENDIX A3

IDENTIFICATION OF RELEVANT GOALS AND POLICIES PLACER COUNTY GENERAL PLAN

Section 1 – Land Use

Public and Quasi-Public Facilities, Infrastructure

Goals

Goal 1.F: To designate adequately-sized, well-located areas for the development of public facilities to serve both community and regional needs.

Agricultural Land Use

Goals

Goal 1.H: To designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Placer County's agricultural economy.

Policies

1.H.1. The County shall maintain agriculturally-designated areas for agricultural uses and direct urban uses to designated urban growth areas and/or cities.

1.H.5. The County shall require development within or adjacent to designated agricultural areas to incorporate design, construction, and maintenance techniques that protect agriculture and minimize conflicts with adjacent agricultural uses.

1.H.6. The County shall require a new non-agricultural development immediately adjacent to agricultural lands to be designed to provide a buffer in the form of a setback of sufficient distance to avoid land use conflicts between the agricultural uses and the non-agricultural uses. Such setback or buffer areas shall be established by recorded easement or other instrument, subject to the approval of County Counsel. A method and mechanism (e.g., a homeowners association or easement dedication to a non-profit organization or public entity) for guaranteeing the maintenance of this land in a safe and orderly manner shall be also established at the time of development approval.

Open Space, Habitat, and Wildlife Resources

Goals

Goal 1.I: To establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community's enjoyment.

Visual and Scenic Resources

Goals

Goal 1.K: To protect the visual and scenic resources of Placer County as important quality-of-life amenities for county residents and a principal asset in the promotion of recreation and tourism.

Policies

1.K.5. The County shall require that new roads, parking, and utilities be designed to minimize visual impacts. Unless limited by geological or engineering constraints, utilities should be installed underground and roadways and parking areas should be designed to fit the natural terrain.

Economic Development

South Placer Policies

1.N.12. The County shall seek the establishment of a joint-powers authority (JPA) between the County and the cities of Roseville, Rocklin, and Lincoln in order to improve the provision of infrastructures in the incorporated and unincorporated areas in and around the Sunset Industrial Area. The JPA is to also develop an economic development strategy with the goal of improving the economic development potential of the region.

Section 4 –Public Facilities and Services

Stormwater Drainage

Goals

Goal 4.E: To collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.

Policies

4.E.1. The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

4.E.2. The County shall support efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state.

4.E.3. The County shall consider using stormwater of adequate quality to replenish local groundwater basins, restore wetlands and riparian habitat, and irrigate agricultural lands.

4.E.6. The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.

4.E.8. The County shall consider recreational opportunities and aesthetics in the design of stormwater ponds and conveyance facilities.

4.E.10. The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, and other best management practices (BMPs)

4.E.11. The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.

Flood Protection

Goals

Goal 4.F: To protect the lives and property of the citizens of Placer County from hazards associated with development in floodplains and manage floodplains for their natural resource values.

Policies

4.F.2. The County shall recognize floodplains as a potential public resource to be managed and maintained for the public's benefit.

4.F.3. The County shall continue to work closely with the U.S. Army Corps of Engineers, the resource conservation district, the Federal Emergency Management Agency, the State Department of Water Resources, and the Placer County Flood Control District, in defining existing and potential flood problem areas.

4.F.5. The County shall attempt to maintain natural conditions within the 100-year floodplain of all rivers and streams except under the following circumstances:

a. Where work is required to manage and maintain the stream's drainage characteristics and where such work is done in accordance with the *Placer County Flood Damage Prevention Ordinance*, California Department of Fish and Game regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers; or

b. When facilities for the treatment of urban runoff can be located in the floodplain, provided that there is no destruction of riparian vegetation.

4.F.6. The County shall continue to coordinate efforts with local, state, and federal agencies to achieve adequate water quality and flood protection.

4.F.7. The County shall cooperate with the Placer County Flood Control and Water Conservation District, surrounding jurisdictions, the cities in the county, and other public agencies in planning and implementing regional flood control improvements.

4.F.8. The County shall, where possible, view flood waters as a resource to be used for waterfowl habitat, aquifer recharge, fishery enhancement, agricultural water supply, and other suitable uses.

4.F.9. The County shall continue to implement floodplain zoning and undertake other actions required to comply with state floodplain requirements, and to maintain the County's eligibility under the Federal Flood Insurance Program.

4.F.10. The County shall preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors.

4.F.11. To the extent that funding is available, the County shall work to solve flood control problems in areas where existing development has encroached into a floodplain.

4.F.12. The County shall promote the use of natural or non-structural flood control facilities, including off-stream flood control basins, to preserve and enhance creek corridors.

Section 5 – Recreational and Cultural Resources

Public Recreation and Parks

Policies

5.A.11. Regional and local recreation facilities should reflect the character of the area and the existing and anticipated demand for such facilities.

5.A.12. The County shall encourage recreational development that complements the natural features of the area, including the topography, waterways, vegetation, and soil characteristics.

5.A.13. The County shall ensure that recreational activity is distributed and managed according to an area's carrying capacity, with special emphasis on controlling adverse environmental impacts, conflict between uses, and trespass. At the same time, the regional importance of each area's recreation resources shall be recognized.

5.A.14. The County shall encourage federal, state, and local agencies currently providing recreation facilities to maintain, at a minimum, and improve, if possible, their current levels of service.

5.A.15. The County shall promote the provision of non–membership-restricted hunting areas on public and private land in the western part of the county.

5.A.22. The County shall encourage compatible recreational use of riparian areas along streams and creeks where public access can be balanced with environmental values and private property rights.

Recreational Trails

Goals

Goal 5.C: To develop a system of interconnected hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation.

Policies

5.C.1. The County shall support development of a countywide trail system designed to achieve the following objectives:

a. Provide safe, pleasant, and convenient travel by foot, horse, or bicycle;

b. Link residential areas, schools, community buildings, parks, and other community facilities within residential developments. Whenever possible, trails should connect to the countywide trail system, regional trails, and the trail or bikeways plans of cities;

c. Provide access to recreation areas, major waterways, and vista points;

d. Provide for multiple uses (i.e., pedestrian, equestrian, bicycle);

e. Use public utility corridors such as power transmission line easements, railroad rights-of-way, irrigation district easements, and roadways;

f. Whenever feasible, be designed to separate equestrian trails from cycling paths, and to separate trails form the roadway by the use of curbs, fences, landscape buffering, and/or spatial distance;

g. Connect commercial areas, major employment centers, institutional uses, public facilities, and recreational areas with residential areas; and

h. Protect sensitive open space and natural resources.

5.C.2. The County shall support the integration of public trail facilities into the design of flood control facilities and other public works projects whenever possible.

5.C.3. The County shall work with other public agencies to coordinate the development of equestrian, pedestrian, and bicycle trails.

Section 6 – Natural Resources

Water Resources

Goals

Goal 6.A: To protect and enhance the natural qualities of Placer County's streams, creeks, and groundwater.

Policies

6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet form the centerline of intermittent streams, and 50 feet from the edge of habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened, or endangered species (see discussion of sensitive habitat buffers in Part I of this *Policy Document*). Based on more detailed information supplied as part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

a. Reasonable use of the property would otherwise be denied;

b. The location is necessary to avoid or mitigate hazards to the public;

c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

d. The location is necessary for the construction of new roads, bridges, rails, or similar infrastructure where the county determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

6.A.2. The County shall require all development in the 100-year floodplain to comply with the provisions of the *Placer County Flood Damage Prevention Ordinance.*

6.A.4. Where creek protection is required or proposed, the County should require public and private development to:

a. Preserve creek corridors and creek setback areas through easements or dedications. Parcel lines (in the case of a subdivision) or easements (in the case of a subdivision or other development) shall be located to optimize resource protection. If a creek is proposed to be included within an open space parcel or easement, allowed uses and maintenance responsibilities within that parcel or easement should be clearly defined and conditioned prior to map or project approval;

b. Designate such easement or dedication areas (as described in a. above) as open space;

c. Protect creek corridors and their habitat value by actions such as: 1) providing an adequate creek setback; 2) maintaining creek corridors in an essentially natural state; 3) employing creek restoration techniques where restoration is needed to achieve a natural creek corridor; 4) utilizing riparian vegetation within creek corridors, and where possible, within creek setback areas; 5) prohibiting the planting of invasive, non-native plants (such as vinca major and eucalyptus) within creek corridors or creek setbacks; and 6) avoiding tree removal within creek corridors;

d. Provide recreation and public access areas near creeks consistent with other *General Plan* policies;

e. Use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize siltation, sedimentation, and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off site; and 2) temporary vegetation sufficient to stabilize disturbed areas.

f. Provide for long-term creek corridor maintenance by providing a guaranteed financial commitment to the County which accounts for all anticipated maintenance activities.

6.A.5. The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.

6.A.7. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

6.A.12. The County shall encourage the protection of floodplain lands and where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.

Implementation Programs

6.3. The County shall cooperate with interested state agencies and private organizations to provide public interpretative services at select locations on County-owned or –managed property that contains creek resources to increase public knowledge and appreciation of such resources.

Wetland and Riparian Areas

Goals

Goal 6.B: To protect wetland communities and related riparian areas throughout Placer County as valuable resources.

Policies

6.B.1. The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

6.B.3. The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

6.B.4. The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the survival and nesting of wetland and riparian species.

6.B.5. The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for

determining when an alteration to a wetland is considered a less than significant impact under CEQA.

Fish and Wildlife Habitat

Goals

Goal 6.C: To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

Policies

6.C.1. The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

a. Wetland areas including vernal pools.

b. Stream environment zones.

c. Any habitat for rare, threatened, or endangered animals or plants.

d. Critical deer winter ranges (winter and summer), migratory routes, and fawning habitat.

e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.

f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.

g. Important spawning areas for anadromous fish.

6.C.2. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.

6.C.5. The County shall require mitigation for development projects where isolated segments of stream habitat are unavoidably altered. Such impacts should be mitigated on-site with in-kind habitat replacement or elsewhere in the stream system through stream or riparian habitat restoration work.

6.C.6. The County shall support preservation of the habitats of rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.

6.C.7. The County shall support the maintenance of suitable habitats for all indigenous species of wildlife, without preference to game or non-game species, through maintenance of habitat diversity.

6.C.8. The County shall support the preservation or re-establishment of fisheries in the rivers and streams within the county, whenever possible.

6.C.9. The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for acquiring, restoring, and enhancing at least an equivalent amount of like habitat within or near the project area.

6.C.10. The County will use the California Wildlife Habitat Relationship (WHR) system as a standard descriptive tool and guide for environmental assessment in the absence of a more detailed site-specific system.

6.C.11. Prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the County shall require, as part of the environmental review process, a biotic resources evaluation of the sites by a wildlife biologist; the evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of rare, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources, and will identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible. In approving any such discretionary development permit, the decisionmaking body shall determine the feasibility of the identified mitigation measures.

Significant ecological resource areas shall, at a minimum, include the following:

a. Wetland areas including vernal pools.

b. Stream environment zones.

c. Any habitat for rare, threatened, or endangered animals or plants.

d. Critical deer winter ranges (winter and summer), migratory routes, and fawning habitat.

e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.

f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.

g. Important spawning areas for anadromous fish.

6.C.12. The County shall cooperate with, encourage, and support the plans of other public agencies to acquire fee title or conservation easements to privately-owned lands in order to preserve important wildlife corridors and to provide habitat protection of California Species of Concern and state or federally listed rare, threatened, or endangered plant and animal species.

6.C.13. The County shall support and cooperate with the efforts of other local, state, and federal agencies and private entities engaged in the preservation and protection of significant biological resources from incompatible land uses and development. Significant biological resources include endangered, threatened, or rare species and their habitats, wetland habitats, wildlife migration corridors, and locally-important species/ communities.

Vegetation

Goals

Goal 6.D: To preserve and protect the valuable vegetation resources of Placer County.

Policies

6.D.3. The County shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

6.D.6. The County shall ensure the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife.

6.D.7. The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitat. Such communities shall be restored or expanded, where possible.

6.D.10. The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for wildlife, and ensure that a maximum number and variety of well-adapted plans are maintained.

6.D.14. The County shall require that new development avoid, as much as possible, ecologically-fragile areas (e.g., areas of rare or endangered species of plants, riparian areas). Where feasible, these areas should be protected through public acquisition of fee title or conservation easements to ensure protection.

Open Space for the Preservation of Natural Resources

Goals

Goal 6.E: To preserve and enhance open space lands to maintain the natural resources of the county.

Policies

6.E.1. The County shall support the preservation and enhancement of natural land forms, natural vegetation, and natural resources as open space to the maximum extent feasible. The County shall permanently protect, as open space, areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.

6.E.3. The County shall support the maintenance of open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement, and sustain ecosystems.

6.E.4. The County shall encourage either private or public ownership and maintenance of open space.

6.E.5. The County shall coordinate with local, state, and federal agencies and private organizations to establish visual and physical links among open space areas to form a system that, where appropriate, includes trails. Dedication of easements shall be encouraged, and in many cases, required as lands are developed and built.

Section 7 – Agricultural and Forestry Resources

Agricultural Land Use

Goals

Goal 7.A: To provide for the long-term conservation and use of agriculturally-designated lands.

Policies

7.A.1. The County shall protect agriculturally-designated areas from conversion to non-agricultural uses.

7.A.2. The County shall ensure that unincorporated areas within city spheres of influence that are designated for agricultural uses are maintained in larger parcel sizes of 10-acre minimum or larger.

7.A.3. The County shall encourage continued and, where possible, increased agricultural activities on lands suited to agricultural uses.

7.A.4. The County shall provide protection from flooding for agricultural and related activities from flooding.

7.A.13. The County shall encourage multi-seasonal use such as private recreational development, agricultural lands, and timberlands to enhance the economic viability.

Land Use Conflicts

Goals

Goal 7.B: To minimize existing and future conflicts between agricultural and non-agricultural uses in agriculturally-designated areas.

Agricultural Water

Policies

7.D.3. The County should participate with cities and special districts in establishing programs for the agricultural re-use of treated wastewater in a manner that would be economically beneficial to agriculture.

Section 8 – Health and Safety

Seismic and Geologic Hazards

Policies

8.A.5. In landslide hazard areas, the County shall prohibit alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.

Flood Hazards

Goals

Goal 8.B: To minimize the risk of loss of life, injury, damage to property, and economic and soil dislocations resulting from flood hazards.

Policies

8.B.1. The County shall promote flood control measures that maintain natural conditions within the 100-year floodplain of rivers and streams.

8.B.5. The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.

8.B.7. The County shall require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.

8.B.8. The County shall require that flood management programs avoid alteration of waterways and adjacent areas, whenever possible.

APPENDIX A3

PLACER COUNTY GENERAL PLAN

APPENDIX A2

IDENTIFICATION OF RELEVANT GOALS AND POLICIES CITY OF ROSEVILLE GENERAL PLAN

Section II – Land Use Element

Policies *Community Form – Relationship of New Development (RND)*

1. Require that new development areas and associated community-wide facilities (open space resources, parks, libraries, etc.) Be linked and oriented to existing developed areas of the community through road networks, public transit systems, open space systems, bike way and pedestrian systems, and other physical connections.

Policies *Community Form – Community Involvement and Interjurisdictional Cooperation (CI & IC)*

3. Coordinate and take a lead role, where feasible, with local state, federal and other jurisdictional agencies on regional issues of importance including but not limited to air quality, transportation, water supply, sewage treatment, solid waste disposal and recycling, flood control, hazardous waste management, resource protection and transit.

4. To the extent feasible, coordinate land use policies and public improvements with neighboring jurisdictions.

Goals *Growth Management*

Goal 1 The City shall proactively manage and plan for growth.

Goal 2 The City shall encourage a pattern of development that promotes the efficient and timely provision of urban infrastructure and services, and preserves valuable natural and environmental resources.

Goal 3 Growth shall mitigate its impacts through consistency with the General Plan goals and polices and shall provide a positive benefit to the community.

Goal 6 The City shall manage and evaluate growth in a regional context, not in isolation.

Section III – Circulation Element

Goals *Bikeways/Trails*

Goal 1 Provide a safe, comprehensive and integrated bikeway and trail system that encourages the use of bikes and walking for commuting, recreational and other trips.

Section V – Open Space and Conservation Element

Goals *Open Space System*

Goal 1 Establish a comprehensive system of public and private open space, including interconnected open space corridors that should include oak woodlands, riparian areas, grasslands, wetlands, and other open space resources.

Goal 3 Provide access to public open space areas through the establishment of a series of public linkages that will be adequately managed and protected.

Goal 4 Integrate, where feasible, passive recreational and educational opportunities with the protection of wildlife and vegetation habitat areas.

Policies *Open Space System*

1. Integrate, where feasible, passive recreational and educational opportunities with the protection of wildlife and vegetation habitat areas.

2. Provide interconnected open space corridors between open space and habitat resources, recreation areas, schools, employment, commercial service and residential areas.

3. Work with adjacent jurisdictions to connect the City with regional open space and trail systems, providing a network of open space and habitat resources, pathways and, where reasonable, equestrian trails through the City to link nearby communities.

5. Provide access to public open space resources except in those areas determined by the City to be sensitive to human presence.

6. Take into account consideration of natural habitat areas in developing linkages and in preserving open space areas. Identify alternate sites for linkages where sensitive habitat areas have the potential to be adversely impacted.

7. Maximize opportunities for preservation and maintenance of open space resources, including establishment of private open space areas and coordination with non-profit organizations.

8. Provide opportunities for public education through the City's public open space system, natural resource areas, and parks and recreation facilities.

Goals *Vegetation and Wildlife*

Goal 1 Preserve, protect, and enhance a significant system of interconnected natural habitat areas, including creek and riparian corridors, oak woodlands, wetlands, and adjacent grassland areas.

Goal 2 Maintain healthy and well-managed habitat areas in conjunction with one another, maximizing the potential for open space, recreation, and visual experiences.

Goal 3 Protect special-status species and other species that are sensitive to human activities.

Policies *Vegetation and Wildlife*

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.

2. Preserve and rehabilitate continuous riparian corridors and adjacent habitat along the City's creeks and waterways.

3. Require dedication of the 100-year flood plain or comparable mechanism to protect habitat and wildlife values in perpetuity.

4. Require preservation of contiguous areas in excess of the 100-year flood plain as merited by special resources or circumstances. Special circumstances may include, but are not limited to, sensitive wildlife or vegetation, wetland habitat, oak woodland areas, grassland connections in association with other habitat areas, slope or topographical considerations, recreation opportunities, and maintenance access requirements.

5. Limit recreation activities within the 100-year flood plain and require additional setback areas for trails and other public recreation uses so that natural resource areas are not adversely impacted.

6. Provide for protection and enhancement of native fishery resources, including continued coordination with the California Department of Fish and Game to release water into Linda Creek.

9. Limit the access of pedestrians and cyclists to vernal pool and wetland areas so that access is compatible with long-term protection of these natural resource areas.

10. Manage public lands with special-status species to encourage propagation of the species and discourage non-indigenous, invasive species.

11. Habitat preservation and mitigation for woodlands, creeks, riparian and seasonal wetland areas should occur within the defined boundaries of the impacting projects where long-term resource viability is feasible and desirable.

13. Work with adjacent jurisdictions, regulatory agencies, and community organizations to explore opportunities for regional mitigation banking.

Goals *Groundwater Recharge and Water Quality*

Goal 1 Continue to improve surface water quality and accommodate water flow increases.

Goal 2 Enhance the quantity and quality of groundwater resources.

Policies *Groundwater Recharge and Water Quality*

1. Utilize cost-effective urban run-off controls, including Best Management Practices, to limit urban pollutants from entering the water courses.

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

Section VI – Parks and Recreation Element

Goals *Parks and Recreation*

Goal 1 Provide adequate park land, recreational facilities and programs within the City of Roseville through public and private resources.

Goal 2 Provide residents with both active and passive recreation opportunities by maximizing the use of dedicated park lands and open space areas.

Policies *Parks and Recreation*

9. Continue to maintain and upgrade as necessary City parks and open space areas through the Parks and Recreation Department, to assure safe, clean and orderly facilities.

11. Through parks and recreation facilities and programs, accommodate those with special needs, including teenagers, seniors and the disabled, and meet the requirements of the American Disabilities Act.

Section VIII – Safety Element

Policies *Seismic and Geologic Hazards*

6. Require contour grading, where feasible, and re-vegetation to mitigate the appearance of engineered slopes and to control erosion.

Floodplain Designation Policy

In the City of Roseville floodplain policy focuses on two primary objectives: 1) To minimize the potential for flood damage by providing for the safe movement of flood waters through the City; and 2) To preserve, protect and enhance the natural habitat, open space and recreational values found along Roseville's floodplain and creek environments. The goals, policies and implementation measures within this Element focus primarily on the safety objective. It is intended that these policies be utilized in combination with the policies contained within the Open Space and Conservation Element to ensure full implementation of the objectives stated above.

Goals *Flood Protection*

Goal 1 Minimize the potential for loss of life and property due to flooding.

Goal 2 Pursue flood control solutions that are cost-effective and minimize environmental impacts.

Policies *Flood Protection*

3. Continue to pursue a regional approach to flood issues.

5. Minimize the potential for flood damage to public and emergency facilities, utilities, roadways, and other infrastructure.

6. Require new developments to provide mitigation to insure that the cumulative rate of peak run-off is maintained at pre-development levels.

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

9. Where feasible, maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality, and open space functions.

Section IX – Noise Element

Policies *Noise–General*

10. Regulate construction related noise to reduce impacts on adjacent uses consistent with the City's Noise Ordinance.

APPENDIX A2

CITY OF ROSEVILLE GENERAL PLAN

APPENDIX A1

IDENTIFICATION OF RELEVANT GOALS AND POLICIES CITY OF ROSEVILLE BIKEWAY MASTER PLAN

Bikeway Master Plan Element

Recreation

Policies

b. Create a system that links public open spaces and recreational facilities.

Interconnectivity

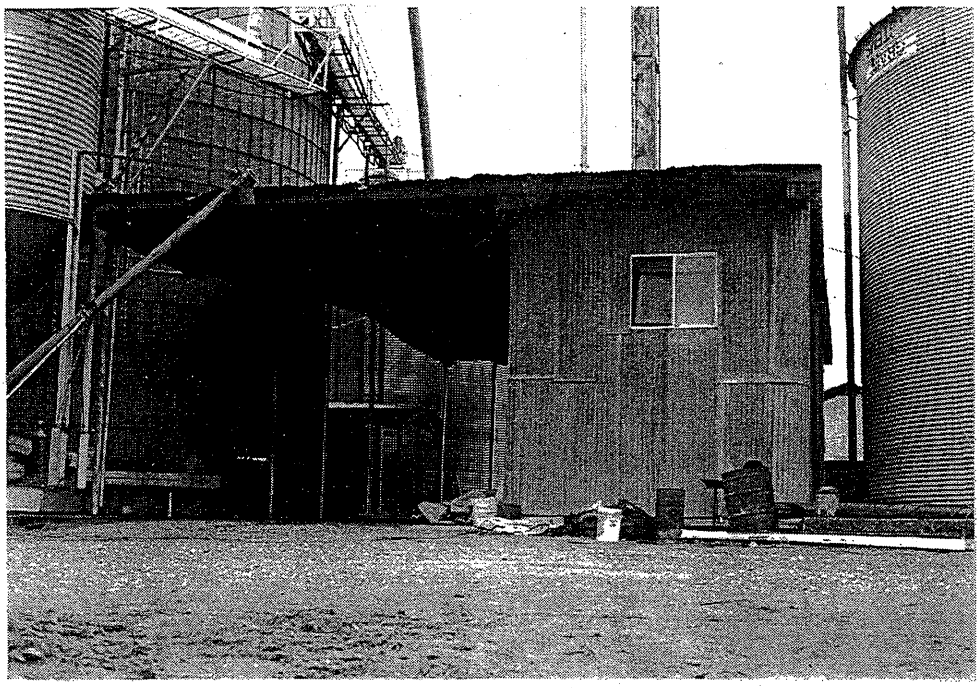
Objectives

Provide a bikeway system that will offer convenient routes between employment centers, residential areas, recreation centers, parks, schools, shopping centers, transit stops, train stations and will close gaps in the existing system and between planned bikeways.

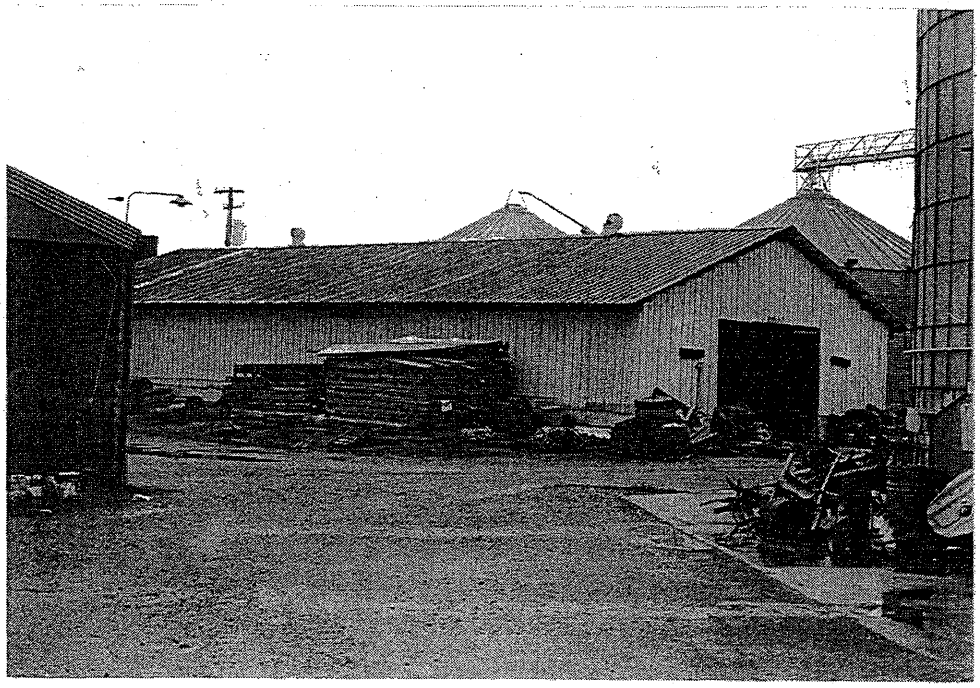
Connectivity

Policies

a. Coordinate with Placer County and adjacent jurisdictions to create continuity and consistency with existing and planned bikeway systems.

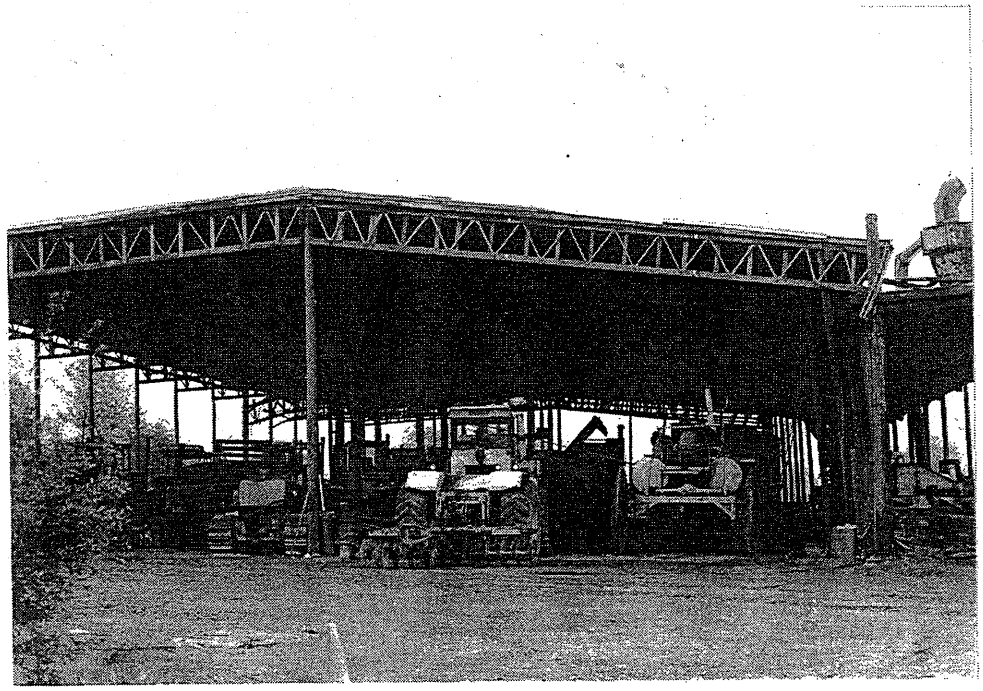


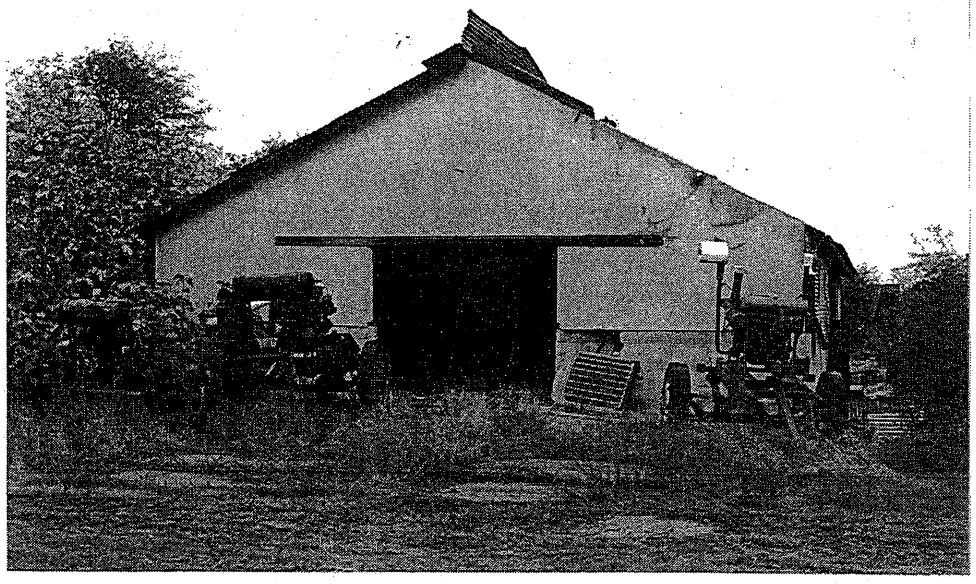
Above: Shop or office building at 6662 Phillips Road
Below: Storage shed at 6662 Phillips Road

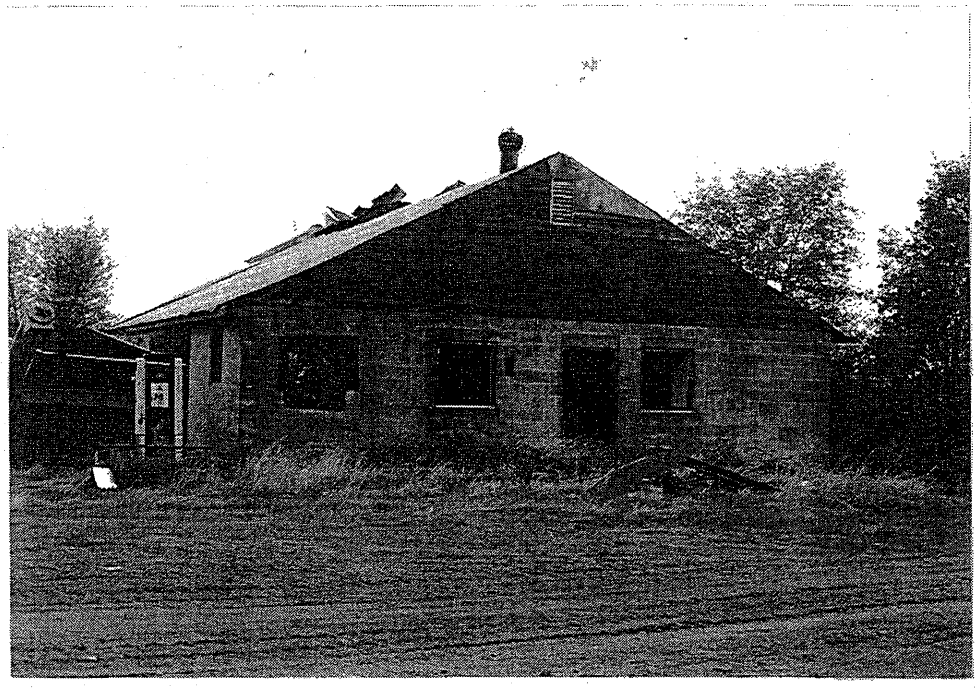




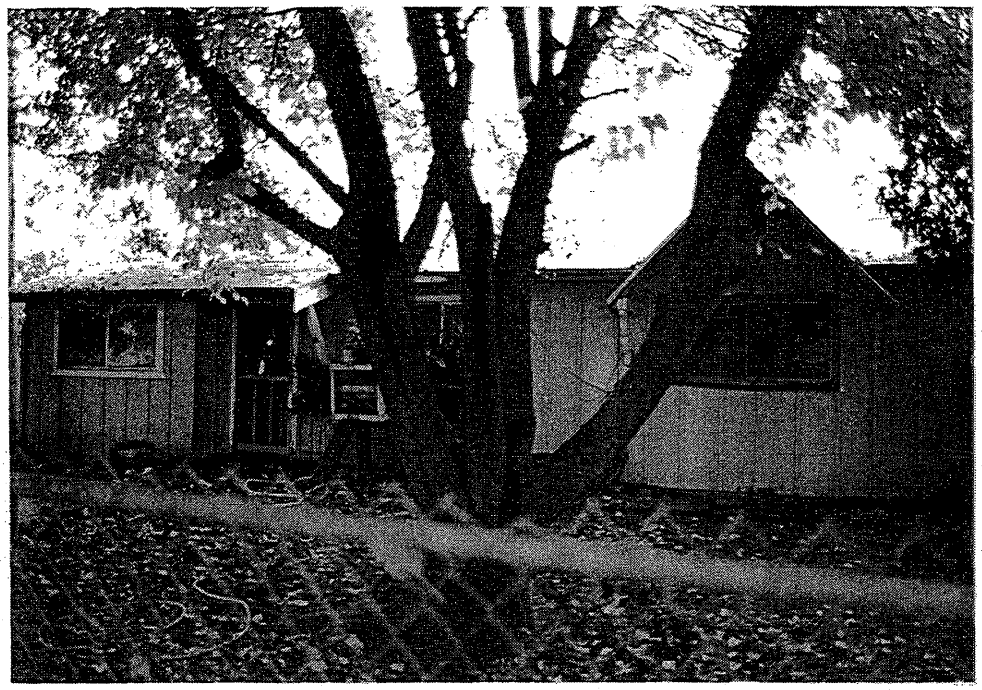
Above: Vehicle storage shed with metal-clad gables at 6662 Phillips Road
Below: Vehicle storage shed made of wood at 6662 Phillips Road



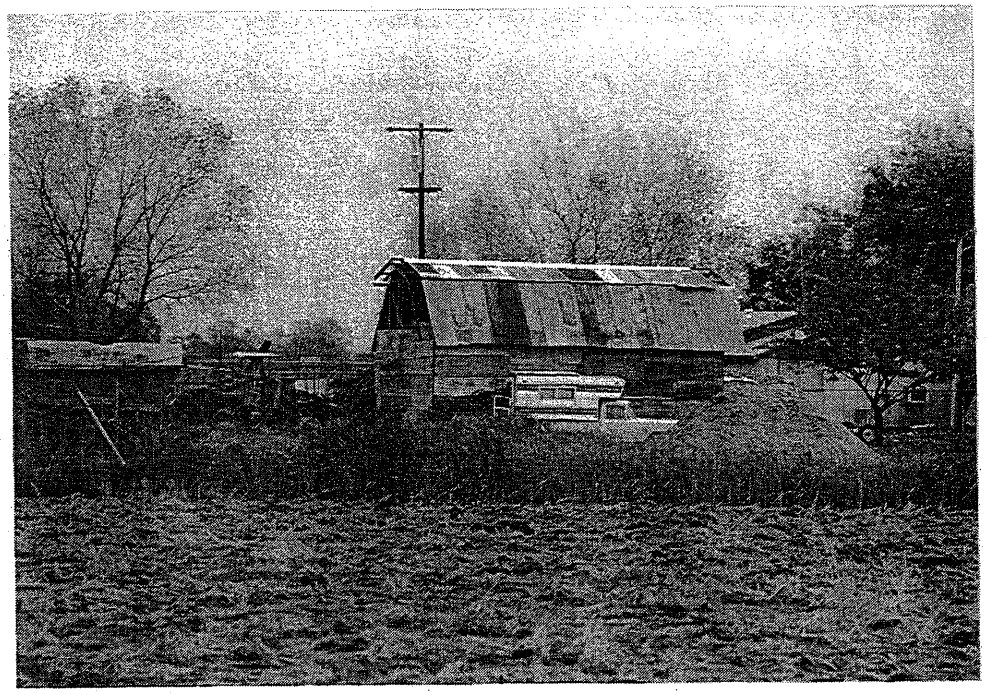




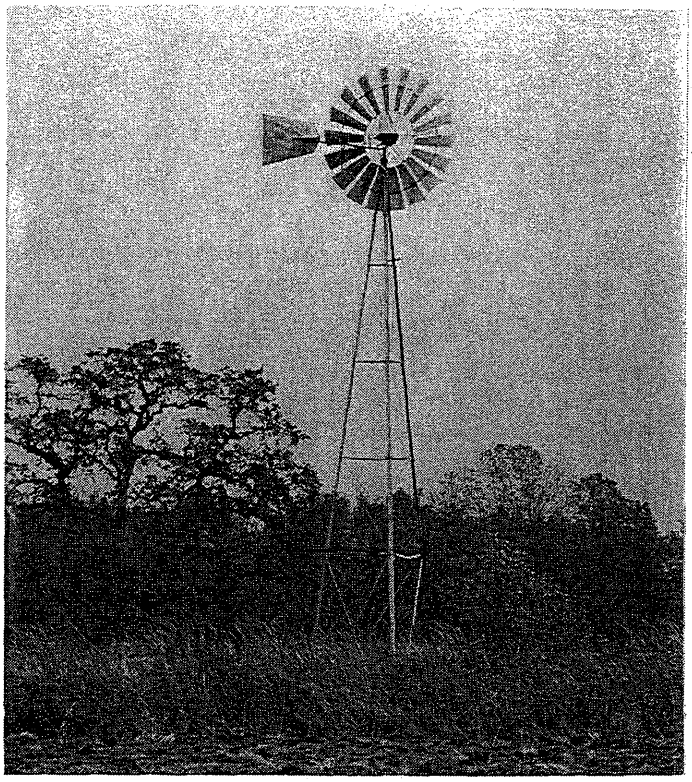
Two views of the dairy barn at 6662 Phillips Road. The top view shows the side of the barn that has been coated with stucco. This building appears to date from the late 1940s or the 1950s.



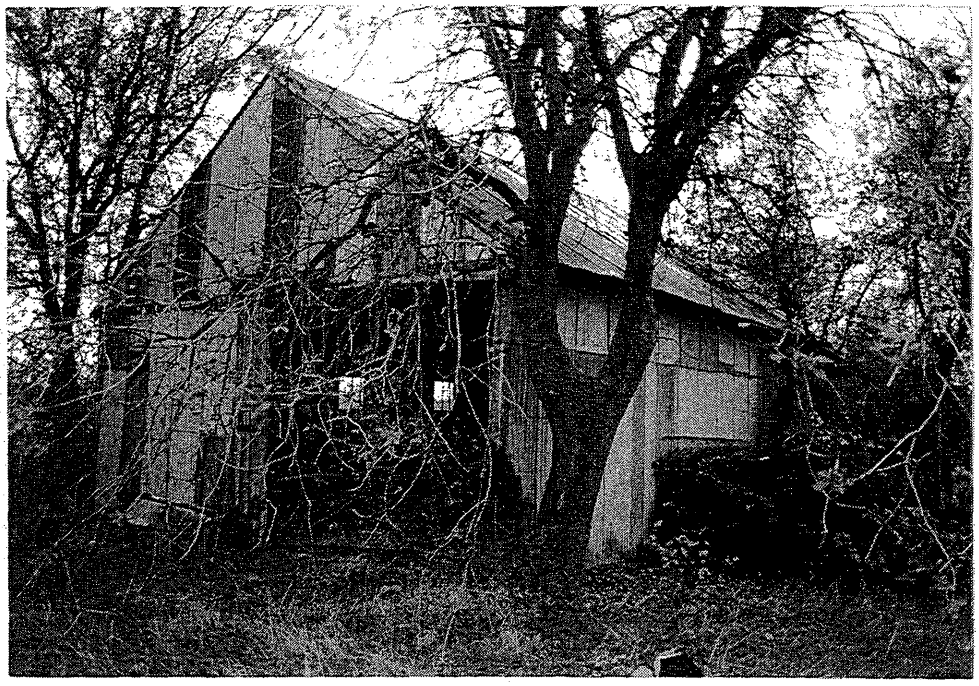
Above is a house at 6996 Phillips Road (site C on Location Map). It is made of plywood with battens and appears to date to the 1960s or 1970s. Below is the gambrel-roof barn that is located nearly adjacent to this house.



At right: Windmill made of metal (site D on Location Map)



Below: Barn made of sheet metal with wood posts (site E on Location Map)



APPENDIX C2

ARCHAEOLOGICAL RECONNAISSANCE OF THE 1,329-ACRE REASON FARMS

URS

ARCHAEOLOGICAL RECONNAISSANCE OF THE 1,329 ACRE REASON FARMS, FOR THE CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

March 2002

ARCHAEOLOGICAL RECONNAISSANCE OF THE 1,329 ACRE REASON FARMS, FOR THE CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

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March 2002

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1.0 INTRODUCTION

During the months of November and December 2001, a team of archaeologists from URS Corporation conducted an archaeological pedestrian reconnaissance of a 1,329 acre property in Placer County, California. The property, herein referred to as Reason Farms, is located in the southwestern portion of the County approximately 2.4 miles west of the Roseville city limits. The site is an irregularly shaped property, with northwestern and southeastern fingers jutting out from a central rectangle. The northernmost portion of the site abuts Sunset Boulevard West, and the southernmost boundary of the site lies along Phillip Road (Figure 1).

The City of Roseville is interested in developing Reason Farms into a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville (City) or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The City engaged URS Corporation (URS), in association with Phillip Williams & Associates (PWA), to assist in this undertaking. This report documents the archaeological reconnaissance conducted on Reason Farms in support of these efforts.

2.0 REGULATORY SETTING

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Numerous laws, regulations, and statutes on both the federal and State levels seek to protect and target the management of cultural resources. These include the: Antiquities Act of 1906; Historic Sites Act of 1935; Reservoir Salvage Act of 1960; National Historic Preservation Act of 1966; National Environmental Policy Act of 1969; Executive Order 11593 (Projection and Enhancement of the Cultural Environment, 5/13/1971); 36 CFR 800 and CFR 60 (Advisory Council on Historic Preservation: Protection of Historic and Cultural Properties, Amendments to Existing Regulations, 1/30/1979, National Register of Historic Places, Nominations by States and Federal Agencies, Rules and Regulations, 1/9/1976); Revisions to 36 CFR 800 (Protection of Historic Properties, 1/10/1986); Archaeological and Historical Preservation Act of 1974; American Indian Religious Freedom Joint Resolution of 1978; Archaeological Resources Protection Act of 1979; Native American Graves Protection and Repatriation Act of 1990; and the California Environmental Quality Act. Collectively these regulations and guidelines establish a comprehensive program for the identification, evaluation, and treatment of cultural resources.

CEQA requires that public or private projects financed or approved by State or local agencies must assess the effects of the project upon cultural resources. CEQA requires that if project implementation results in significant effects to important cultural resources, then alternative plans and/or mitigation measures must be considered. However, only "important" cultural resources need to be addressed. Under CEQA, important cultural resources are those that are either listed or eligible to be listed on the National Register of Historic Places (NRHP); listed or eligible to be listed on the California Register of Historical Resources (CRHR); registered or eligible to be registered as a State Historical Landmark; or included in any responsible local inventory of historic properties.

As of January 1, 1998 for a cultural resource to be deemed "important" under CEQA and thus eligible for listing to the CRHR, it must meet at least one of the following criteria:

(a) the resource is associated with events that have made a significant contribution to the broad patterns of California History and cultural heritage;

(b) the resource is associated with the lives of persons important to our past;

(c) the resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or,

(d) the resource has yielded, or may be likely to yield, information important in prehistory or history.

3.0 ENVIRONMENTAL SETTING

As mentioned previously, the Reason Farms project area encompasses 1,329 acres. Currently, 1,120 acres (84 percent) of the property has been terraced for the cultivation of rice. Another 111 acres (9 percent) currently lies fallow, presumably for the occasional grazing of livestock. A well-developed band of riparian forest borders the length of the main branch of Pleasant Grove Creek, including heavily wooded areas in the center of the Reason Farms site, encompassing 74 acres (6 percent of the total acreage). A 9-acre freshwater marsh (<1 percent) is also present along a channelized seasonal tributary of Pleasant Grove Creek. Lastly, 15 acres (<1 percent) has been developed for activities associated with the operation of the farm including two residential structures, two barns, rice processing plant with grain silos, assorted work shops, various outbuildings, and equipment storage areas. Prior to the channelizing of the seasonal drainages and the leveling of the fields to accommodate rice cultivation, the property was likely dominated by annual grasslands with oak woodland and riparian vegetation concentrated along the stream courses.

4.0 CULTURAL SETTING

As a background to discussion of cultural resources within the project area, overviews of prehistory, ethnography, and history are provided below.

4.1 PREHISTORY

The Roseville vicinity lies directly adjacent to one of the most intensively studied areas in California, the Sacramento/San Joaquin River Delta and adjoining sections of the Sacramento and San Joaquin Valleys. Beginning in the last decade of the nineteenth century, avocational archaeologists recovered thousands of artifacts from numerous sites in the Delta vicinity. A general synthesis of these early works is found in Schenk and Dawson (1929).

The next series of excavations in the general region were conducted by student crews from Sacramento Junior College (SJC). Beginning in 1931, various sites adjacent to the Cosumnes River and Deer Creek confluence were excavated. Joined a few years later by crews from the University of California (UC), the SJC archaeologists continued their excavations within the Delta region. These efforts culminated in the milestone works of Lillard and Purves (1936) and Lillard, Heizer, and Fenenga (1939), both of which identified a sequence of cultural change within the Delta and adjacent vicinities.

The cultural sequence identified by Lillard and his colleagues (1936; 1939) contained three cultural periods (Early, Intermediate/Transitional, Late), which were based upon changes observed within the mortuary patterns and grave furniture recovered from their sample of sites. Lillard, Heizer, and Fenenga (1939) believed that the sequence represented a single cultural progression, the Early Period evolving into the Transitional Period, the Transitional Period evolving into the Late Period.

As more archaeological work was conducted within central California during the 1940s and 1950s, the cultural sequence developed by Lillard and his colleagues (1936; 1939) was refined and expanded to accommodate the additional data. The most significant of these revisions was Beardsley's (1954)

Temporal and Areal Relationships in Central California Archaeology, in which the Central California Taxonomic System (CCTS) was formally developed.

As archaeologists in central California began trying to incorporate their data into the CCTS, the limitations of Beardsley's system became apparent. Alterations to the CCTS began appearing in the literature of the discipline, with the doctoral dissertation of Fredrickson (1973) being of the most consequence.

After many debates and numerous revisions, the cultural sequence for the central California region, first defined by Lillard and his colleagues (1936; 1939), currently stands as follows:

Windmiller Pattern (ca. 3000 B.C. - 500 B.C.)

The artifact assemblage characteristic of this cultural manifestation includes a variety of flaked stone, ground stone, baked clay, and shell items reflecting exploitation of diverse subsistence resources and acquisition of materials from distant geographic areas through trade. The burial pattern of Windmiller cemeteries and grave plots is unique in that virtually all of the interments are ventrally extended, with the head oriented to the west. The primary exception to this burial pattern is that aged females were buried in a flexed position. Social stratification can be inferred from the burial practices of Windmiller peoples. Males appear to generally have higher status than females, as evidenced in their deeper and artifactually richer graves. Social status may have been at least partially inherited, for some female, child, and infant burials contained elaborate grave furniture, while others lacked such wealth (Moratto 1984:201-207).

Berkeley Pattern (ca. 500 B.C. - A.D. 500)

The Berkeley Pattern represents a gradual shift in adaptation and material culture that appears to have originated within the San Francisco Bay region. The subsistence practices of Berkeley peoples differs from that of the Windmiller peoples in that the utilization of acorns for food seems to have increased dramatically. The reliance on acorns is evidenced in the increase in mortars and pestles recovered from Berkeley Pattern sites. Other differences in material culture include the occurrence of an extensive bone tool kit, unique knapping techniques, and certain types of shell beads and pendants within Berkeley Pattern sites. Burial practices of Berkeley peoples also differed from those of Windmiller Pattern sites. No longer were corpses placed into graves extended towards the west. Instead, Berkeley Pattern burials are flexed with variable orientation (Moratto 1984:207-211).

Augustine Pattern (ca. A.D. 500 -A.D. 1880)

The Augustine Pattern reflects local innovation in technology, as well as the incorporation of new developments with traits of the Berkeley Pattern. The artifact assemblages of Augustine Pattern sites indicate an increased reliance on hunting, gathering, and fishing. Acorns appear to have become particularly important. Many burials continue to be flexed, however, cremation becomes the mortuary practice for high-status burials. Extensive trade networks developed to accommodate the resource and social needs of the burgeoning populations (Moratto 1984:211-214).

4.2 ETHNOLOGY

The Roseville vicinity is within the ethnographic territory of the Nisenan, one of three Maiduan speaking tribelets inhabiting the north-eastern half of the Sacramento Valley and the adjoining western slopes of the Sierra Nevada. Also known as the Southern Maidu, the Nisenan inhabited the named villages of *Pichiku* and *Bamuma* near present day Roseville and Lincoln respectively (Wilson and Towne, 1978: Figure 1).

Ethnographic data on the Nisenan have been presented within several original works specifically focused upon them (Beals 1933; Faye 1923; Gifford 1927; Kroeber 1929; Littlejohn 1928; Ritter and Schulz 1972; Uldall and Shipley 1966); however, the primary reference is found within Kroeber's (1925) overview of California Indians. A synthesis of Nisenan ethnography has been written by Wilson and Towne (1978), who also compiled a bibliography devoted to general Maidu ethnography (1972). An early account of Nisenan life is found within Powers' (1877) study of California Indians.

The Nisenan were the southernmost of three groups (Konkow, Nisenan, and Maidu) who spoke a Maiduan language. Maiduan is one of California's four Penutian languages, the others being Wintuan, Utiàn, and Yokutsan. Ethnographic groups speaking non-Maiduan Penutian languages within California include the Wintu, Nomlaki, and Patwin (Wintuan), the Costanoan and the Miwok (Utian), and the Yokuts (Yokutsan) (Shipley 1978:82-85).

The Nisenan specifically inhabited the area within the American, Bear, Yuba, and lower Feather River watersheds. The region is bordered by the Sierran Crest on the east and by the Sacramento River on the west. The northern boundary is ill-defined due to linguistic and cultural similarities between the Nisenan and their northern neighbors, the Konkow. The southern boundary is also vaguely defined, being situated somewhere between the American and Cosumnes Rivers (Kroeber 1925; Levy 1978; Riddell 1978; Wilson and Towne 1978).

As stated above, the Nisenan inhabited a village near Roseville (*Pichiku*) and another near Lincoln (*Bamuma*). It is unknown whether these were permanent settlements, although they are both referred to as being a "major village" (Wilson and Towne 1978, Figure 1). Nisenan villages varied a considerably in size, with a large village containing from 40 to 50 houses and over 500 people. A typical settlement within the lowland areas of the Nisenan territory would be situated upon natural rises along the major rivers and streams (Kroeber 1925:395; Powers 1877:316; Wilson and Towne 1978:388). Structures occurring within major villages would include brush shelters, sweat house(s), acorn granaries, a dance house, as well as the above mentioned houses (Kroeber 1925:407-409; Wilson and Towne 1978:388-389).

The principal subsistence activities of the Nisenan were hunting, fishing, and the gathering of wild plants. Subsistence practices relied upon a large variety of food sources, rather than being dependent on a limited number of staples. Typical of California groups, acorns from various species of oak were eaten, as were the nuts from bull and sugar pine, and buckeye. Other plants consumed included wild fruits and berries, various seeds, roots, and bulbs. Most animal species were eaten, those that were not included the various canines, grizzly bears, vultures, amphibians, and reptiles (Kroeber 1925:409-411; Wilson and Towne 1978:389-390).

The Nisenan were organized similarly to many California Indians in that a certain territory was identified as belonging to a group and that group recognized themselves as a unit (i.e., tribelet). Several affiliated villages may have occurred within the tribelet territory. Each village, and often a group of allied villages, had a headman, whose duty was to advise the members of the community. No larger levels of political organization occurred beyond these village affiliations (Kroeber 1925:396-398; Wilson and Towne 1978:393).

Warfare, though rare, did occur. Fighting could take place between Nisenan tribelets as well as with non-Nisenan peoples. Generally, conflict occurred following trespass or similar territorial violations. An example of inter-tribelet conflict involved Nisenan from the Roseville area in the 1820s. Evidently, men from the Auburn/Nevada City area were killed in the Roseville vicinity. The hatred and distrust between these peoples lasted for several years, as evidenced by the report that the Nisenan attributed the epidemic

of 1833 to bad air, sent to the valley by revengeful hill dwelling shamans (Wilson and Towne 1978:388 citing Payen 1961:23; Wilson 1957-1963).

The Nisenan were affected little by the Spanish and Mexican incursions into California's interior (Wilson and Towne 1978:396). They were, however, greatly impacted by the above mentioned epidemic, which ravaged parts of California during the 1830s. Believed to have been brought by fur trappers, this pestilence often killed the population of entire villages. It is estimated that 75 percent of the population died as a result of the epidemic, with many of the survivors retreating to mountain locations (Cook 1955).

The Nisenan who survived the epidemic were among the most highly impacted California groups by the Gold Rush of 1849. It was within Nisenan territory that John Marshall discovered gold at Coloma in 1848. Soon afterwards, hoards of fortune seekers descended upon Nisenan and adjoining territories. Within a short span of time, the lands of the Nisenan were overrun and the wholesale killing of Nisenan by whites began (Chartkoff and Chartkoff 1984:279-282; Powers 1877:317; Wilson and Towne 1978:396).

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 Paviotso near Walker Lake, Nevada in 1868. Unlike northwestern California, where the cults persisted well into the twentieth century, the Nisenan abandoned the movement in the 1890s (Du Bois 1939; Kroeber 1932).

4.3 HISTORY

A review of historic and historical materials revealed that the Roseville area witnessed a great amount of Euro-American use. Although it was not until after the discovery of gold at Sutter's Mill in 1848 that Euro-American people began entering the region en masse, the general area was visited by non-native peoples prior to that year. Gabriel Moraga, under the flag of Spain, led an expedition 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 band of hostile Miwok. Narciso Duran and Luis Arguello left San Francisco in 1817 and passed through the region on their expedition. Arguello is credited with naming the Feather River, his El Rio de Las Plumas (Beck and Haase 1974; McGowan 1961).

Following the Spanish entrance, this region of California was visited by American trappers looking for new areas to exploit. Beck and Haase (1974) indicate that Jedediah Smith, Joseph Walker, and Ewing Young passed through the region on their journeys through California.

Captain John Sutter was granted his roughly 1,000 square mile "New Helvetia" ranch near present day Sacramento in 1839. It was from Sutter's Mill, near present day Coloma, that John Marshall discovered gold in 1848. Soon afterwards the famous gold rush began and the region became quickly populated with prospectors, entrepreneurs, and others seeking easy fortunes (Bean 1977; Lavender 1972; McGowan 1961).

It was not until after these fortune seekers realized that riches were not so easy to come by that the Roseville vicinity became populated by non-native peoples. Many of the prospectors had been farmers prior to their exodus and many returned to agriculture as a means to survive. It was as an agricultural community that Roseville initially developed.

Railroad development became the next catalyst for growth in the Roseville area. The first railroad through southwestern Placer County was the California Central, started by Marysville businessman Charles Lincoln Wilson in 1857 (whom the community of Lincoln is named after). The goal of the proposed railway was to connect Marysville with Sacramento. Grading for the tracks was completed by

1860 and by the Fall of 1861 the tracks were in present day Roseville, and by the end of the year had reached Lincoln. Unfortunately for the residents of Marysville, the original plan was never realized. Besides dwindling funds, the Central California began having to compete with the Central Pacific Railroad when it reached the Roseville area from Sacramento in January of 1864 (Davis 1964).

On the thirteenth of August 1864, O.D. Lombard drew up the plans for a town centered around the junction of the Central Pacific and California Central Railroads. Not referred to as "Roseville" until the presidential election of 1864, the site was simply known as the "Junction." The new community witnessed slow, but steady, growth through the 1860s. By the close of the decade the California Central was part of the Central Pacific, which in turn merged with the Southern Pacific Railroad (Davis 1964).

Roseville grew into a city during the first decade of the 20th century. Its sudden growth was due to the Southern Pacific Railroad's decision to move its roundhouse, repair facilities, and switching yard from nearby Rocklin to Roseville. The construction of these railroad facilities in Roseville took two years, from 1906 to 1908. During this period, many railroad employees in Rocklin moved to Roseville, and the latter's population grew to over two thousand. The downtown business district swelled, and new subdivisions were laid out to accommodate the larger population (Davis 1964, 1993).

Growth stimulated a need for public services, such as fire protection, a sewer system, an electric power system, and a bridge across Dry Creek. In 1909 Roseville citizens voted to incorporate, giving them power to levee taxes on themselves, and to choose a Board of Trustees and a mayor. In 1910 a bond measure was passed to provide city services (Davis 1975, 1993).

Roseville continued to grow, from 2,600 in 1910 to nearly 4,500 in 1920. The Southern Pacific Railroad facilities, and the ability of the railroad to serve agriculture, continued to be the main reasons for this growth. Perhaps the largest employer in Roseville, other than the railroad, was the Pacific Fruit Express (PFE), a cold storage plant and ice manufacturer founded in 1909 and located next to the railroad tracks. Railroads loaded with California produce would pull alongside PFE facilities for supplies of ice before continuing east, across the Sierras and on to eastern markets. In 1913 PFE doubled its cold storage capacity, from 15,000 to 30,000 tons, making it, according to one source, the largest ice plant in the world. PFE expanded its Roseville plant again in 1924, and built another plant between Roseville and Antelope in 1926-1927. Southern Pacific kept pace with PFE, laying many miles of new track for PFE use. In 1926, Southern Pacific also commenced construction of a $1.5 million car shop. By the end of the 1920s the Southern Pacific shops and yards in Roseville employed 1225 men, and was perhaps the largest rail complex west of the Mississippi (Davis 1975, 1993).

The depression dampened construction activity during the 1930s, and during World War II construction all but ceased, with two exceptions. Roseville suffered a housing shortage during the war, and so a few housing developments were built for war workers. Due to large troop movements and the moving of war material through Roseville during the war, the Southern Pacific Railroad also expanded its rail yards at this time (Davis 1975, 1993).

Roseville remained primarily a railroad town through the 1940s, but major changes came in the 1950s. Automobiles and interstate trucks began to displace trains. New transportation projects were auto-oriented; these included the Seawall Underpass (which provided tunnel access underneath the Southern Pacific tracks, connecting the two sides of Roseville) and the improvement of Highway 40 (now Interstate 80) to freeway status. In 1955, Folsom Dam was enlarged as part of the state's Central Valley Project. At PFE, refrigerator cars replaced icing machines in the 1960s (Davis 1975, 1993).

As rail jobs declined, jobs were created in other areas of commerce and industry. These included the construction of retail shopping centers and corporate headquarters along Douglas Boulevard and Harding

Boulevard, east of the old center of town; and industry along Highway 65, north of the old city. In general, there has been a major shift in population and construction to outlying areas, especially to the east. The railroad is still an important part of Roseville's economy, but it is far from the dominant factor that it was from 1906 through the 1940s (Davis 1975, 1993).

It was in the mid-1970s that the major re-contouring of the landform to accommodate rice cultivation was initiated. The majority of the structures and other development on the property were constructed at this time (Kostura 2001).

5.0 METHODS

5.1 PREFIELD RESEARCH

Prefield research consisted of a review of ethnographic and historic literature and maps, archaeological base maps and site records, survey reports, and atlases of historic places on file at the North Central Information Center of the California Archaeological Inventory at California State University Sacramento (NCIC).

The review indicated that no portion of the Reason Farms Project area has been previously inventoried for cultural resources. Although no archaeological inventories of the property are on file at the NCIC, the record search indicated that a single archaeological site, CA-Pla-136, had been previously recorded within the boundaries of the farm (Appendix A).

Unfortunately, the site record for CA-Pla-136 on file at the NCIC is difficult to read due to the poor quality of the reproduction (the whereabouts of the original is unknown). It appears that the site was identified in April of 1960 and at the time of recordation contained a milling slab (i.e., metate) and possibly two handstones (i.e., manos). Unfortunately, a detailed site map is not included with the record. Based upon a brief description and nearly illegible site location map that was not drawn to scale, the NCIC plots the site on their base maps approximately ⅛-mile south of Pleasant Grove Creek, ¼-mile east of Pettigrew Road (Figure 2).

As indicated above, the record search also included a review of historic maps. The 1855 General Land Office surveyor's plat map of 1855 revealed that the Sacramento and Nevada Road bisected the north western "finger" of the project area from north to south (USDI BLM 1855). A second, unnamed road is depicted on this early map paralleling the southern bank of Pleasant Grove Creek (labeled on the 1855 map as Dry Creek). It appears that this unnamed road may have crossed Pleasant Grove Creek at the same location as the Sacramento and Nevada Road (Figure 3).

Subsequent research including requests of information from the Carnegie Museum of Roseville/Roseville Historical Society, the Placer County Museum, Nevada County Historical Society, and the Community Memorial Museum of Sutter County failed to obtain additional information concerning these historic roadways. Likewise, no information was obtained on these roads during conversations with the former coordinator of the NCIC Marianne Russo (personnel communication 2002) and CSUC Anthropology Professor Dr. Gerald Johnson (personnel communication 2002).

To further assist in securing information regarding potential cultural resources located in or near the project area, requests for information were submitted to the Native American Heritage Commission (NAHC) (Appendix B).

The NAHC provided a list of contacts, all of whom were notified (Appendix B). A single response was received from John O. Suehead, Tribal Historic Preservation Committee Chairperson of the United

Auburn Indian Community of the Auburn Rancheria (Appendix B). According to Mr. Suehead's correspondence, the files of the United Auburn Indian Community of the Auburn Rancheria contained no specific information on the current project area.

5.2 FIELD RECONNAISSANCE

The current project area was subjected to an archaeological pedestrian reconnaissance following the guidelines proposed by King (1978). Specifically, the Reason Farms Project Area was visually inspected utilizing an intuitive or mixed-strategy approach. This involved utilizing 10 to 20 meter parallel transects within areas of increased archaeological sensitivity, which included the vicinity of the previously recorded archaeological resource (CA-Pla-136), along the drainage corridors, around what appeared to be vernal pools, and within the vicinities through which the historic roads once passed. Within the less archaeologically sensitive terraced rice fields, the ground surface was visually inspected utilizing 20 to 30 meter parallel transects. In areas where non-agricultural vegetation obscured the ground surface, 20 cm × 20 cm patches were occasionally cleared utilizing hand tools or footwear to increase ground visibility.

In general, ground visibility within the project area was quite good. At the time of the reconnaissance the rice fields had been harvested thus providing a relatively clear view of the ground surface. As discussed previously, however, the stream corridors are heavily wooded. As such, surface visibility within these areas was limited. It should also be noted that during the month of December 2001 northern California received record amounts of rainfall. Although much of the ground surface within the project area could be observed, the amount of mud within the freshly harvested fields was remarkable; this also limited ground surface visibility.

Mr. Mark Hale (URS Project Archaeologist) conducted the pedestrian reconnaissance of the project's APE. Mr. Hale holds a B.A. in Anthropology from the University of California, Berkeley, and has completed his course work and defended his thesis for a M.A. in cultural resources management from Sonoma State University. He has more than 18 years of professional experience in conducting and managing cultural resource investigations in California and elsewhere in western North America and Pacific Islands. Mr. Hale was assisted in the field by Kelley Esh, Brian Flynn, Kelly McClain, James Mangold, Israel Rivero, and Margaret Trumbly. Oversight for the project was provided by Ms. Elena Nilsson (URS Senior Archaeologist). Ms. Nilsson received her B.A. in English and her M.A. in Anthropology from California State University, Los Angeles.

6.0 RESULTS

As a means to determine the potential effects of the proposed project to archaeological resources, a number of tasks including archival research, Native American consultation, and a field reconnaissance were completed. No archaeological resources were identified within the project APE during the course of the field efforts.

The record search revealed that a single archaeological site, CA-Pla-136, had been previously identified within the project area. No evidence of the site was observed within the vicinity of its purported location (Figure 2). Given that the site was discovered prior to the terracing of the fields for rice cultivation it is possible that the site was either buried or removed during the associated earth moving activities. It is also possible, however, that the site has been plotted by the NCIC in the wrong location. As mentioned above the record does not contain a detailed site map and the site location map is difficult to read (Appendix A). It is therefore within the realm of possibilities that the site lies closer to the stream course and was obscured from view by the dense riparian growth along Pleasant Grove Creek.

It should also be mentioned that the extensive terracing that occurred within Reason Farms may have also eradicated any remnants of the historic roads that once crossed through the area as no evidence of these potential resources was observed (Figure 3).

7.0 RECOMMENDATIONS

Although no archaeological resources were identified on the surface of the project's APE, it is possible that with project implementation buried archaeological deposits including materials associated with CA-Pla-136 may be exposed during construction activities. Unless properly evaluated and managed, this could result in a potentially significant impact to cultural resources.

Given the increased archaeological sensitivity of the perennial stream course which flows through the project area, in particular the general vicinity where archaeological site CA-Pla-136 is purportedly located (Figure 2), it is recommended that all ground disturbing activities be subjected to archaeological monitoring. Specifically, a qualified professional archaeologist should be retained to observe all project related ground disturbing activities within 25 meters of the banks of Pleasant Grove Creek. Archaeological monitoring is not recommended for other areas within the project area including the courses of the minor tributaries of Pleasant Grove Creek given the high degree of ground disturbance associated with rice cultivation (i.e., terracing, stream channelization).

If archaeological materials are observed by the monitoring archaeologist, he/she would have the authority to halt all ground-disturbing activities within the vicinity of the exposed materials until the nature and significance of the find could be evaluated and mitigation measures, if needed, implemented. The development of mitigation measures would be conducted in consultation with the SHPO, and, if the site is of aboriginal association, the NAHC and local Native American community.

Although it is unlikely that intact archaeological deposits exist outside of the relatively undisturbed course of Pleasant Grove Creek, it is still possible that previously unidentified archaeological materials could be inadvertently exposed during ground disturbing activities. In the event of the discovery of buried archaeological artifacts, exotic rock (non-native), or unusual amounts of shell or bone it is recommended that project activities in the vicinity of the find be immediately stopped and a qualified professional archaeologist consulted to assess the resource and provide proper management recommendations. If the discovery includes human remains then the Placer County Coroner and Native American Heritage Commission must also be contacted.

8.0 BIBLIOGRAPHY

Beals, Ralph L.
1933 Ethnology of the Nisenan. University of California Publications in American Archaeology and Ethnology. 31(6): 335-414. Berkeley.

Bean, Walter
1977 *California: An Interpretive History*. McGraw-Hill, New York.

Beck, W.A., and Y.D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.

Chartkoff, J.L., and K.K. Chartkoff
1984 *The Archaeology of California*. Stanford University Press, Stanford.

Cook, Sherburne F.
1955 The Epidemic of 1830-1833 in California and Oregon. University of California Publications in American Archaeology and Ethnology. 43(3): 303-326. Berkeley.

Davis, Leonard M.
1964 *From Rail to Trail! Being a History of the City of Roseville, California 1864-1909*. Roseville Community Projects.

1975 *Roseville, Yesterday and Today*. Roseville Community Projects.

1993 A Brief History of Roseville. Roseville Historical Society Newsletter (Viewed via the City of Roseville/Roseville Public Library website, http://www.roseville.ca.us/library/history/history.htm.)

Du Bois, Cora A.
1939 The 1870 Ghost Dance. University of California Anthropological Records. 3(1):1-151. Berkeley.

Faye, Paul-Louis
1923 Notes of the Southern Maidu. University of California Publications in American Archaeology and Ethnology. 20(3): 35-53. Berkeley.

Fredrickson, David A.
1973 Early Cultures of the North Coast Ranges, California. PhD. Dissertation, University of California, Davis; Department of Anthropology.

Gifford, Edward W.
1927 Southern Maidu Religious Ceremonies. American Anthropologist. 29(3):214-257.

Johnson, Gerald
2002 Personal communication with Mark Hale, URS Corporation, San Francisco.

King, Thomas F.
1978 *The Archaeological Survey: Methods and Uses*. USDI, Heritage Conservation and Recreation Service, Washington D.C.

Kostura, William
2001 The Reason Farms Retention Basin, Roseville, California. California Register Evaluation. URS Corporation. Report submitted to the City of Roseville, California.

Kroeber, Alfred L.
1925 Handbook of the Indians
California. Bureau of American Ethnology Bulletin 78. Washington, D.C. [Reprinted, Dover Publications, New York, 1976.]

1929 The Valley Nisenan. University of California Publications in American Archaeology and Ethnology. 24(4): 263-290. Berkeley.

1932 The Patwin and Their Neighbors. University of California Publications in American Archaeology and Ethnology. 29(4):253-423. Berkeley.

Lavender, David
1972 *California: Land of New Beginnings*. Harper and Row, New York.

Levy, Richard
1978 Eastern Miwok. In California, edited by Robert F. Heizer, pp. 398-413. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Lillard, J.B., R.F. Heizer, and F. Fenenga
1939 An Introduction to the Archaeology of Central California. Sacramento Junior College, Department of Anthropology Bulletin 2. Sacramento.

Lillard, J.B., and W.K. Purves
1936 The Archaeology of the Deer Creek-Cosumnes Area, Sacramento County, California. Sacramento Junior College, Department of Anthropology Bulletin 1. Sacramento.

Lindstrom, Susan
1989 A Cultural Resources Evaluation of the Sphere of the City of Lincoln, Placer County to include the Ferrari Ranch/Southeast Lincoln Project and the Lincoln Crossing Project. With Contributions by John Wells, Consulting Mining Engineer. Prepared for EIP Associates. Sacramento.

Littlejohn, Hugh W.
1928 Nisenan Geography. Manuscript in Bancroft Library, University of California, Berkeley.

McGowan, Joseph A.
1961 *History of the Sacramento Valley*. Levi's Historical Publishing Company, New York.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, New York.

Palumbo, Patti Jo
1966 Dry Creek: An Archaeological Survey and Site Report. Unpublished Masters Thesis, Department Of Anthropology, California State University, Sacramento.

Payen, Louis A.
1961 Excavations at Sutter's Fort. Manuscript No. 87, California State Division of Beaches and Parks, Sacramento.

Powers, Stephen
1877 Tribes of California. Contributions to North American Ethnology Volume III. U.S. Department of the Interior, Geographical and Geological Survey of the Rocky Mountain Region, Washington, D.C. [Reprinted by University of California Press, Berkeley 1976].

Riddell, Francis A.
1978 Maidu and Konkow. In California, edited by Robert F. Heizer, pp. 370-386. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Ritter, E.W., and P. Schulz, eds.
1972 Papers on Nisenan Environment and Subsistence. University of California Center for Archaeological Research Publications 3. Davis, California.

Russo, Marianne
2002 Personal communication with Mark Hale, URS Corporation, San Francisco.

Schenk, W.E., and E.J. Dawson
1929 Archaeology of the Northern San Joaquin Valley. University of California Publications in American Archaeology and Ethnology. 25(4): 289-413. Berkeley.

Shipley, William F.
1978 Native Languages of California. In California, edited by Robert F. Heizer, pp. 80-90. *Handbook of North American Indians, Vol. 8,* William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Uldall, H.J., and W. F. Shipley
1966 Nisenan Texts and Dictionary. University of California Publications in Linguistics, 46. Berkeley.

United States Department of the Interior (USDI), Bureau of Land Management (BLM)
1855 General Land Office Surveyor's Plat Map of T11N, R5E, Mount Diablo Meridian. On file, USDI, BLM, Cadastral Survey Division, Sacramento District Office, California.

Wilson, Norman L.
1957-1963 [Nisenan field notes] (Manuscript in Wilson's possession.)

Wilson, N.L. and A.H. Towne
1978 Nisenan. In California, edited by Robert F. Heizer, pp. 387-397, *Handbook of North American Indians, Vol. 8,* William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Source: USGS 7.5 Topographic Maps, Pleasant Grove, California, 1967, photorevised 1981 and Roseville, California, 1967, photorevised 1981

N

0 2000 4000

Approximate Scale in Feet

1/28/02 vsa \43-00067030.00\F1_Proj Loc.cdr

PROJECT LOCATION

Reason Farms Retention Basin
Roseville, California

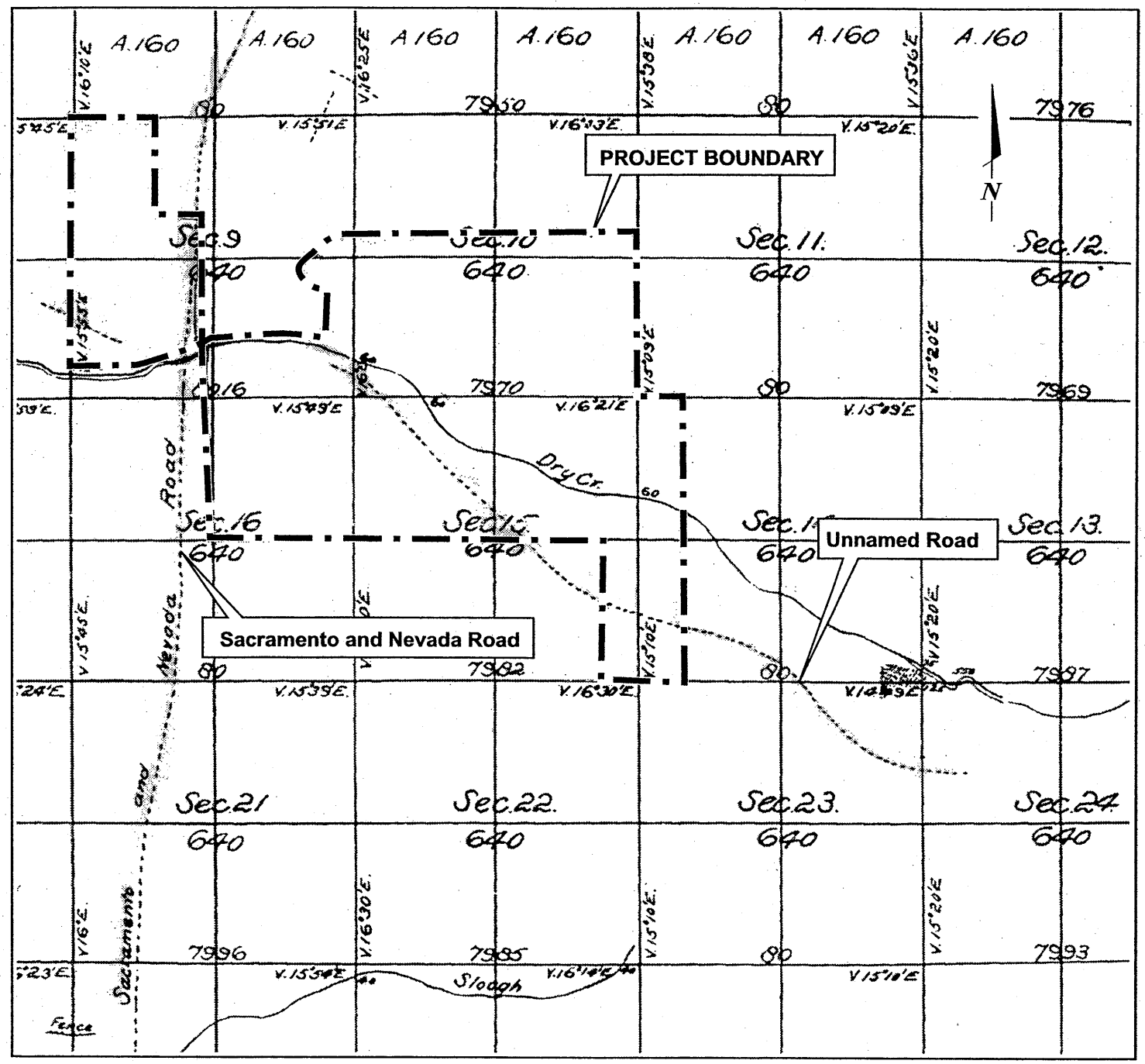
January 2002
43-00067030.00

URS

FIGURE 1

FIGURE 2: ARCHAEOLOGICAL SITE LOCATION

This figure is confidential, and has not been included
in this copy of the Archaeological Reconnaissance Report



Source:
U.S.D.I. BLM General Land Office Surveyer's Plat Map
for TIIN/R5E, Mount Diablo Meridian, 1855.

1855 GLO PLAT MAP

Reason Farms Retention Basin
Roseville, California

January 2002
43-00067030.00

URS

FIGURE 3

1/31/02 vsa \43-00067030.00\1855_GLOplat.cdr

APPENDIX A

SITE RECORD OF CA-PLA-136

This appendix is confidential, and has not been included
in this copy of the Archaeological Reconnaissance Report.

APPENDIX B

NATIVE AMERICAN CONSULTATION

URS

Debbie Pilas-Treadway
Associate Program Analyst
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

28 November 2001

Dear Ms. Pilas-Treadway

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

Among the tasks to be completed for the EIR is an archaeological pedestrian reconnaissance. URS is to identify and record all cultural resources within the project's Area of Potential Effects (APE) and, if needed, provide recommendations for their proper management. As part of the prefield research, I am requesting any information the Commission may have regarding properties, features, or materials within the APE that may be of concern to local Native Americans. Enclosed is a map delineating the area to be investigated by the survey. Any comments you may have regarding this area would be greatly appreciated.

If you have any questions, please feel free to call me directly at (415)-243-3826. Thank you for your cooperation.

Sincerely,

URS

Mark R. Hale
Project Archaeologist

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1917
Tel: 415.896.5858
Fax: 415.882.9261

Source: USGS 7.5 Topographic Maps, Pleasant Grove, California, 1967, photorevised 1981 and Roseville, California, 1967, photorevised 1981

N

0 2000 4000

Approximate Scale in Feet

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12/14/01 vsa \43-00067030.00\svm.cdr

SITE VICINITY MAP

Conceptual Design and EIR
Reason Farms Retention Basin
Roseville, California

November 2001
98-00010043.13

URS

FIGURE no.

STATE OF CALIFORNIA — Gray Davis, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

November 30, 2001

Mark R. Hale
URS
221 Main Street, Suite 600
San Francisco, CA 94105-1917

RE: Proposed Reason Farms Retention Basin project, Placer County.

Sent by Fax: (415) 882-9261
Pages Sent: 2

Dear Mr. Hale:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received

If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

NATIVE AMERICAN CONTACTS
Placer County
November 29, 2001

Hickey J. Murray
4745 Koto Road — Maidu
Placerville, 95667-9
CA

United Auburn Indian Community of the Auburn
Jessica Tavares, Chairperson
661 Newcastle Road, Suite 1 — Maidu
Newcastle, CA 95658 — Miwok
916 663-3720
916 663-3727 - Fax

Rose Enos
15310 Bancroft Road — Maidu
Auburn, 95603 — Washoe
CA
(530) 878-2378

United Auburn Indian Community of the Auburn
Sam Starkey
953 Indian Rancheria Road — Maidu
Auburn, CA 95603 — Miwok
(530) 878-2378 - work
(530) 885-2533 - home

Shingle Springs Band of Miwok Indians
Jeff Murray, Cultural Resources Manager
P.O. Box 1340 — Miwok
Shingle, CA 95682 — Maidu
(530) 676-8010
(530) 676-8033 Fax

Todd Valley Miwok-Maidu Cultural Foundation
Christopher Suehead, Cultural Representative
PO Box 1490 — Miwok
Foresthill, CA 95631 — Maidu
(530) 367-3893 - Voice / Fax
tvmmcf@foothill.net

United Auburn Indian Community of the Auburn
David Keyser
961 Indian Rancheria Road — Maidu
Auburn, CA 95603 — Miwok
(530) 885-8229 - Home
(916) 663-3720 - Work

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed Reason Farms Retention Basin project, Placer County.

URS

December 21, 2001

Hickey J. Murray
4745 Koto Raod
Placerville, CA 95667

Dear Hickey J. Murray:

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

Among the tasks to be completed for the EIR is an archaeological pedestrian reconnaissance. URS is to identify and record all cultural resources within the project's Area of Potential Effects (APE) and, if needed, provide recommendations for their proper management. As part of the prefield research, I am requesting any information you may have regarding properties, features, or materials within the APE that may be of concern to local Native Americans. Enclosed is a map delineating the area to be investigated by the survey. Any comments you may have regarding this area would be greatly appreciated.

If you have any questions, please feel free to call me directly at (415)-243-3826. Thank you for your cooperation.

Sincerely,

URS Corporation

for Mark R. Hale
Project Archaeologist

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

URS

December 21, 2001

Rose Enos
15310 Bancroft Road
Auburn, Ca 95603

Dear Rose Enos:

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

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Sincerely,

URS Corporation

for Mark R. Hale
Project Archaeologist

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

URS

December 21, 2001

David Keyser
United Auburn Indian Community of the Auburn Rancheria
961 Indian Rancheria Road
Auburn, CA 95603

Dear David Keyser:

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

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If you have any questions, please feel free to call me directly at (415)-243-3826. Thank you for your cooperation.

Sincerely,

URS Corporation

C Short

for Mark R. Hale
Project Archaeologist

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

URS

December 21, 2001

Jessica Tavares
Chairperson
United Auburn Indian Community of the Auburn Rancheria
661 Newcastle Road, Suite 1
Newcastle, Ca 95658

Dear Jessica Tavares :

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

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If you have any questions, please feel free to call me directly at (415)-243-3826. Thank you for your cooperation.

Sincerely,

URS Corporation

C Short

jo Mark R. Hale
Project Archaeologist

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

URS

December 21, 2001

Sam Starkey
United Auburn Indian Community of the Auburn Rancheria
953 Indian Rancheria Road
Auburn, CA 95603

Dear Sam Starkey:

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Sincerely,

URS Corporation

for C. Shert

Mark R. Hale
Project Archaeologist

Enclosure

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221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

URS

December 21, 2001

Jeff Murray
Cultural Resources Manager
Shingle Springs Band of the Miwok Indians
P.O. Box 1340
Shingle Springs, Ca 95682

Dear Jeff Murray :

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

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If you have any questions, please feel free to call me directly at (415)-243-3826. Thank you for your cooperation.

Sincerely,

URS Corporation

for Mark R. Hale
Project Archaeologist

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

URS

December 21, 2001

Christopher Suehead
Cultural Representative
Todd Valley Miwok-Maidu Cultural Foundation
P.O. Box 1490
Foresthill, CA 95631

Dear Christopher Suehead:

The City of Roseville has retained URS to complete an Environmental Impact Report (EIR) for the Reason Farms Retention Basin Project pursuant to the California Environmental Quality Act (CEQA). The City is interested in the development of a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville or within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County). The project would be undertaken by the City on parcels totaling approximately 1,340 acres, collectively known as "Reason Farms" in Placer County east of the Roseville City Limits

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Sincerely,

URS Corporation

for

Mark R. Hale
Project Archaeologist

Enclosure

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San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

MIWOK
MAIDU

United Auburn Indian Community
of the Auburn Rancheria

JESSICA TAVARES
CHAIRPERSON

DAVID KEYSER
VICE CHAIR

CHRISTINE BEALL
SECRETARY

DOLLY SUEHEAD
TREASURER

MONA CAMP
COUNCIL MEMBER

RECEIVED

January 11, 2002

Mark Hale
URS
1101 North Argonne Road, Suite 201
Spokane, WA 99212-2699

Re: Reason Farms Retention Basin Project

Dear Mr. Hale:

The Tribal Historic Preservation Committee has no specific information regarding sacred sites in the above mentioned project area. Please contact us should any discoveries be made and continue to keep us informed of future projects.

Thank you.

Sincerely,

John O. Suehead

John O. Suehead, Committee Chairperson
Tribal Historic Preservation Committee

APPENDIX C3

ARCHAEOLOGICAL RECONNAISSANCE OF A 170-ACRE ADDITION TO THE CITY OF ROSEVILLE RETENTION BASIN PROJECT AREA

URS

ARCHAEOLOGICAL RECONNAISSANCE OF A 170-ACRE ADDITION TO THE CITY OF ROSEVILLE RETENTION BASIN PROJECT AREA, FOR THE CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

ADDENDUM TO: ARCHAEOLOGICAL RECONNAISSANCE OF THE 1,329-ACRE REASON FARMS, ROSEVILLE, PLACER COUNTY, CALIFORNIA

Job No. 43-00000000.00
June 2002

ARCHAEOLOGICAL RECONNAISSANCE OF A 170-ACRE ADDITION TO THE CITY OF ROSEVILLE RETENTION BASIN PROJECT AREA, FOR THE CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

ADDENDUM TO:
ARCHAEOLOGICAL RECONNAISSANCE OF THE 1,329-ACRE REASON FARMS, FOR THE CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

Mark R. Hale
Project Archaeologist

June 2002

URS Corporation
221 Main Street
Suite 600
San Francisco, California 94105

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	2.1 PREFIELD RESEARCH	1
	2.2 FIELD RECONNAISSANCE	2
3.0	RESULTS	3
4.0	RECOMMENDATIONS	3
5.0	BIBLIOGRAPHY	4

FIGURES

Figure 1 Project Location
Figure 2 1855 GLO Plat Map

1.0 INTRODUCTION

During the month of April 2002, URS Corporation conducted an archaeological pedestrian reconnaissance of a 170-acre parcel in Placer County, California. The parcel, herein referred to as the April 2002 Addition to the City of Roseville Retention Basin Project Area (Addition), is located in the southwestern portion of the County approximately 2.4 miles west of the Roseville city limits. The site is nearly rectangular. The northernmost portion of the site abuts Pleasant Grove Creek, and the southernmost boundary of the site lies along Phillip Road (Figure 1).

The City of Roseville is interested in developing the project area into a retention basin to alleviate potential downstream flooding that could be caused by entitled projects and future projects within the City of Roseville (City), within the area covered by the Memorandum of Understanding (MOU) between the City and the County of Placer (County), and within certain other areas of the County. The City engaged URS Corporation (URS), in association with Phillip Williams & Associates (PWA), to assist in this undertaking.

The original 1,329-acre project area (i.e., Reason Farms) was subjected to an archaeological pedestrian reconnaissance in late 2001 in advance of project design (Hale 2002). During preliminary project development, however, it was determined that additional acreage would be necessary to capture the total required retention capacity. The addition — a 170-acre portion of a parcel situated adjacent to the southwestern corner of Reason Farms — therefore was added to the previously delineated project area (Figure 1).

This addendum documents the archaeological reconnaissance conducted on the 170-acre parcel added to increase the volume of the proposed retention basin. For contextual data and other information, the reader is referred to the archaeological inventory report prepared for the original 1,329-acre project area (Hale 2002).

2.0 METHODS

2.1 PREFIELD RESEARCH

Prefield research consisted of a review of ethnographic and historic literature and maps, archaeological base maps and site records, survey reports, and atlases of historic places on file at the North Central Information Center of the California Archaeological Inventory at California State University Sacramento (NCIC).

The review indicated that no archaeological resources have been recorded within the Addition. Likewise, no portion of the Addition had been inventoried for cultural resources prior to the current investigation.

As indicated above, the record search also included a review of historic maps. The 1855 General Land Office surveyor's plat map of 1855 revealed that the Sacramento and Nevada Road bisected the Addition area from north to south (USDI BLM 1855) (Figure 2). Previous requests for information from the Carnegie Museum of Roseville/Roseville Historical Society, the Placer County Museum, Nevada County Historical Society, and the Community Memorial Museum of Sutter County failed to obtain additional information concerning this historic roadway. Likewise, no information was obtained on this road during conversations with the former coordinator of the NCIC, Marianne Russo (2002) and California State University at Chico (CSUC) Anthropology Professor Dr. Gerald Johnson (2002).

2.2 FIELD RECONNAISSANCE

The Addition was subjected to an archaeological pedestrian reconnaissance following the guidelines proposed by King (1978). Specifically, the Addition was visually inspected utilizing an intuitive or mixed-strategy approach. This involved utilizing 10- to 20-meter parallel transects within areas of increased archaeological sensitivity, which included the southern bank of Pleasant Grove Creek and within the vicinity through which the historic road once passed. Within the remainder of the project area, the ground surface was visually inspected utilizing 20- to 30-meter parallel transects. As a means to better view the ground surface, 20-cm by 20-cm patches were occasionally cleared using hand tools or footwear.

In general, ground visibility within the project area was poor. Similar to the Reason Farms property, the Addition has been utilized for the cultivation of crops. At the time of the reconnaissance (April) the fallow fields of the Addition exhibited a dense growth of non-native grasses. Furthermore, the southern bank of Pleasant Grove Creek (the northern edge of the study area) was heavily wooded and also contained dense understory of poison oak, various shrubs, and introduced grasses. As such, surface visibility within most of the Addition was limited. The exception was the southwestern corner of the parcel that had been plowed prior to the field investigation.

Mr. Mark Hale (URS Project Archaeologist) conducted the pedestrian reconnaissance of the addition's Area of Potential Effect (APE). Mr. Hale holds a B.A. in Anthropology from the University of California, Berkeley, and has completed his course work and defended his thesis for an M.A. in cultural resources management from Sonoma State University. He has over 18 years of professional experience in conducting and managing cultural resource investigations in

California and elsewhere in western North America and Pacific Islands. Ms. Elena Nilsson (URS Senior Archaeologist) provided oversight for the project. Ms. Nilsson received her B.A. in English and her M.A. in Anthropology from California State University, Los Angeles.

3.0 RESULTS

As a means to determine the potential effects of the proposed project on archaeological resources, archival research and a field reconnaissance were completed. No archaeological resources were identified within the Addition during the course of the field efforts.

The record search revealed that a historic transportation route, the Sacramento and Nevada Road, once crossed through the combined project area (Figure 2). No evidence of this potential resource was observed. Given the extent of prior cultivation in the combined project area, it should not be a surprise that no physical evidence of the roadway remains.

4.0 RECOMMENDATIONS

Although no archaeological resources were identified on the surface of the Addition, it is possible that during construction buried archaeological deposits may be exposed by ground-disturbing activities. Unless properly evaluated and managed, this could result in a potentially significant impact to cultural resources.

Given the increased archaeological sensitivity of the stream course that borders the northern edge of the Addition, it is recommended that a portion of the Addition be subjected to archaeological monitoring. Specifically, a qualified professional archaeologist should be retained to observe all project-related ground-disturbing activities within 82 feet of the banks of Pleasant Grove Creek. Archaeological monitoring is not recommended for other areas within the addition.

If archaeological materials are observed by the monitoring archaeologist, he or she would have the authority to halt all ground-disturbing activities within the vicinity of the exposed materials until the nature and significance of the find could be evaluated and mitigation measures, if needed, implemented. The development of mitigation measures would be conducted in consultation with the State Historic Preservation Officer, and, if the site is of aboriginal association, the NAHC and local Native American community.

Although it is unlikely that intact archaeological deposits exist outside of the relatively undisturbed course of Pleasant Grove Creek, it is still possible that previously unidentified archaeological materials could be inadvertently exposed during ground-disturbing activities. In the event of the discovery of buried archaeological artifacts, exotic (non-native) rock, or unusual

amounts of shell or bone, it is recommended that project activities in the vicinity of the find be immediately stopped and a qualified professional archaeologist consulted to assess the resource and provide proper management recommendations. If the discovery includes human remains, the Placer County Coroner and Native American Heritage Commission must also be contacted.

5.0 BIBLIOGRAPHY

Hale, Mark R.

2002 Archaeological Reconnaissance of the 1,329-Acre Reason Farms, for the City of Roseville, Placer County, California. URS Corporation. Report submitted to the City of Roseville, California. March.

Johnson, Gerald, Anthropology Professor, California State University at Chico.

2002 Personal communication with Mark Hale, URS Corporation, San Francisco.

King, Thomas F.

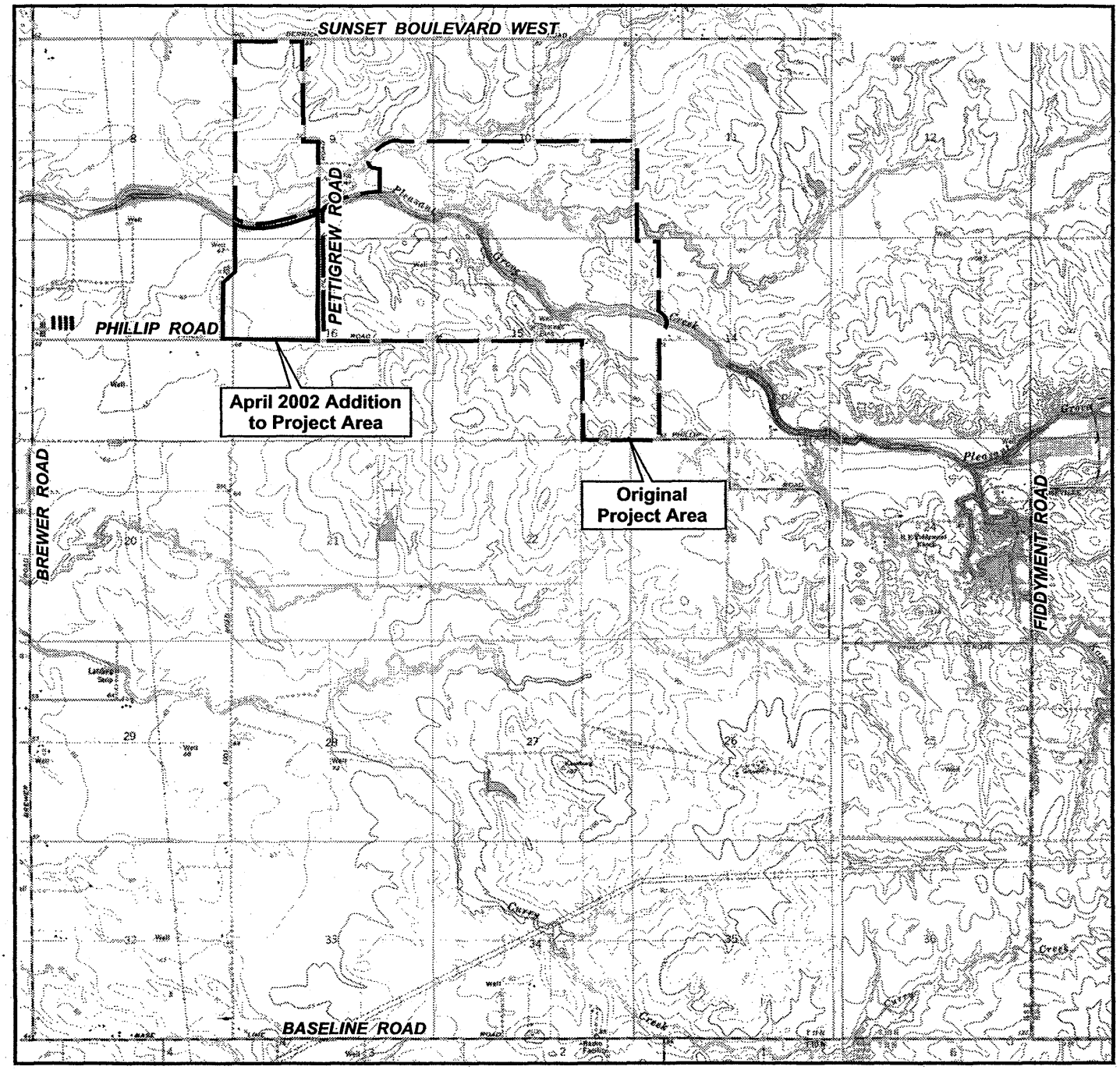
1978 *The Archaeological Survey: Methods and Uses.* U.S. Department of the Interior, Heritage Conservation and Recreation Service, Washington D.C.

Russo, Marianne, former Director, North Central Information Center of the California Archaeological Inventory of California State University Sacramento.

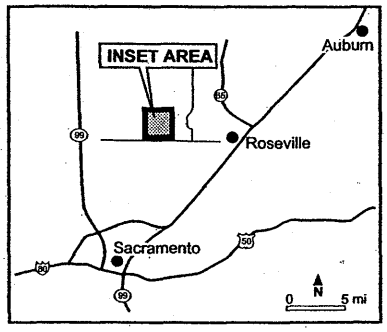
2002 Personal communication with Mark Hale, URS Corporation, San Francisco.

United States Department of the Interior (USDI), Bureau of Land Management (BLM)

1855 General Land Office Surveyor's Plat Map of T11N, R5E, Mount Diablo Meridian. On file, USDI, BLM, Cadastral Survey Division, Sacramento District Office, California.



Source: USGS 7.5 Series Topographic Maps,
Pleasant Grove, California, 1967, photorevised 1981 and
Roseville, California, 1967, photorevised 1981



N

2000 0 4000

Approximate Scale in Feet

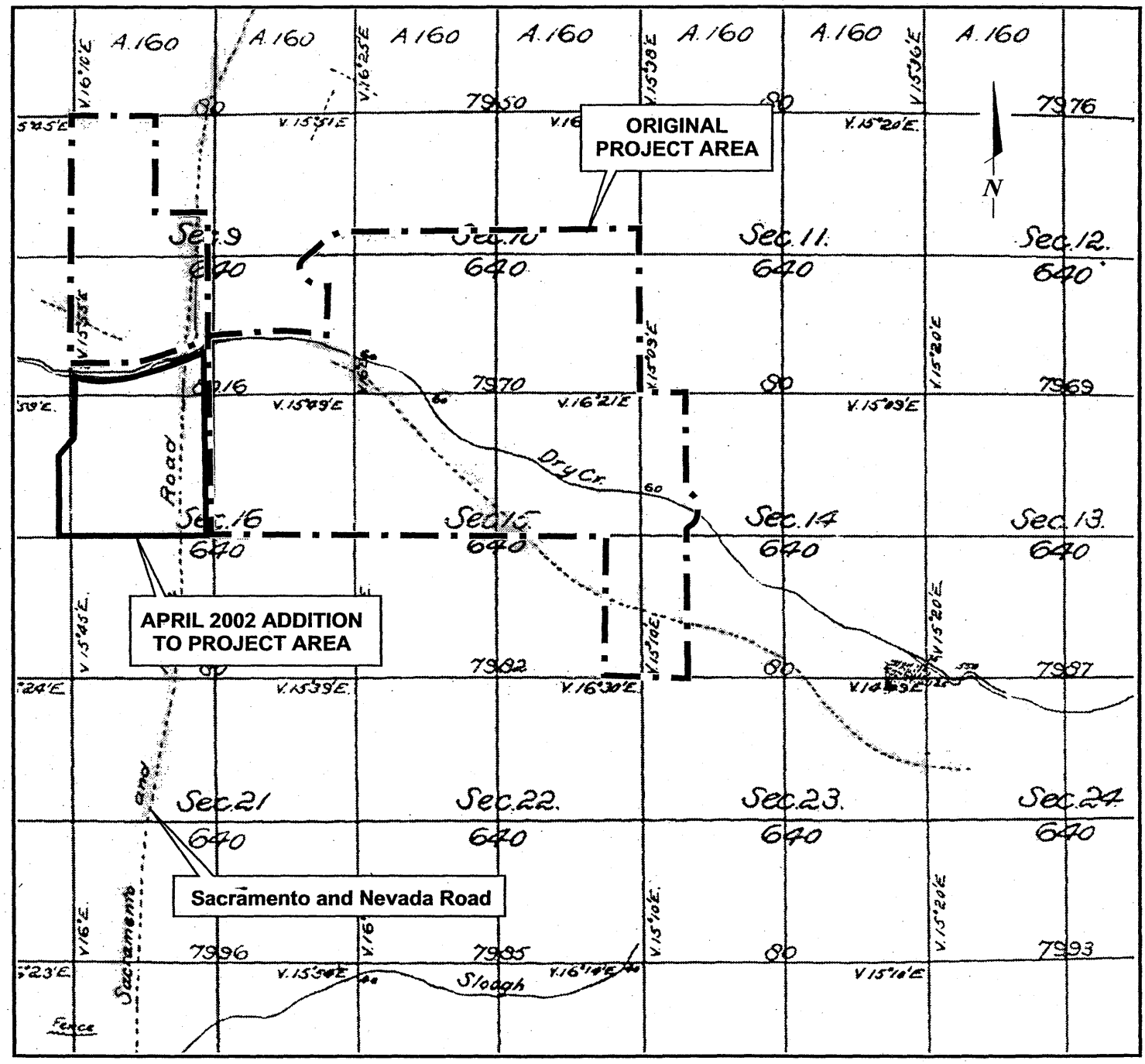
Figure 1
PROJECT LOCATION

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

URS

6/11/02 vsa ..\43-00067030.00\F1_ProjLocation_archeo.cdr



Source: U.S.D.I. BLM General Land Office Surveyer's Plat Map for T11N/R5E, Mount Diablo Meridian, 1855.

Figure 2
1855 GLO PLAT MAP

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 June 2002

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6/10/02 vsa \43-00067030.00\F2_1855 GLOplat_archeo.cdr

APPENDIX C4

PALEONTOLOGY RESOURCES TECHNICAL REPORT

PALEONTOLOGICAL RESOURCES TECHNICAL REPORT

INCLUDING

SCIENTIFIC LITERATURE REVIEW
SITE RECORDS/SPECIMEN SURVEY

CITY OF ROSEVILLE RETENTION BASIN PROJECT
ROSEVILLE, CALIFORNIA

Under Contract To:

URS CORPORATION, INC.

221 Main St., Suite 600

San Francisco, CA 94105-1917

Prepared By:

DAVID LAWLER, PALEONTOLOGIST

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Berkeley, California 94707

MAY 2002

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CITY OF ROSEVILLE RETENTION BASIN PROJECT

PALEONTOLOGICAL RESOURCE – ASSESSMENT SUMMARY

A Paleontological Sensitivity analysis of the City of Roseville Retention Basin Project (CRRB) has been performed using available published scientific literature and unpublished archival records and data. This has included areas of potential disturbance within the project footprint. Paleontological Assessment Ratings (Low, Medium, and High) have been assigned to the project based on identified resources within undifferentiated Quaternary units of Pleistocene geologic age. Fossil vertebrate resources are considered rare in respect to the identified geological formations and geologic periods.

From a regional perspective, occurrences of paleontological resources may likely be discovered in the Quaternary age Turlock Lake Formation (*Qtl),* Riverbank Formation (*Qr*) and Quaternary Alluvium (*Qal)* sedimentary units within the project area.

Background research and prior paleontological project reports provided the scientific data for determining the potential locations of paleontological resources within the project area.

INTRODUCTION

Mr. David Lawler, professional paleontologist, has undertaken a Paleontological Resources Sensitivity Analysis of the CRRB project area that is based on (1) museum repository data and paleontological collection material, and (2) a published and unpublished scientific literature survey to provide relevant environmental overview data.

The compiled data have been vital in assessing paleontological resource sensitivity issues in relation to proposed project construction activities. The assessment is based both on known paleontological sites within the project area, as well as extrapolated biostratigraphic information derived from rock units in adjacent areas or areas of regional context. Data sources vary from informant, archival and published and unpublished technical reports, to technical information housed in designated museum repositories.

METHODS

A standard "Class I" technical literature and records review was conducted to assess the paleontological resource potential at the CRRB project site. Some relevant data from outside of the project footprint area have been included in this report for contextual purposes.

Geologic units (mappable rock formations) occurring within the project area and their respective interpreted paleontological sensitivity are shown on Map 1. Since paleontological data are considered sensitive, this map graphic should be considered confidential and map distribution should be limited.

Published geologic maps served as the primary geologic data for the project. The most comprehensive geological references useful in paleontological resource sensitivity were that of Helley and Harwood (1985), covering Late Cenozoic deposits of the southern Sacramento Valley and the publication covering the Sacramento Geologic Quadrangle sheet (Wagner et al. 1981). Currently, the Roseville and Pleasant Grove topographic quadrangle sheets cover the project area.

Specific technical paleontological and detailed lithologic data were derived from local geoscientist informants at California colleges and universities, and the designated northern California museum repository (University of California Museum of Paleontology) (UCMP).

Paleontological assessment of the project area was undertaken on the basis of information provided by existing geologic maps, interviews with key personnel at institutions visited by the author, and paleontological and geological literature pertinent to the formations identified in the review of these sources and field surveys.

Paleontological resources are lithologically dependent; that is, deposition and preservation of paleontological resources is tied to the lithologic unit in which they occur. The potential for paleontological resources to be present is described as the paleontological sensitivity of the geological unit.

Mr. David Lawler, project paleontologist, conducted field surveys during the period from November 12, 2001 to April 28, 2002. The paleontological assessment consisted of an evaluation of the paleontological potential of the proposed project components within the project area. The actual area of potential effects was considered to be within the footprint of any proposed excavation activities.

Field surveys were conducted on all areas subject to proposed disturbance within the proposed project footprint (water intake, inlet/outlet structures, and low-flow/bypass channel). However, it should be noted that nearly all of the project area is covered with grassland vegetation, with few undisturbed, open exposures with native rock or soil material available for inspection. The field survey method consisted walking a series of north-south, systematic pedestrian transects within existing agricultural sectors (e.g., rice fields, inspecting soils and available exposures, such as irrigation ditches and rodent burrow tailings, for evidence of fossiliferous materials. The linear pedestrian transects were approximately 50 feet apart. The investigation focused on discerning whether sensitive fossil materials were observable in sediments of the Turlock Lake Formation *(Qtl)*, Riverbank Formation *(Qr)* and the Quaternary alluvium *(Qal)* geologic units.

The author had previously conducted paleontological resource evaluations in the general project vicinity and compiled a technical report for the Roseville Energy Facility (Lawler, 2001).

PROJECT AREA DESCRIPTION

The CRRB project area is located in northwest Placer County in the southern portion of the Sacramento Valley region, California. It is located west of the City of Roseville. The project area is also situated north of Phillip Road, west of Fiddyment Road and east of Brewer Road (Figure 1). The topography consists of low rolling hill and basins that flank the southeast portion

of the Sacramento Valley region. The hills and ridges to the east of the project area in eastern Roseville represent prominent, erosional resistant landforms.

The project area will be divided into two storage basin areas, specifically, the North Basin and South Basin areas. Spoils materials excavated from the Low Flow Channel and Bypass Channel areas will supply the amount of earth materials required to construct a series of embankments to surround each basin area.

A low-flow channel and its associated outlet structure is proposed in the North Basin area. It will function to channel water from a drainage tributary designated as Northern Tributary Two into the North Basin and release water through its outlet structure into Pleasant Grove Creek, when deemed necessary.

A bypass channel and its associated inlet and outlet structures are proposed in the South Basin area. It will function to channel water from upper Pleasant Grove Creek into the South Basin and release water back into Pleasant Grove Creek at its outlet structure, when deemed necessary.

Mapped geologic units and their respective paleontological sensitivity within the project area are shown on Map 1. The project area includes sedimentary deposits of the Turlock Lake and Riverbank Formations and Quaternary Alluvium. Fossil plant root casts were frequently found in surface outcrops of the Turlock Lake and Riverbank Formations, but are not identifiable, nor considered scientifically diagnostic. Thus, no significant fossil materials were observed during the field surveys.

GEOLOGIC SETTING

SUMMARY OF REGIONAL GEOLOGY

Surficial sedimentary units of ranging from Plio-Pleistocene to Holocene ages underlie the entire project area. Depositional environments in these continental deposits include alluvial, fluvial, terrace to subaerial floodplain. Lithologies include sand, gravel, silt and clay, all of which are potentially favorable to the preservation of paleontological resources.

Rock outcrops ranging from Cretaceous to Pleistocene age occur as surficial and subsurface deposits along the eastern edge of the southern Sacramento Valley. Sedimentary units in this region have been previously described and mapped by Atwater (1982), Bartow (1987), Brabb et al. (1971), Helley and Harwood (1985), (Marchand and Allwaldt 1981), Olmstead and Davis (1958), and Wagner et al. (1981). Deformed and faulted rock sequences in the Sacramento Basin have been described by MacKevett (1985). Age equivalent rock units have been mapped on the western side of the Sacramento-San Joaquin Valley region by Graymer and Helley (1997), Sims et al. (1973), and Weaver (1949). Geologic mapping of the Tertiary and Quaternary age sedimentary units in the northern Sacramento Valley has been published in the USGS-MF map series (see Helley and Harwood 1985).

The Quaternary rock units vary in facies type from conglomerates to sandstones to unconsolidated siltstone and clays, all of which are either fossiliferous or potentially fossiliferous.

Gradual, long-term erosion and previous construction activity has removed parts of the Holocene to Recent age soil cover. Thus, Quaternary-age rock units and their contained fossils are now exposed at or near the surface throughout most of the project area. These formations or parts of the formations now exist at or near the surface with varying widths across the project area terrain, but are obscured in most areas by soil, vegetation, or thin deposits of surficial sediment. Thus, visual detection of fossils is possible in those areas where natural erosion or man-made excavations during road building or agricultural grading operations for rice plantations have removed this cover.

The majority of the project area is underlain by both the lower (*Qrl*) and upper (*Qru*) members of the Riverbank Formation (*Qr),* The Turlock Lake Formation (*Qtl)* is present in surface outcrop in its northeastern and southern portions. Given this fact, the potential paleontological sensitivity of the project area has been determined from the distribution of available geologic mapping and known fossil localities.

PALEONTOLOGICAL PROJECT SETTING

SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES

The southern Sacramento Valley foothill region contains a diverse record of geologic and biologic history, which spans more than 100 million years, dating from the Upper Cretaceous period. Under the combined influences of regional tectonic events ranging from creation of the Sacramento Basin to uplift of the Coast Range foothill region, deposition of sedimentary sequences and fluctuating worldwide sea level changes, fossils of marine and terrestrial organisms have accumulated to produce a significant record of prehistoric life.

Much of the paleontological interest within the project area vicinity stems from the well known discoveries of Pleistocene age fossil vertebrate faunas derived from Quaternary age units in other parts of the Sacramento Valley–San Francisco Bay Region. Identification and scientific description of both of these diverse fossil vertebrate assemblages provides one of the best known records of Pleistocene faunas in California (see Stirton 1939, 1951, Savage 1951, Wolf 1971, and Jefferson 1991). Preservation of riparian and other continental volcanoclastic deposits provided favorable conditions for preserving vertebrate fossil remains in these geologic units.

Paleontological resources are classified as a non-renewable scientific-cultural resource and are protected most notably by the 1906 Federal Antiquities Act and other subsequent federal legislation and policies and State of California (CEQA) environmental provisions. Significant paleontological resources are defined in this report to include the interpretation outlined by the Society of Vertebrate Paleontology (1994), wherein vertebrate fossils are considered significant.

Paleontological significance can be summarized according to the following criteria:

- Provides important information on evolutionary trends; relating living organisms to extinct organisms.
- Provides important information pertaining to biological community development and zoological/botanical biota interaction.
- Demonstration of unusual circumstances in biotic history

- Existence of limited sample size, in danger of depletion or destruction by natural processes, vandalism or commercial exploitation, found in no other geographic locations.

CRITERIA FOR DETERMINATION OF POTENTIAL

Three categories of paleontological potential are used in this report: high, moderate, and low. Rating categories are considered to be interpretive and are subject to change as new information is obtained. High, moderate, and low ratings are defined as follows:

High Potential Rating

Rock units having a high potential for significant paleontological resources are known to have yielded vertebrate fossils within the project area or region. This does not necessarily imply that vertebrate fossils will always be recovered from rock units rated as having high potential, but only that there are recorded occurrences within the unit. Additional factors that are considered pertain to inferred depositional environment and lithology.

Moderate Potential Rating

Rock units rated as having moderate potential include those that possess a favorable depositional environment for resource preservation, or are lithologically similar to rock units in the region that have yielded vertebrate fossils. Field survey and construction monitoring are recommended for all rock units rated as having moderate potential.

Low Potential Rating

Rock units rated as having low potential contain lithologies that do not commonly preserve significant fossil resources (i.e., coarse conglomerates, welded or ignimbrite volcanic ash deposits). Igneous plutonic rocks, such as granite or gabbro, are precluded from preservation of paleontological resources, due to their genesis within a magmatic environment.

PALEONTOLOGICAL RESOURCES

CENOZOIC ROCK UNITS

Over 100 years of fossil vertebrate collecting in the San Francisco–Bay Delta Region has produced one of the most extensive databases for understanding the fossil vertebrate record of northern California. Only the southern California–Los Angeles Basin–Newport Beach area as yielded as much information on the Pleistocene coastal vertebrates of North America (Langenwalter 1975).

The first record of a fossil vertebrate from San Francisco–Bay Delta Region was a fossil mammoth tooth from the San Pablo Bay area, as reported by Blake (1855). Stirton (1939 and 1951), Savage (1951), and Jefferson (1991) have extensively reported on fossil land-mammal assemblages found in this region (see Table 1). Vertebrate sites in the Hercules-Rodeo districts have yielded a significant quantity of microvertebrate material. This diverse microvertebrate fauna has been extensively studied most recently by Wolf (1971, 1973, and 1975), and consists of numerous small mammals, including lagomorphs (rabbits), rodents, insectivores and a variety

of birds and lower vertebrates (frogs, lizards and snakes). Many of the fossil specimens represent the best-preserved specimens of particular taxa found to date. Appendix A contains data from fossil mammal assemblages collected from the San Francisco Bay-Delta Region (see UCMP 1359, 1363, V3719, and V79073 site records). (This appendix is confidential.)

In comparison, the La Brea Tar Pit fossil mammal assemblage of upper Pleistocene age in the Los Angeles Basin is well known world-wide, and is derived from the Palos Verdes Sand (upper part of Arnold's San Pedro Formation) in the northwestern portion of the Los Angeles Basin. This assemblage includes a wide variety of carnivores (canids and felids), small to large ungulate herbivores (cervids, antilocaprids, camelids, equids, suiids, edentates (sloths), birds, rodents and lower vertebrates. Also included at these sites are aquatic mammalian taxa including otter, whale, and dolphin as well as shark and teleost fish taxa (Miller 1971).

No vertebrate paleontological sites are known to exist with in the project area. However, paleontological sites do occur in similar age rock units *outside* the project area but within the southern Sacramento Valley region. These contain scientifically important vertebrate fossils of proboscidian (elephant), camel, sloth, bison (buffalo), and rodent terrestrial mammalian taxa (see confidential fossil locality data — Appendix A).

While no vertebrate fossil sites have been found in the project area, fossil vertebrates have been found regionally. The localities that have yielded fossil vertebrates regionally have been assigned to the Pleistocene age Quaternary Alluvium unit (*Qal*) by museum scientists and are not differentiated by formational unit.

Turlock Lake Formation (*Qtl*)

Helley and Harwood (1985) and Marchand and Allwaldt (1981) identified the Turlock Lake Formation in the project area during field mapping of the late Cenozoic sedimentary sequences in the Sacramento and San Joaquin Valley regions. This sedimentary unit occurs in the northeastern and southern portions of the project area (Map 1). Rock exposures in the project area consist of coarse to fine-sized lithologies of arkosic silt, and gravel. The unit represents eroded alluvial fan material derived primarily from plutonic rocks in the nearby Sierra Nevada Foothill region. The Turlock Lake Formation is located stratigraphically below the Riverbank Formation.

While no fossil sites have been recorded within the project area, vertebrate fossils have been found regionally in age-equivalent sediments.

Riverbank Formation (*Qr*, *Qrl* and *Qru*)

Helley and Harwood (1985) also identified the Riverbank Formation in the project area during mapping of the southern and northern Sacramento Valley region (Map 1). This late Pleistocene age sedimentary unit covers the majority of the project area. Rock exposures consist of fine-bedded to massive siltstone units that range from weakly to strongly consolidated. Minor cross-bedded sand and fine gravel units also occur, as is characteristic of alluvial fan deposition. The formation has been divided into upper and lower units. The alluvial materials of the Riverbank Formation are virtually identical to those of the Modesto Formation, but the slight degree of

erosional modification and soil profile development clearly differentiate them from older alluvium (Marchand and Allwandt 1981).

The sand, gravels, silts, and clays of the Riverbank Formation were deposited in a series of alluvial fans and associated deposits in the vicinity of the tributaries of the ancestral Sacramento River drainage. Their generalized rock outcrop is generally represented as a wide zone to the east of the Modesto Formation in the San Joaquin-Sacramento Valley region (Marchand and Allwaldt 1981).

Hilton, Dailey, and McDonald (2000) have reported on a fossil mammal assemblage from the Arco Arena site (see Appendix A). Fossil mammals represented at this site include mammoth, camel, horse, bison, sloth, squirrel, and coyote. The fossil skeletal remains of bison were associated within a small area and are attributed to a single individual.

A microvertebrate fossil fauna was discovered by the author in 1995 in fine-grained sediments of the Riverbank Formation in the vicinity of Davis, California, 30 miles southwest of the project area.

The microvertebrate fossil remains represent a variety of rodent-sized mammals: mice (Cricetidae and Microtidae families), rabbits (lagomorphs), gophers (Gopheridae) and squirrels (Sciuridae). The fossil remains consisted of a series of partial skulls, lower and upper jaw fragments, isolated teeth including numerous incisors, limb bones and vertebra.

Quaternary Age Sediments (*Qal*)

Quaternary alluvium deposits of Pleistocene age occur locally within the active stream portions of the project area. Usage of the *Qal* geologic symbol designation on available geologic maps is highly variable. Geologic units ranging from Quaternary age stream, terrace, fluvial, and alluvial fan and floodplain deposits have been lumped under this designation, particularly where geologic data have been scarce (see Helley and Harwood 1985, Wagner et al. 1981, and Olmstead and Davis 1958). Helley and Harwood (1985) have designated Quaternary age sediments within the project region as the Quaternary alluvial (*Qa)* or basinal (*Qb)* units.

Sandstone, silt, and clay lithologies of both geologic units are favorable for exceptional preservation of vertebrate, and microvertebrate fossil resources. Several Southern Sacramento Valley vertebrate sites have been assigned to the Pleistocene age Quaternary Alluvium unit (*Qal*) by museum scientists and are not further differentiated geologically.

Holocene and Post-Holocene Age Sediments

Sediments of probable Holocene or post-Holocene age that form the thin, surficial cover are considered to be of limited paleontological interest, and thus are considered inconsequential.

PALEONTOLOGICAL SENSITIVITY ANALYSIS

The paleontological sensitivity ratings are summarized for all proposed project components on Table 2. The Turlock Lake (*Qtl)* and Riverbank (*Qr*) Formations and the Quaternary Alluvium unit (*Qal*) are the geological units of paleontological significance and have been assigned a high

rating. Analysis of museum record and specimen collections and the distribution of regional fossil localities permitted classification of paleontological resource sensitive rock units. It should be noted that the sensitivity rating category for a particular geological unit may change as future paleontological resources are discovered.

Low-Flow Channel and Outlet Structure

The proposed low-flow channel and its associated outlet structure areas are assigned a high sensitivity rating, since shallow excavations are predicted to penetrate into undisturbed upper Riverbank Formation (*Qru)* and Turlock Lake (*Qtl)* sediments.

Bypass Channel and Inlet/Outlet Structures

The proposed bypass channel and its associated inlet and outlet structures are assigned a high sensitivity rating, since shallow excavations are predicted to penetrate into undisturbed Riverbank Formation (lower and upper members) and Quaternary Alluvium (*Qal*) sediments.

MITIGATION RECOMMENDATIONS

Mitigation activities should include:

1. Pre-construction meetings with key construction personnel to provide brief discussions pertaining to paleontological resource significance, visual identification, and discovery notification procedures.

2. Proposed construction areas containing geological units designated with a potentially moderate or high sensitivity rating should be monitored by a professional paleontologist during construction, to ensure that subsurface paleontological resources are adequately protected.

3. If unique paleontological resources are discovered, all significant fossil material should be collected, prepared, identified, and curated into a state-designated scientific repository. Salvage operations should be conducted in accordance with professional paleontological standards (e.g., Society of Vertebrate Paleontology standards).

Construction Phase Monitoring

It is recommended that a paleontologist intermittently spot-check excavation spoils for significant paleontological materials during site grading and excavation activity. Mitigation salvage efforts to conserve scientifically significant specimens should be implemented, where deemed necessary.

DATA SOURCES

Paleontological resource data within the project area were compiled from published records of previous geologic and paleontological investigations. These references are included in the attached bibliography. Also included are unpublished geologic maps, unpublished paleontological research papers and museum records.

Sources consulted on the general geology of the area included regional geologic maps compiled by the California Division of Mines and Geology. More specific geologic information, in the form of 1:24,000 and 1:62,500-scale USGS and CDMG geologic maps, is available for the project area.

Fossil locality records were reviewed and fossil specimens inspected (when possible) at the following institutions, which provided most of the data concerning distribution of known fossil resources:

1. University of California Museum of Paleontology (UCMP)
   Museum staff provided access to paleontological data records and collections during the period from November 2001 to April 2002.

2. Sierra College Museum of Natural History
   Mr. Richard Hilton, Museum Curator. The curator provided data on paleontological specimens data previously found in Turlock Lake and Riverbank Formations within Placer County (January-March, 2002).

REFERENCES

Atwater, B.F. 1982. Geologic Maps of the Sacramento-San Joaquin Delta, California, *U.S. Geological Survey, Miscellaneous Field Studies Map* MF-1401 15 p., Scale 1:24,000., 21 sheets.

Bartow, J.A. 1987. Cenozoic Stratigraphy of the Northern San Joaquin Valley, Central California, *In Structural Geology of the Sacramento Basin, SEPM Geologic Guidebook Series.* 117 p.

Blake, W. P. 1855. Remains of the Mammoth and Mastodon in California, *Amer. Jour. Sci. Arts*, Series 2, Vol. 19, No. 55, 133 pp.

Brabb, E.E., Sonneman, H.S., and Switzer, J.R., Jr. 1971. Preliminary Geologic Map of the Mt. Diablo – Byron area, Contra Costa, Alameda, and San Joaquin Counties, California, *U.S. Geological Survey, Open-File Report* 71-53. Scale 1:62,500, 2 sheets.

Gabb, W. M. 1864. Description of the Cretaceous Fossils, *California Geol. Surv.*, 1864, Paleontology, Vol. 1, p. 58-81, 102-236.

Graymer, R.W., Helley, E.J. 1997. Quaternary Geology Map of Contra Costa County and Surrounding Parts of Sonoma, Solano, Sacramento, and San Joaquin Counties, California, A Digital Database, *U.S. Geological Survey, Open-File Report* 97-98. Scale 1:75,000.

Helley, E. J. and Harwood, D. S. 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills Region, California. *U.S. Geological Survey, Miscellaneous Field Studies Map* MF-574. Scale 1:62,500.

Hilton, R. P., Dailey, D. C., and McDonald, H. G. 2000. A Late Pleistocene Biota from the Arco Arena Site, Sacramento, California. *Paleobios.* Vol. 20, No. 1, pp. 7-12.

Jefferson, G.T. 1991. A Catalogue of Late Quaternary Vertebrates From California: Part One, Nonmarine Lower Vertebrates and Avian Taxa, *Natural History Museum of Los Angeles County*, Technical Report No. 5, 60 pp.

Langenwalter, P. E. 1975. Fossil Vertebrates of the Los Angeles-Long Beach Harbors region, pp. 36-54, *In:* Kennedy, G. L. Paleontological Record of Areas Adjacent to the Los Angeles and Long Beach Harbors, Los Angeles County, California: Marine Studies of San Pedro Bay, California, Part 9, Paleontology: ed. D. Soule and M. Oguri, Alan Hancock Foundation and Office of Sea Grants Programs, Univ. Southern CA, Publication USC-SG-4-75.

Lawler, D. A. 2001. Roseville Energy Facility – Paleontological Resources Technical Report. 21 pp.

MacKevett, N.E. 1985. Structural Geology of the Sacramento Basin, *SEPM Geologic Guidebook Series.*

Marchand, D. E. and Allwardt, A. 1981. *Cenozoic stratigraphic units, Northeastern San Joaquin Valley, California:* U.S. Geol. Survey Bulletin 1470, 70 pp.

Miller, W.E. 1971. Pleistocene Vertebrates of the Los Angeles Basin and Vicinity (Exclusive of Rancho La Brea). *Los Angeles Co. Mus. Nat Hist. Sci. Bull.* Vol. 10, No. 4, pp. 47-142.

Olmstead, F. H. and Davis, G. H. 1958. Geologic Features and Ground-Water Storage Capacity of the Sacramento Valley, California. *U.S. Geological Survey, Open File Report.* Map scale 1:125,000.

Savage, D.E. 1951. Late Cenozoic Vertebrates of the San Francisco Bay Region. *Univ. Calif. Public. Geol. Sci.*, Vol. 28, No. 10, pp. 215-314, 51 figs.

Sims, J.D., Fox, K.F., Jr., Bartow, J.A., and Helley, E.J. 1973. Preliminary Geologic Map of Solano County and parts of Napa, Contra Costa, Marin, and Yolo Counties, California. *U. S. Geological Survey, Miscellaneous Field Studies Map* MF-484. Scale 1:62,500, 5 sheets.

Society of Vertebrate Paleontology. 1994. Mitigation and Monitoring Guidelines Vertebrate Paleontological Resources. Memorandum.

Stirton, R.A. 1939. Late Cenozoic Vertebrates of the San Francisco Bay Region. *Univ. Calif. Public. Geol. Sci.*, Vol. 24, pp. 339-410, 95 figs.

Stirton, R.A. 1951. Prehistoric Land Mammals of the San Francisco Bay Region. *In – Geologic Guidebook of the San Francisco Bay Counties, Calif. Div. Mines Geol., Regional Map Series,* Bulletin 154, pp. 177-186.

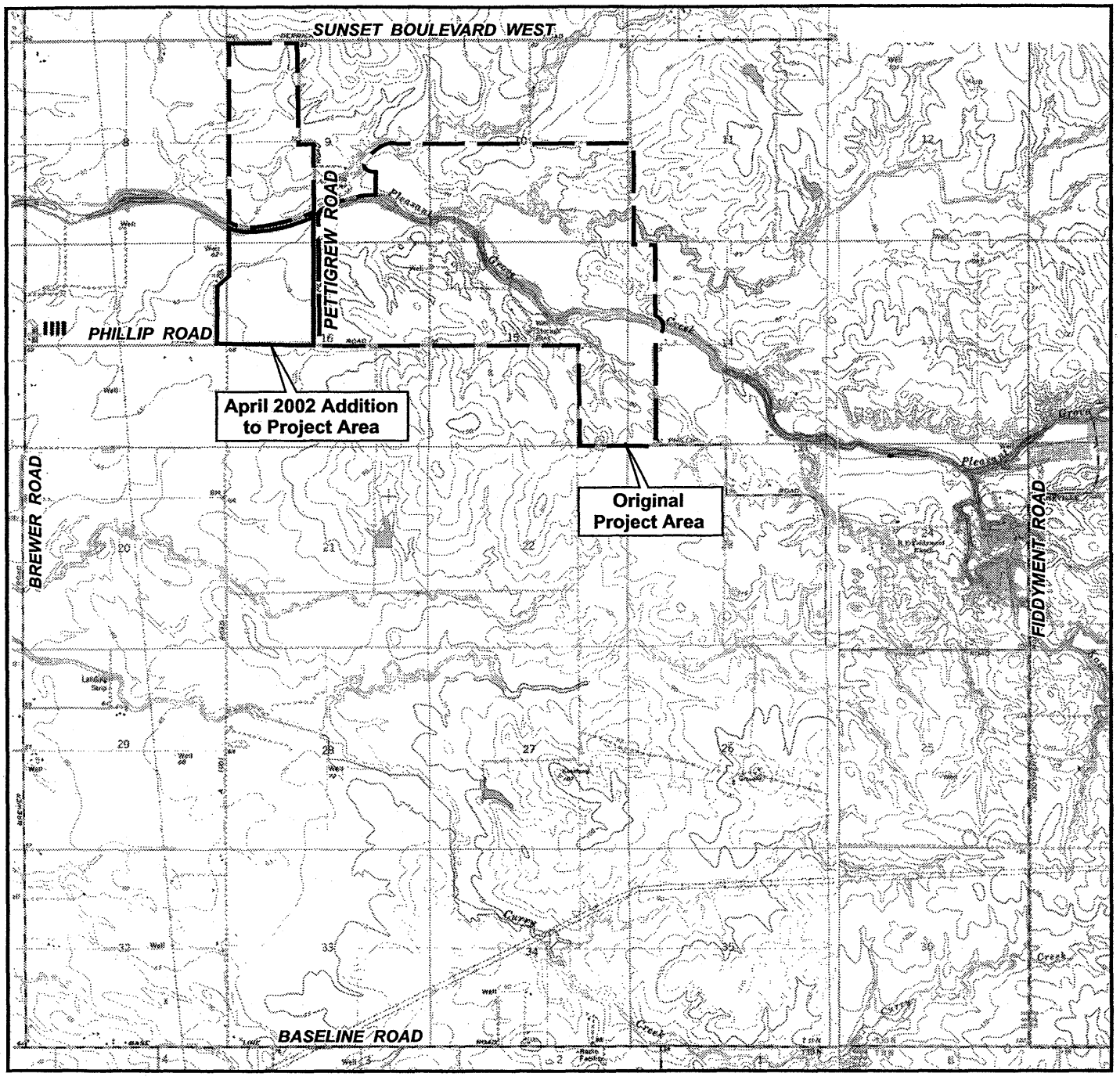
Wagner, D. L., Jennings, C. W, Bedrossian, T. L., and Bortugno, E. J. 1981. Geologic Map of the Sacramento Quadrangle, California, *California Division of Mines and Geology Regional Map Series.* Map scale 1:250,000.

Weaver, C.E. 1949. Geology of the Coast Ranges – North San Francisco Bay Region. *Geol. Soc. Amer.* Memoir 35, 242 pp.

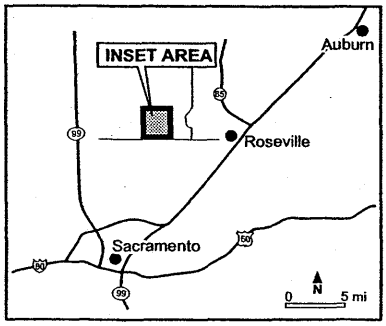
Wolf, R.G. 1971. Paleoecology of a Late Pleistocene (Rancholabrean) Vertebrate Fauna from Rodeo, California, Ph.D. dissertation, University of California, Berkeley, 136 pp., unpublished.

Wolf, R.G. 1973. Hydrodynamic Sorting and Ecology of Late Pleistocene Mammalian Assemblage from California (USA). *Paleogeog., Paleoclimatol., Paleoecol.,* Vol. 13, pp. 91-102.

Wolf, R.G. 1975. Sampling and Sample Size in Ecological Analyses of Fossil Mammals, *Paleobiology*, Vol. 1, No. 2, pp. 195-202.



Source: USGS 7.5 Series Topographic Maps,
Pleasant Grove, California, 1967, photorevised 1981 and
Roseville, California, 1967, photorevised 1981



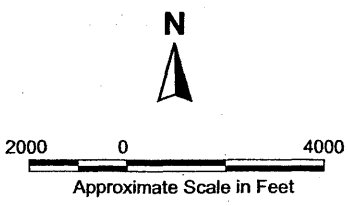


Figure 1
PROJECT LOCATION

Initial Study
City of Roseville Retention Basin
Roseville, California

Prepared by Lawler Associates May 2002

6/11/02 vsa ..\43-00067030.00\F1_ProjLocation_paleo.cdr

TABLE 1

PLEISTOCENE – RANCHOLABREAN LAND MAMMAL AGE VERTEBRATE TAXA LIST (PARTIAL) – SF BAY REGION

Order	Family	Species	Common Name
Rodentia	Spermophilidae	*Citellus*	Ground Squirrel
Rodentia	Cricetidae	*Perognathus*	Pocket Mouse
Rodentia	Cricetidae	*Peromyscus*	Pocket Mouse
Rodentia	Cricetidae	*Neotoma*	Wood Rat
Rodentia	Microtidae	*Microtus*	Meadow Vole
Rodentia	Geomyidae	*Thomomys*	Pocket Gopher
Carnivora	Canidae	*Canis dirus*	Dire Wolf
Carnivora	Canidae	*Canis irvingtonensis*	Coyote
Carnivora	Felidae	*Smilodon*	Sabre-Tooth Cat
Proboscidia	Mammutidae	*Mammuthus columbi*	Mammoth
Edentata		*Nothrotherium*	Ground Sloth
		Megalonyx	Ground Sloth
		Paramylodon	Ground Sloth
Perisodactyla	Tayassuidae		Peccary
Perisodactyla	Tapiridae	*Taipirus cf. haysii*	Tapir
Perisodactyla	Equidae	*Equus sp.*	Horse
Artiodactyla	Camelidae	*Camelops herternus*	Camel
Artiodactyla	Cervidae	*Tetrameryx irvingtonensis*	Deer
Artiodactyla	Cervidae	*Odocoileus*	Deer
Artiodactyla	Antilocapridae	*Antilocapra (?)*	Antelope
Artiodactyla	Antilocapridae	*Breameryx cf. minor*	Antelope
Artiodactyla	Bovidae	*Euceratherium*	Musk-Ox
Artiodactyla	Bovidae	*Bison latifrons*	Giant Bison
Artiodactyla	Bovidae	*Bison cf. antiquus*	Bison
Aves		*Uria aalge*	Murre

Source: Stirton 1951.

TABLE 2

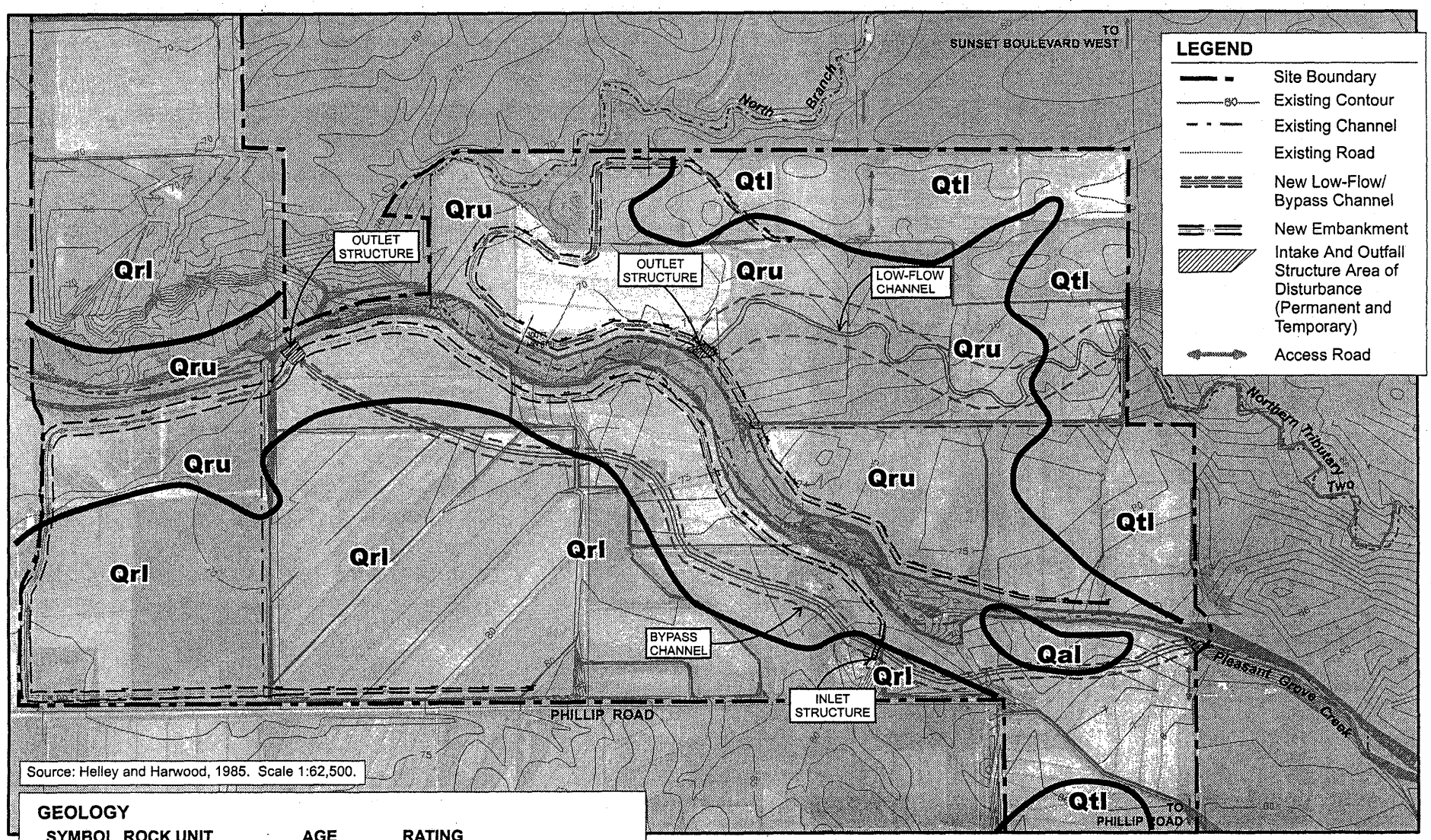
CITY OF ROSEVILLE RETENTION BASIN PROJECT PALEONTOLOGICAL SENSITIVITY & GEOLOGIC UNITS

LOW FLOW CHANNEL AND OUTLET STRUCTURE

ROCK FORMATION	SENSITIVITY RATING
Qtl and *Qru*	High

BYPASS CHANNEL AND INLET/OUTLET STRUCTURES

ROCK FORMATION	SENSITIVITY RATING
Qrl, *Qru* and *Qal*	High



Source: Helley and Harwood, 1985. Scale 1:62,500.

GEOLOGY

SYMBOL	ROCK UNIT	AGE	RATING
Qal*	Quaternary Alluvium	Pleistocene	(High) (Known vertebrate fauna)
Qru	Riverbank Fm (Upper)	Pleistocene	(High) (Known vertebrate fauna)
Qrl	Riverbank Fm (Lower)	Pleistocene	(High) (Known vertebrate fauna)
Qtl	Turlock Lake Fm	Plio-Pleist	(High) (Known vertebrate fauna)

*Qal **Quaternary Alluvium** - notation:
While Quaternary alluvium deposits of Pleistocene age occur locally within the project area, usage of the Qal geologic symbol designation on available geologic maps of the Contra Costa County region is highly variable and suggests that geologic units ranging from Quaternary stream, terrace, fluvial, alluvial fan, basinal, and floodplain deposits have been lumped under this designation, particularly where geologic data have been scarce (see Wagner (1981) and Helley and Harwood (1985) for comparison).

N

0 800 1600

Scale (feet)

Map 1
GEOLOGIC UNITS/ PALEONTOLOGICAL SENSITIVITY

Initial Study
City of Roseville Retention Basin
Roseville, California

Prepared by Lawler Associates May 2002

6/11/02 vsa \43-00067030.00\Map1_geo_paleo.cdr

APPENDIX A

UCMP PALEONTOLOGICAL DATA
VERTEBRATE LOCALITY AND SPECIMEN DATA

This appendix is confidential, and is not included
in this copy of the Paleontological Resources Technical Report.

APPENDIX D

NOISE CALCULATIONS

Appendix D
Noise Calculations

21 @	80 -	93	scraper/grader/bulldozer	1	bypass	2625 feet
6 @	83 -	96	water truck/truck		in/outlet	2475 feet
2 @	73 -	94	excavator		embank	75 feet
3 @	73 -	75	compactor			
				2	bypass	2625 feet
	95.3 -	108.5	total		in/outlet	2250 feet
	-12	-12	15 minutes		embank	975 feet
	83.3 -	96.5	time weighted			
				3	bypass	2175 feet
					in/outlet	2775 feet
2 @	76 -	88	concrete mixer		embank	1650 feet
2 @	83 -	96	truck			
				4	bypass	4500 feet
	86.8 -	99.6	total		in/outlet	4500 feet
					embank	5500 feet
2 @	80 -	93	scraper/bulldozer	5	bypass	300 feet
					in/outlet	300 feet
1 @	73 -	75	compactor		embank	1200 feet
	83.4 -	96.0	total			
	-12	-12	15 minutes		reference	50 feet
	71.4 -	84.0	time weighted			

1	-34.4	48.9 -	62.1		
	-33.9	52.9 -	65.8	68.1 - 80.7	total
	-3.5	67.9 -	80.5		
2	-34.4	48.9 -	62.1		
	-33.1	53.7 -	66.6	55.0 - 67.9	total
	-25.8	45.6 -	58.2		
3	-32.8	50.5 -	63.7		
	-34.9	51.9 -	64.8	54.3 - 67.3	total
	-30.4	41.1 -	53.7		
4	-39.1	44.2 -	57.4		
	-39.1	47.7 -	60.6	49.3 - 62.3	total
	-40.8	30.6 -	43.2		
5	-15.6	67.7 -	80.9		
	-15.6	71.2 -	84.1	72.8 - 85.8	total
	-27.6	43.8 -	56.4		

APPENDIX B

APPENDIX B

SCOPING COMMENTS AND CITY RESPONSES TO WRITTEN COMMENT LETTERS

TABLE OF CONTENTS

B-1 Comments Raised During Scoping Meeting

B-2 Comment Letters Received on Notice of Preparation

B-3 City of Roseville's Responses to Comment Letters Received on Notice of Preparation and Initial Study

B-1

COMMENTS RAISED DURING SCOPING MEETING

Pleasant Grove Retention Basin
CEQA Scoping Meeting Comments
Roseville Corporation Yard 6:30P.M.
August 8, 2002

A general overview of the project was provided by City staff and consultants followed by a question and answer secession which included the identification of issues to be addressed in the project's focused EIR. The following summarizes comments received.

Gaynell Gleason – 6495 Sunset Blvd. West, Roseville CA 95678
Ms. Gleason is an owner of 160 acres of property adjacent the northeast corner of the project site.

1. Drainage. Has concerns with historic land leveling on Reason Farms conducted to expand rice farming operations near the northwest project site boundary. This has changed the historic drainage pattern along the northern site boundary which receives runoff from Lincoln. Drainage which historically flowed south onto the Reason Farms property and eventually into the former northern tributary two now is forced to flow west to the north branch of Pleasant Grove Creek. Questioned if the project would be addressing this problem.
2. Ground Water. Stated that Reason Farms operates up to twelve wells and that Reason Farms pumping has cut Gleason well production in half. Concern was expressed over how future pumping would be managed should on site agricultural operations continue.
3. Property Boundary Survey. Concern was expressed over locating the actual northern property boundary line. Stated that their property line is on the "northern boundary road center line."
4. Beavers and Gophers. Expressed concern over the potential for rodents to burrow through levees and cause undetectable damage which could compromise the levee integrity. The problem could be compounded by the infrequent use of the retention basin which could allow damage to go undetected for extended periods.
5. Public Use. Concerns with compatibility of existing agricultural operations and the potential for public use of the site. The project area was described as open land with minimal fencing. Concern with issues related to hunting, trespass, and fire. Wanted to know how public use will be managed and controlled.
6. On Site Agricultural Potential. Questioned whether anything other than rice could be grown on the site (soil constraints).
7. Site Access. Stated that the proposed northern access road has been destroyed due to flooding that occurs as a result of comment No. 1. Stated that a tractor is sometimes needed to negotiate the road during certain conditions. Wanted to know if this road would be reconstructed as part of the project.

8. Hunting Clubs. Past leases didn't have good oversight and an accidental shooting death has occurred in the area. City will need to be responsible for keeping the public off of adjacent private property. How will the City limit its liability in these areas?

Sherry Dickerson – 3825 Pettigrew Road, Roseville CA 95678
Ms. Dickerson is a property owner on the north side of Pleasant Grove Creek adjacent to the project site and northeast of the south basin outlet structure.

1. Levee Failure. Expressed concerns should there be a levee failure as her property is immediately down stream.
2. Use of Excess Property (northern leg) and Access to Her Property. Questioned what uses were planned for the northern leg of the project site. Expressed concern because the access road to her residence follows the property line (Pettigrew Road).
3. Construction Noise. Expressed concern over excessive construction noise and questioned the duration that construction would occur near her property.

Jack Wallace – Roseville Resident

1. Funding. Asked what funding sources have been used to complete studies to date and what sources will be used for the EIR and other related project studies.
2. Construction Timing. Stated that the project could be built sooner or later than described in the initial study depending on the economy and rate of building permits issued by the city.
3. South Basin Inlet Location. Questioned why the south basin inlet structure was located so far east.

B-2

COMMENT LETTERS RECEIVED ON NOTICE OF PREPARATION

PLACER COUNTY
TRANSPORTATION
PLANNING AGENCY

KATHY SANDS
City of Auburn
SHERRIE BLACKMUN
City of Colfax
TOM COSGROVE
City of Lincoln
MIGUEL UCOVICH
Town of Loomis
KATHY LUND
City of Rocklin
ROCKY ROCKHOLM
City of Roseville
HARRIET WHITE
TED GAINES
Placer County
ROGER IMSDAHL
Citizen Representative
CELIA McADAM
Executive Director

August 5, 2002

Mark Morse, Environmental Coordinator
Community Development Department
City of Roseville
311 Vernon Street
Roseville, CA 95678-2649

RE: Proposed Retention Basin DEIR

Thank you for the copy of your Notice of Preparation and Initial Study. As cited in it, the proposed retention basin would be located where two preliminary alignments for the Placer Parkway have been identified.

Placer Parkway

The Placer Parkway is a proposed approximate 15-mile long, east-west, controlled access highway that would connect rapidly growing areas in western Placer County to planned industrial development in south Sutter County as well as the I-5 corridor. The roadway is planned to connect SR 65 with SR 70/99 in an area between Sunset Boulevard and Baseline Road.

Preliminary studies, a Conceptual Plan (2000) and a Project Study Report (2001), for the proposed Placer Parkway have been completed. Both were based on comprehensive public participation programs and preliminary engineering/environmental background. PCTPA and SACOG Boards have adopted them.

PCTPA programmed $4.7 million in FY2002/03 in the 2002 RTIP for the Placer Parkway's environmental review. The project was also included the 2002 STIP and SACOG's recently adopted Metropolitan Transportation Plan. On July 18, the California Transportation Commission allocated this funding.

Later this month, work will begin on a Tier 1 – Environmental Impact Report/Environmental Impact Statement. It will complete federal and State environmental and preliminary engineering requirements to specify a Placer Parkway alignment for right-of-way acquisition.

550 High Street • Suite 107 • Auburn, CA 95603 • (530) 823-4030 • FAX 823-4036

Potential Impacts

The Placer Parkway's PSR identified and evaluated several concept alignments. As illustrated in the Initial Study (Figure 2-12), two of these alignments would cross over portions of the proposed retention basin:

- 'north' Parkway alignment – paralleling Sunset Blvd. from SR 65 to SR 70/99 – north of Sankey Rd.

- 'recommended' Parkway alignment – running from SR 65 at Sunset Blvd. – southwest – to SR 70/99 approximately one mile north of Riego Rd.

The alignments assume corridor widths ranging between 1,000'- and 2,000'-wide. The corridor concept is to include and promote vicinity open space features such as agricultural land and riparian/wetland habitats.

The retention basin DEIR's alternatives analysis should consider:

1. these Placer Parkway corridor alignments

2. ways to promote open space opportunities and minimize any potential conflicts between the two proposed facilities

Thank you for including PCTPA in the review process. Please send us a copy of the retention basin's DEIR. If you have any questions, please call me at 530.823.4033.

Stan Tidman

Stan Tidman, Senior Planner

August 8, 2002

To: Mark Morse. Environmental Coordinator, City of Roseville, Community Development Department by FAX 916-774-5195

From: Ken Friedman, owner Parcel # 017-100-041
Office # 415-383-6798 or FAX 415-383-6323

Re: Retention Basin Study (Parkway Alignment Considerations)

I am concerned about the Recommended Placer Parkway Alignment drawn in Figure 2-12 next to page 22 of the URS/PWA study. I understand the need to approximate the location of the Parkway. However I do not like the potential precedent that could, even though PCTPA has assured City staff and land owners that no specific right of way has been established. The recommended Parkway alignment as drawn in Figure 2-12 would be detrimental to several MOU area properties including mine, and is inconsistent with other planning matters being considered by the Roseville Community Development Department. The City should apply a consistent Parkway route assumption for all planning, including for the retention basin.

The Signature-Westpark West Roseville Specific Plan, under review by City staff, would create the intersection of Blue Oaks and Watt as shown on Exhibit A attached, and would cause Watt and Placer Parkway to connect about ½ mile or more to the north, approximately as on the same Exhibit A attached. The West Roseville Specific Plan also reserves the northwest portion of Signature's property for the Parkway so that the Parkway would come through the MOU area at different angle and in a more northerly orientation.

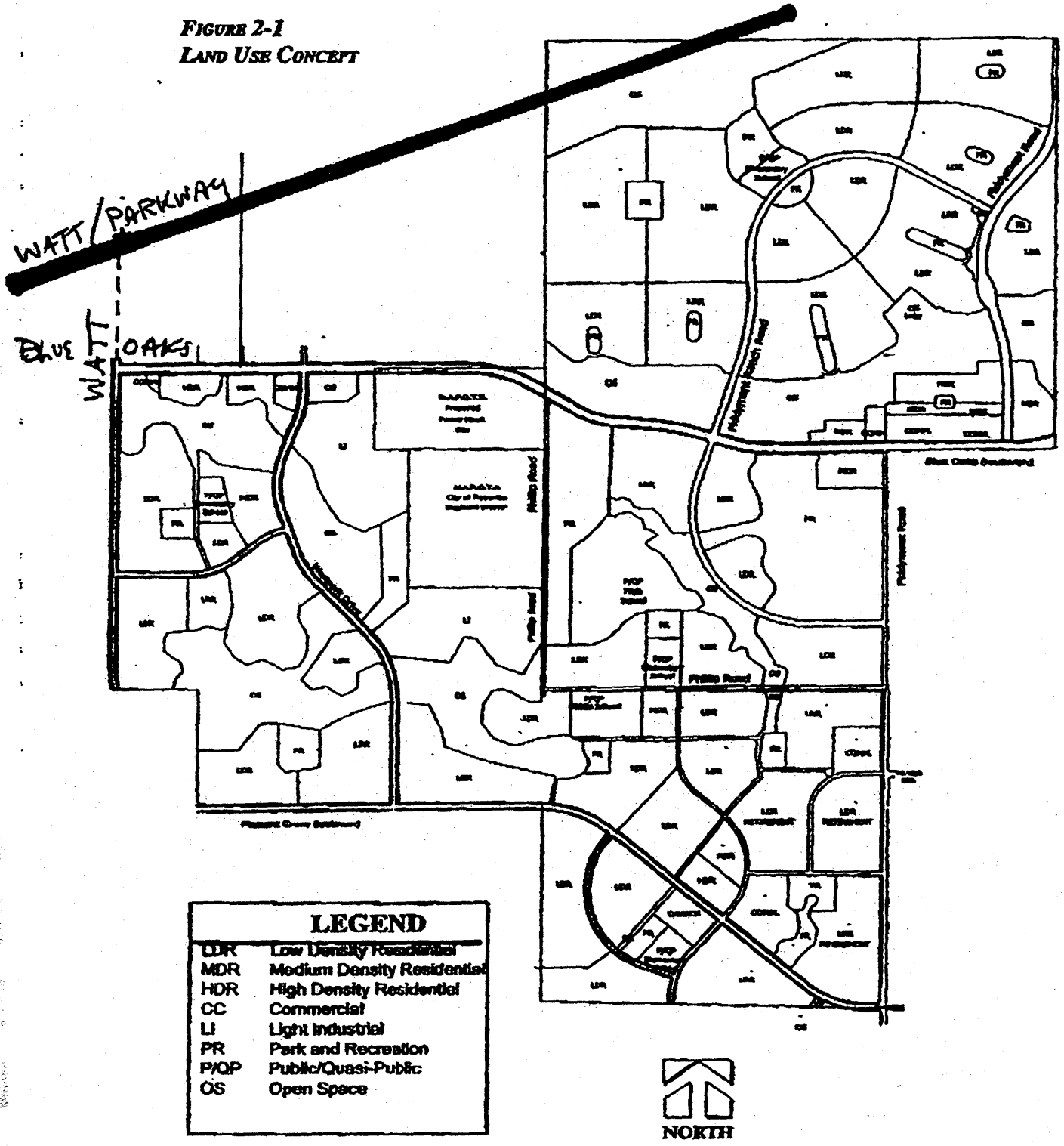
I have tried to draw a Parkway alignment (on Exhibit B) which is more consistent with the above planning constraints, and more advantageous for both Roseville and MOU area property owners. My suggested alignment in Exhibit B would not compromise PCTPA concerns (eg., traffic flow efficiency, development cost, environmental constraints), and would not interfere with the retention basin by-pass channel. As I have drawn it, Parkway would have a more northerly orientation, and the buffer portion of the Parkway would touch or overlap the proposed retention basin by-pass channel.

Most MOU area land owners would prefer that the parkway not pass though the MOU area at all. But assuming it might, I repeat the opinion that the City of Roseville needs an optimum-consistent MOU Parkway route position for all MOU area planning purposes (including for the retention basin), and for all negotiations with PCTPA. I believe that there is an optimum right of way that reconciles most City and owner concerns, so for the benefit of good planning, I hope the City will take such a position after consulting with all MOU property owners.

Cc Raul Cervantes, Scott Gandler, Kathy Pease

EXHIBIT A

FIGURE 2-1
LAND USE CONCEPT





LEGEND

- Recommended Placer Parkway Alignment for Programming Purposes
- Alternative Placer Parkway Alignment (Northern Alignment)
- Site Boundary
- Existing Channel
- Existing Road
- New Low-Flow/Bypass Channel
- New Embankment
- Intake And Outfall Structure Area of Disturbance (Permanent and Temporary)
- Access Road

N

0 800 1600 3200

Scale (feet)

EXHIBIT B (PARKWAY ROW)

Figure 2-12
POTENTIAL PLACER PARKWAY ALIGNMENTS

Initial Study
City of Roseville Retention Basin
Roseville, California

URS Ref. 43-00067030.00 July 2002

URS PWA

7/10/02 vss \43-00067030.00\F2-12_pkwy align2.cdr
7/10/02 sv

SC

Sutter County
Public Works Department

PW

Robert E. Barrett, Director
George L. Musallam, Asst. Director

(530)822-7450, Fax (530)822-7457
1160 Civic Center Blvd., Yuba City, CA 95993

August 13, 2002

Mark Morse
Environmental Coordinator
Community Development Department
311 Vernon Street
Roseville, California 95678-2649

Dear Mr. Morse:

RE: City of Roseville Retention Basin Project

Thank you for providing Sutter County the opportunity to review the above document. After reviewing the Notice of Preparation, the County has the following comments.

Introduction. Page 1 states, "The development of a retention basin will help reduce the risk of flood hazards to downstream communities." Yet on Page 8, under the overview, the report states that the retention would only operate once every 15 or 30 years when flooding was imminent in Sutter County. Flooding in Sutter County along these creeks occurs much more frequently than stated. If this basin is to truly assist with the flooding (in Sutter County and Placer County, west of the retention facility), then it needs to operate on a more frequent basis. Operation criteria is never really specified in this initial study – i.e. what is viewed as imminent flood risk?

2. The design of the basins will include not only banks for retaining water within the designated ponding area but will act as a levee system along the Pleasant Grove Creek corridor. Currently, the creek has about two foot tall levees along its banks. Flows frequently overtop these minimal levees periodically along the creek corridor and sheet flows over local fields. This area already acted as a periodic storage of flood flows (which was additional flood relief for downstream entities). This is further justification that the retention basin should be operated differently than specified and on a more frequent basis.

3. Page 5, Table 2-2. It appears that this retention basin will only mitigate for increased flows from developed area west of Fiddyment Road and north of Baseline Road (with the addition of the City of Rocklin annexation area). Where

is the mitigation required for the area currently under development east of Fiddyment? Please clarify in the Draft Environmental Impact Report what areas this retention facility actually mitigates (i.e. detailed maps of all areas including Rocklin area). I would also like to see how you have calculated mitigation of flows from the area north of Baseline Road which would naturally drain into Curry Creek and not Pleasant Grove. Will this retention basin take the peak flows off Pleasant Grove to allow increased flows into Curry Creek? Planning of this retention basin must consider that all creeks in this area eventually become one at the Pleasant Grove Creek Canal and the Natomas Cross Canal. Interaction of each individual creek must be included in your analysis. Please provide a copy of the hydraulic analysis to Sutter County for review.

4. Page 10, South Basin. According to the description of earthen embankment, it would be constructed through use of materials generated while excavating the bypass channel. I assume that these materials have been tested and are acceptable materials to be used in construction of embankments (aka levees or dam)? Design of the embankment needs to be specific, with future maintenance of the structure a part of the project costs.

5. Page 11, Inlet Structure. Suggest a low level weir be used instead of gates which need to be operated based on various operating criteria (who determines this?). With a weir set at a certain level, the channel can overflow into the basin as the waters back up or flows exceed channel capacity allowing it a natural overflow area (as it currently does). It would also relieve maintenance of the trash racks which will fill rather quickly with each storm event (will there be an employee attending these facilities during storms?).

6. Page 12. Outlet structures. Who will decide on the operating criteria of when these gates will be opened? Although the flood event through Roseville and Placer County may only last a day, stages on the Sacramento River can keep the flood waters trapped in Sutter County for days. Suggest this operation criteria be reviewed and accepted by Sutter County.

7. Page11, Embankments. Indicates that tops of embankments will range from 12 feet to 20 feet. These will also be sustaining access roads. Suggest a minimum of the tops of 20 feet to allow for proper maintenance of the facilities.

8. Page 14, Sediment Transportation. States that the channel would convey sediments through the basin, yet at the outlet gates you have designed trash racks. Won't the trash racks become filled with these sediments?

9. Page 21, Paragraph 2. Would suggest that bark not be used in a floodplain area.

10. Page 22, Proposed Hwy 65 to 70/99 Transportation Facility. Has the effect of this planned design been taken into consideration in the retention facility requirements? How will it affect the proposed drainage/runoff?

11. Page 23, Required Approvals. DWR, Division of Dam Safety, will need to approve the embankment (levee) stability design.

Please include Sutter County on the distribution list for the draft EIR.

Very truly yours,

MARY KELLER
DEP. DIRECTOR- WATER RESOURCES

MK:jah
500:MORSE

State of California

The Resources Agenc

Memorandum

Date: AUG 15 2002

To: 1. Nadell Gayou, Resources Agency Project Coordinator
Environmental Review Section
901 P Street
Sacramento, California 95814

2. Mr. Mark Morse, Environmental Coordinator
City of Roseville
311 Vernon Street
Roseville, California 95678

From: **Department of Water Resources**

Subject: SCH #2002072084 Notice of Preparation of a Draft Focused Environmental Impact Report and Scoping Meeting for the City of Roseville Retention Basin Project, July 22, 2002, Placer County

The Division of Safety of Dams has reviewed the Initial Study for the City of Roseville Retention Basin Project and finds that the proposed dams and basins are under State jurisdiction for safety.

The owner must file an application, together with plans and specifications, for construction of the dams and basins. All dam safety issues must be resolved prior to approva of the application. Design and construction must be performed under the direction of a civil engineer registered in California. David A. Gutierrez, Design Engineering Branch Chief at (916) 445-3092, is responsible for the construction application approval process.

If you have any questions, please contact Office Engineer Chuck Wong at (916) 323-1113 or Regional Engineer Richard Baines at (916) 323-5300.

Richard J. Baines for

Stephen W. Verigin, Chief
Division of Safety of Dams
(916) 445-7606

TRUSTEES
ROBERT SCHEIBER
RICHARD F. TARESH
ROY C. OSTERLI II
WILLIAM P. HUDSON
JAMES L. SPANGLER

OFFICERS
WILLIAM P. HUDSON, PRESIDENT
ROY C. OSTERLI II, VICE PRESIDENT
DONALD WHITE, SEC. - MANAGER

OFFICE OF
BOARD OF TRUSTEES OF
RECLAMATION DISTRICT No. 1001
1959 CORNELIUS AVENUE
RIO OSO, CALIFORNIA 95674
530 656-2318 or 530 633-2586
FAX 530 656-2165

August 19, 2002

Mark Morse
Environmental Coordinator
Community Development Department
City of Roseville
311 Vernon Street
Roseville, CA 95678

We have reviewed the Reason Farms Retention Basin Final Conceptual Design Report and the Initial Study and provide the following comments and questions:

- Retention basin sites are difficult to find at this stage of urban development. Does this site have the capability of being expanded to include the omitted areas of Placer County including the Sunset Industrial Area and the existing city limits of Rocklin?

- The studies avoid confirming that the proposed amount of retention and the methods to determine the retention volume are appropriate.

- From a downstream view point, there is no guidance given for the operation of this facility.

    - When will the north and/or the south inlet gates be opened?
    - When will the outlet gates be closed?
    - Will storm forecasting be used?
    - When will storage start: at the end of an event, the center or the beginning?

- With multiple storms such as the 1986 event, when is the most logical time to provide retention?

- How is the point of imminent flooding determined?

- What measurement proves the successful operation of the project?

- If the City intends to close the outlet gates only during large events for retention mitigation, could the facility be operated to control peak flows to reduce local flooding?

Comments and questions on the HEC 1 modeling:

- The HEC 1 models have been used to evaluate the project. But there isn't any conclusion by the consulting team that the target volume of water to be retained is appropriate for the area to be mitigated. The engineers have used models from other nations to evaluate conditions when the HEC family of models was not appropriate. This and the operation plan is key to the success of the project.
  - Is the HEC 1 model the most appropriate to determine retention volume or should other models such as TR 20 or TR 55 be used?
  - HEC 1 has several loss rates methods. Should one be used for peak flows and another for retention?

- The Design Report indicates that the basin was modeled under the most extreme conditions and events to test for safety of those downstream. The HEC 1 models then are for an assumed fully developed watershed.
  - The model input provided shows that the percentage of impervious area has only two values: 0 or 100% for every sub-basin. This is an unlikely condition for a developed area. This is not explained.
  - All initial losses are set to zero. Setting the initial loses to zero will increase the peak flows and underestimate the impacts of development if used for both the pre and post conditions.
  - Is a constant loss rate of 0.06 inches per hour for the 8 day 100-yr event appropriate for this watershed?

- The rainfall totals for the 2-yr event vary from sub-basin to sub-basin. In some cases they appear to be less than the totals provided in the Placer County Flood Control Manual. The refinement for the two year event is inconsistent with the rest of the models and is not explained.
  - Appendix B of the design report provides a common rainfall total and distribution for the sub-basins for events other than the two year event.
    - Does this distribution conform to the standard methods provided by HEC 1 ?
    - What is the total rainfall for these events and are they consistent with the District manual? If not, why not?
  - The Placer County Flood Control District has an elliptical shaped cloudburst (a severe thunderstorm) design method. The storm intensity varies by contours. The storm center and direction are then moved around until the most critical location in the watershed is found. The storm location then varies ever time the watershed is changed. It is sensitive to elevation, watershed size and event . This provides a problem in splicing various models together, as the rainfall has to be revaluated for each sub-basin ever time the watershed boundaries are changed. The District provides a computer program for this method. Section V Hydrology, District Stormwater Management

Manual Version 3. This method may be slanted toward peak flows. No guidance is provided for events exceeding 500 years. There are no provisions for modifying other methods of storm distributions or storm totals.

- The 100-yr 24 hour event produces 5,365 acre feet of stormwater in 50 hours. The amount of retention mitigation provided is 2,530 acre feet. Adjusting for the two plants we have a net of 2303 acre feet of mitigation retention. This is without the several square miles of the Placer Sunset Industrial Area. City of Rocklin and other portions of Placer County not covered by agreements. Even without this additional area developed, the increased runoff volume is 43% of the total runoff. This is an increase of 75% over undeveloped conditions.

- If the north and south basins outflow hydrographs were combined at a point downstream and compared to conditions without the retention basin, it would be easer to understand the graphics.

- Drawing of the sub-basins are need to understand this project.

Thank you for the opportunity to review and comment on this very important project.

Fred Barnett
For RD 1001

CC: Don White Manager RD 1001
Brian Keating Placer County Flood Control
Mary Keller Sutter County

Mark Morse

CITY OF ROSEVILLE
TRADITION • PRIDE • PROGRESS

Public Works Department
Engineering Division
311 Vernon Street
Roseville, California 95678-2649

August 9, 2002

Mr. Donald E. White, Secretary/Manager
Reclamation District No. 1001
1959 Cornelius Avenue
Rio Oso, CA 95674

SUBJECT: ***City of Roseville Retention Basin Project***

Dear Mr. White,

I'm responding to your letter dated August 5, 2002. Please rest assured that the City of Roseville has not circulated the EIR for the subject project. The City is currently circulating the Notice of Preparation (NOP)/Initial Study of a Draft Focused Environmental Impact Report. The purpose of circulating the NOP/Initial Study is to receive comments on the project from permitting agencies, adjacent communities and the public. Comments received during the commenting period will be used to define the scope and content of the Draft Focused EIR.

I have enclosed for your information and review a copy of the NOP/Initial Study for Roseville's Retention Basin Project. I have also included a copy of the Final Conceptual Design Report. Please note that the comment period for the NOP/Initial Study ends on August 21, 2002. Additionally, we will include Reclamation District No. 1001 to the project's distribution list.

We look forward to receiving any comments that Reclamation District No. 1001 may have. If you have any questions regarding this letter, please do not hesitate to call me at (916) 746-1300.

Sincerely,

RAUL R. CERVANTES
Associate Engineer
City Projects Section

enclosures: NOP/Initial Study
Final Conceptual Design Report

c: Larry D. Pagel, Director of Public Works/City Engineer, w/out enclosures
Rhon L. Herndon, Senior Civil Engineer, w/out enclosures
Garth Gaylord, Associate Civil Engineer, w/out enclosures
Mark Morse, Environmental Coordinator, w/out enclosures

TRUSTEES
ROBERT SCHEIBER
RICHARD F. TARESH
ROY C. OSTERLI II
WILLIAM P. HUDSON
JAMES L. SPANGLER

OFFICERS
WILLIAM P. HUDSON, PRESIDENT
ROY C. OSTERLI II, VICE PRESIDENT
DONALD WHITE, SEC. - MANAGER

OFFICE OF
BOARD OF TRUSTEES OF
RECLAMATION DISTRICT No. 1001
1959 CORNELIUS AVENUE
RIO OSO, CALIFORNIA 95674
530 656-2318 or 530 633-2586
FAX 530 656-2165

August 5, 2002

RECEIVED
AUG 08 2002
DEPT. OF PUBLIC WORKS
CITY OF ROSEVILLE

AUG 08 2002

Larry Pagel, Public Works Director
City of Roseville
311 Vernon Street
Roseville, CA 95678

RE: Pleasant Grove Retention Basin EIR

Dear Mr. Pagel:

I was surprised to find that the EIR for the Pleasant Grove Retention Basin has been circulated without a copy or notice to this District.

As you know, this District has been active for decades to find solutions to the flooding problems in southeast Sutter County. Recently we sponsored a series of meetings between you personally, your staff, Sutter County and this District. Your and your staff know that the District is impacted physically and financially by flooding in the Pleasant Grove area and from Pleasant Grove Creek.

We have continually expressed our concerns about flooding and the methods of mitigation to you and your staff. We have requested and never received the drainage studies that would show that the City of Roseville has and is mitigating its impacts on this District. These have never been received and now we have been denied the right to review the EIR for the proposed retention basin.

We formally request at least one full copy of the EIR with the supporting studies and that the review period be extended to provide this District the full review period.

Yours truly,

Donald E. White
Secretary/Manager

cc: Fred Barnett
Brant Bordsen

Certified Mail #7099 3220 0009 6619 9219

City of Rocklin

3970 Rocklin Road
Rocklin, CA 95677-2720
916-632-4000
TDD 916-632-4013
www.ci.rocklin.ca.us

August 20, 2002

Mr. Mark Morse, Environmental Coordinator
City of Roseville, Community Development Department
311 Vernon Street
Roseville, CA 95678

SUBJECT: Initial Study for the City of Roseville Retention Basin Project

Dear Mark:

Thank you for the opportunity to review the above-referenced document. We have completed our review and have the following comment(s):

1. Page 5, Project Description – Table 2-2, Summary of Retention Volume Estimates, and last paragraph - The table and text discussion of the Northwest Rocklin Annexation area project identify the project's retention needs at 180 acre-feet, which underestimates the true retention needs of the project. The Draft EIR identified the storage needs of the Northwest Rocklin Annexation Area project as 260-acre feet. Please revise accordingly.

If you have any questions, please do not hesitate to call David Mohlenbrok at 632-5048. Thank you.

Sincerely,

David Mohlenbrok
Senior Environmental Planner

Sherri Abbas
Planning Services Manager

cc: Mr. George Djan
Terrence E. Lowell and Associates, Inc.
1528 Eureka Road, Ste. 100
Roseville, CA 95661

G:\corresp\2002-2\Roseville retention IS comments

Mr.& Mrs James Gleason
6495 Sunset Blvd. West
Roseville, CA 95747
(916) 655-3464

August 21,2002

Mr. Mark Morse, Environmental Coordinator
City of Roseville, Community Development Dept.
311 Vernon Street
Roseville, CA 95678

Dear Mr. Morse,

We are writing to you to restate some of our concerns regarding the City of Roseville Retention Basin Project as expressed at the scoping meeting we attended on August 8, 2002. In your initial study our residence was identified as residence #3. For future reference we will number the following issues.

(1) One of our chief concerns relates to the ground water in our area. Your study indicates that the twelve existing wells on the Reason Farms would be "capped off, but left in operable condition." Why would they be left in operable condition if your soul purpose is to store flood water? We posed this question at the meeting but we were not offered any explanation. The issue of water is crucial to both our home and our business. We operate a cow/calf business in which we irrigate 140 acres from April to November each year. Historically, when we commence irrigation in April, before Reason Farms turns on its 12 wells, we can run 40 valves at a time. When the rice wells come on our capacity to irrigate drops to 20 valves. If the City of Roseville decided at some future date to operate these same wells for any length of time beyond what Reason Farms has used them for, it is likely that there could be a tremendous adverse affect on not only our ranching operation, but even our domestic well. Any such increased demand on the existing water table could also impact the other residences of Sunset Blvd. West and Amouroso Way, all of whom are on domestic wells.

(2) In regards to past flooding in our area we have experienced waters two to three feet over the surface of Sunset Blvd. West where the Northern Branch of Pleasant Grove Creek crosses Sunset Blvd. West. At times there has been a current strong enough to erode the chip seal and road base clear down to the top of the culvert pipe. Even when there is less runoff the creek

turns into a lake around our house and barn. Part of this is also due to the fact that when Reason Farms first put in their rice checks they blocked the natural runoff from the northeast (Amorouso's Ranch) forcing it down the southern ditch on our property which turns north and converges with the Northern Branch of the Pleasant Grove Creek directly behind our barn adding to "the lake." Your initial study includes restoring another tributary from the east to its original route. At the scoping meeting we asked if the same consideration might be made for the runoff which Reason Farms diverted on to us.

(3) There was also mentioned at your meeting that part of the capacity of this project would be used to mitigate runoff for a development in Rocklin. This brings up the issue of other sources of runoff, i.e. Sun City Lincoln and the proposed development on Industrial Blvd., all of which will ultimately push water down the Northern Branch of the Pleasant Grove Creek. Is there any communication and cooperation between the city of Lincoln and the city of Roseville regarding future development plans and subsequent run offs?

(4) For the record we would like to note that upon having our property surveyed three years ago by Steve Ourada we learned that our southern boundary is in the middle of the existing roadway on the northern side of Reason Farms. We would expect that the City of Roseville would properly survey the property before commencing construction.

(5)In your study it was mentioned that "the city could retain ownership or ultimately convey ownership to a conservancy agency or another third party." The phrase "other third party" seems awfully open ended to us. We would like the issue of future ownership or management to be more clearly defined, as it could ultimately impact our future property values and ranching business.

(6) Your study also suggests the possible future use of this property for biking and hiking trails. We would like to remind you that this property is still in a designated agricultural area and when you invite the public into this type of area it ultimately clashes with agricultural operations. "The Public" would also impact the wildlife in the area which is already experiencing tremendous pressure from the existing development.

(7) The prospect of using this property for hunting clubs was also mentioned. Historically, we have had a number of problems with the hunting clubs that have leased this property. The hunters have not been monitored by anyone resulting in over hunting of the game and trespassing problems despite signs posted and even electric fencing. Would the city take responsibility for "fencing in" the public?

(8) On the maps in your study you indicated the existence of an easement road from Sunset Blvd. West to Reasons Farms. As we explained at the scoping meeting this road no longer exists. When we purchased our property 29 years ago we shared this farm road with the Mourier Brothers. In time we built a road base and gravel road on our side of the fence and the Mouriers began plowing and disking the ground where the road had been. The driveway we then shared only extends back as far as our barn. This road also passes within 20 feet of our house and would not be acceptable as an access for construction vehicles or "the public." The rest of the roadway that originally extended another ¼ mile south to Reasons Farms was destroyed by their bank out wagons during an exceptionally wet harvest when the Reason Farm bridge on Pleasant Grove Creek washed out. Amarels never attempted to repair the roadway and oak and willow trees have grown up in it since. The entire Mourier property which included the old farm road has been fenced off for cattle grazing for the past 5 years, since Russell Mourier retired from farming, and is still disked each year for a fire break.

We would appreciate a response to our concerns in your next report or meeting. Thank you for your cooperation.

Sincerely,

Jim Gleason
Gaynell Gleason

PLACER COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Tim Hackworth, Executive Director
Brian Keating, District Engineer
Andrew Darrow, Development Coordinator

August 21, 2002

Mr. Mark Morse
Engineering Department
City of Roseville
311 Vernon Street
Roseville, CA 95678

RE: Initial Study City of Roseville Retention Basin Project

Dear Mark:

Thank you for the opportunity to review and comment on the subject study. The Placer County Flood Control and Water Conservation District (District) has the following comments for your consideration:

1. The District requests a copy of the Final Conceptual Design Report (PWA/URS) be mailed to our attention for review. This report will likely assist in addressing some of the hydraulic design concerns raised by the review of this initial study.

2. No reference is made to the District's 1993 dated Watershed Study of Auburn Ravine, Coon and Pleasant Grove Creeks in which a recommendation for a regional retention site in the vicinity of the Reason Farms location along Pleasant Grove Creek was originally made. Section 2.4, Project Objectives, should be revised to make such a reference and to address how this project benefits the overall watershed by working towards the specific 3600 acre-feet of total retention volume recommended in the 1993 study.

3. The proposed project would occur within the jurisdiction of the District, and as such, the requirements found within the District's 1990 dated Stormwater Management Manual (SWMM) should be referenced and included as an objective to meet within Section 2.4. Specifically, this report needs to address the requirements of Section VII within the SWMM regarding storage facility designs. Additionally, the hydrologic assumptions and hydraulic modeling requirements from the SWMM should have been referenced within this study as well as the Final Conceptual Design Report. The District cannot comment on the accuracy of peak flow and water surface elevation changes resulting from the project without an understanding of the basis of the data and storm event assumptions utilized.

4. While the subject of peak flow and stage reduction over a wide range of storm events is addressed within this study, the benefits provided towards the reduction of total volume of flow at locations downstream of the project is not well presented. The planned operation of the basin appears to best fit the operations of a traditional off-channel detention basin rather than a retention basin, although the length of detention time for stored water within the basin is not well defined. There are no estimates provided of the amount of water lost to evaporation or to infiltration into the ground during the period when water is stored. It is recommended that a more detailed discussion of how the project ultimately meets the objective of Section 2.4 for the retention of increased runoff volumes be presented. It is also recommended that the reduction in total volume of flow provided by the project be presented at the downstream Sutter County/Placer County limits and other appropriate downstream locations.

PLACER COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Tim Hackworth, Executive Director
Brian Keating, District Engineer
Andrew Darrow, Development Coordinator

5. The reduction in water surface elevations realized (Table 3-15) from the project will likely require a Letter of Map Request (LOMR) application be filed by the City through the Federal Emergency Management Agency (FEMA) to document resulting changes to the 100 year flood plain boundaries. A reference to this future requirement should be made in the study.

6. The proposed operation of the outlet gate is presented as a telemetry transmission from the City's flood warning operations center. A more detailed discussion of the conditions within the creek, and the stream gage information referenced in making the decision to operate the gate should be presented. It is suggested that the City present this type of detailed information to Sutter County, Reclamation District 1000/1001 and the District for their review and concurrence. A discussion of how the transmission would occur at times other than normal business working hours should be made. Operational concurrence will help avoid the potential for resulting litigation should a disagreement on the manned operation of the gate occur in the future.

7. Per the Draft EIR report dated October 2001 (EIP), the Sunset Ranchos development will generate an additional 260 acre-feet of volume run-off during an 8 day, 100-year event. Table 2-2 within the study indicates this volume will be 180 acre-feet. Please explain this discrepancy.

8. Section 2.9 should include the requirement for a Placer County grading permit.

9. The discussion of biological impacts to existing plant communities is very limited in the study, with little discussion of existing native and non-native species. A re-vegetation plan to introduce native plant species to the restored riparian corridor and disturbed agricultural areas should be addressed along with details on plant establishment procedures.

Should you have any questions or concerns please do not hesitate to contact me at 530-889-7592.

Sincerely,

E. Brian Keating, P.E.
District Engineer

cc: Andrew Darrow
Tim Hackworth
Wes Zicker
Mike Foster
Chron

STATE OF CALIFORNIA - THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME
SACRAMENTO VALLEY AND CENTRAL SIERRA REGION
1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CALIFORNIA 95670
Telephone (916) 358-2900

GRAY DAVIS, Governor

RECEIVED
SEP 23 2002
Community Development Dept

September 4, 2002

Mr. Mark Morse
Environmental Coordinator
City of Roseville
311 Vernon Street
Roseville, CA 95678

Dear Mr. Morse:

The Department of Fish and Game (DFG) has reviewed the Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the City of Roseville Retention Basin Project. The project proposes to construct an offstream retention basin along Pleasant Grove Creek designed to attenuate flood impacts from urbanization within portions of west Placer County. The project site encompasses about 1500 acres, of which about 519 acres would be infrequently flooded. The proposed flood basins are currently under rice cultivation. The site is located west of the city limits of Roseville, Placer County.

The DFG recommends the following be included within the DEIR:

1. Clarify whether revegetation calculated to occur within low flow channels within the flood basins will be achieved via active restoration or passively through natural colonization. Further discuss specific efforts to monitor riparian restoration and creation.

2. Further expand upon measures designed to avoid fish entrapment. Include within this discussion, specific literature supporting construction efforts designed to reduce this potential project impact.

3. Evaluate the feasibility of removing the existing levee system along Pleasant Grove Creek. This could provide a source for the detention basin levee system, while substantially increasing benefits to riparian and stream resources by expanding the existing floodplain.

Thank you for the opportunity to review this project. If we can be of further assistance, please contact Mr. Jeff Finn at (530) 477-0308 or Ms. Terry Roscoe, Environmental Services Supervisor at (916) 358-2382.

Sincerely,

Larry L. Eng, Ph.D.
Deputy Regional Manager

cc: Ms. Terry Roscoe
Mr. Jeff Finn
Department of Fish and Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

B-3

CITY OF ROSEVILLE'S RESPONSES TO COMMENT LETTERS RECEIVED ON NOTICE OF PREPARATION

CITY OF ROSEVILLE
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Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

Stan Tidman, Senior Planner
Placer County Transportation Planning Agency
550 High Street, Suite 107
Auburn, CA 95603

Re: Proposed City of Roseville Retention Basin Draft EIR

Dear Mr. Tidman:

Thank you for PCTPA's comments regarding the City of Roseville's Notice of Preparation of an Environmental Impact Report and Initial Study for the above-referenced project.

The City of Roseville is aware of the current status of PCTPA's corridor-level design and environmental analysis for Placer Parkway. On page 22, the Initial Study for the retention basin considered the conceptual alignments identified in the Placer Parkway Project Study Report (DKS Associates, June 2001), and determined that the proposed retention basin design could accommodate either of the two alternative corridor alignments that cross the proposed project site. This is graphically illustrated on Initial Study Figure 2-12 following page 22.

Section 2.5.5 of the Initial Study identifies certain environmental protection measures that have been incorporated into the proposed project, including protection and restoration of riparian habitat and oak woodlands, and enhancement of habitat linkages. Section 2.6 of the Initial Study also identifies potential opportunities for future uses that, although not possible to implement by Roseville with fees earmarked solely for the retention basin, could include additional protection of open space and important habitats on the site. Since an alignment for Placer Parkway has not yet been determined, further analysis of ways to promote open space opportunities between the two proposed facilities is not warranted within the scope of the Draft EIR for the retention basin. However, the City remains interested in mechanisms that will promote preservation of open space on the site and looks forward to working with PCTPA to achieve this within the context of PCTPA's project at the appropriate time.

We will include PCTPA on the distribution list for the Draft EIR, as requested.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

CITY OF
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Community Development
311 Vernon Street
Roseville, California 95678-2649

FAXED 9/12/02 dld

Post-it Fax Note R7673 | Date 9-12-02 | # of pages 2
To Ken Friedman
Fax# 1-415-383-6323
From City of Roseville
Phone# 1-916-746-1300

September 10, 2002

To: Ken Friedman, Owner
Parcel # 017-100-041
By FAX: 415-383-6323

Re: Your FAX August 8, 2002
Re: Retention Basin Study (Parkway Alignment Considerations)

Dear Mr. Friedman:

Thank you for your August 8, 2002 communication regarding the City of Roseville Retention Basin, and its relationship to a future Placer Parkway alignment. As noted in the text on the page facing Figure 2-12 which you enclosed with your FAX, several *conceptual* (emphasis added) alignments for Placer Parkway have been identified. These conceptual alignments were the result of a several-years-long planning effort, documented in a report entitled, "Analysis of Alternative concepts for Placer Parkway (DKS Associates, June 1999), and in a Project Study Report (DKS Associates, June 2001). Input to the conceptual alignments identified through this process included three separate committees that were established by Placer County Transportation Planning Agency (PCTPA): (1) a Policy Advisory Committee, consisting of four members from the PCTPA's board and three members for the Sacramento Area Council of Governments (SACOG); (2) a Study Advisory Committee (SAC) consisting of representatives from key stakeholder groups in the corridor study area, and (3) a Technical Advisory Committee consisting of the staff representatives from local jurisdictions and regional/state agencies.

The conceptual alignments identified in the Project Study Report were approved for further evaluation by both PCTPA and SACOG, and therefore represent the best current information on potential locations for Placer Parkway. The final alignment of Placer Parkway has not yet been determined, and will be subject to a separate corridor-level stage of design and environmental assessment just now being initiated by PCTPA. Undoubtedly, potential alternative alignments identified by others such as the West Roseville Specific Plan (WRSP) developers will be incorporated into the alignment evaluation conducted by PCTPA.

We would note that the WRSP does not propose to extend Watt Avenue to Blue Oaks Boulevard, but considers the circulation effects of such an intersection should the decision to extend Watt Avenue be made (by others). This issue will also likely need to be considered in the PCTPA analysis of Placer Parkway. In any case, the proposed retention basin design does not conflict with existing conceptual alignments for Placer Parkway, a future Watt Avenue/Blue Oaks intersection, WRSP accommodation for a future Placer Parkway, or the alternative alignment you forwarded to me. The City of Roseville will not be advocating a Placer Parkway alignment as part of the retention basin project. We urge you to communicate your concerns directly to PCTPA.

Thank you for your review of the Initial Study.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

CITY OF
ROSEVILLE
TRADITION·PRIDE·PROGRESS

Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

Ms. Mary Keller
Deputy Director - Water Resources
Sutter County Public Works Department
1160 Civic Center Blvd.
Yuba City, CA 95993

Re: Proposed City of Roseville Retention Basin Project

Dear Ms. Keller:

Thank you for your comments regarding the City of Roseville's Notice of Preparation of an Environmental Impact Report for the above-referenced project. We have reviewed your comments and provide the following information, numbered consistent with your comments:

1. The proposed project is intended to reduce the volume of runoff entering Sutter County from the City of Roseville. The project will not solve Sutter County's historic problem with flooding. Rather the project is intended only to mitigate for the impact of increased runoff volume emanating from the City of Roseville due to development within the City of Roseville. However, as can be seen from Tables 3-14 and 3-15 of the Initial Study, the basin will tend to slightly decrease flood elevations and flow rates in Pleasant Grove Creek at the west boundary of the site.

   The operation of the basin is described in Sections 2.5.2 through 2.5.4 of the Initial Study. All gates on the basins would normally be in the open position. The gates would automatically be closed when conditions in Sutter County are such that storage of water by the retention basin could be beneficial to Sutter County. Closure of the gates would not necessarily mean that Sutter County would receive any tangible flood relief benefit if there were not sufficient flow generated by the Pleasant Grove Watershed. Capture of water by the North Basin would require some level of flow in Northern Tributary Two. Capture of water by the South Basin would require that flows within Pleasant Grove Creek be higher than the flow level that would be expected during about a one to two-year event.

   Specific operational parameters will be developed as part of the final design process and documented in an Operation and Maintenance Plan. At this time, it is thought that a stream gage would be installed at the Union Pacific Railroad Crossing of Pleasant Grove Creek about 1.75 miles west of the Sutter/Placer County line. The purpose of the gage would be to signal the gates to close when water began spilling out of the main channel. In any case, the City expects to work cooperatively with Sutter County to develop specific operational criteria that meet the project's objective to mitigate for the increase in runoff volume caused by development within the City of Roseville.

2. There is no evidence or analysis that indicates that flows within Northern Tributary Two or Pleasant Grove Creek frequently overtop their banks and sheet flow across the existing agricultural fields at the project site. Conversely, technical analysis prepared for this project indicates that flows, under existing conditions, would only overtop the banks during about a 100-year event and then, only by a small amount. Immediately east of the South Basin lies an area that currently experiences sheet flow and functions as a floodplain; this function would continue with the proposed project.

   Even if, as asserted, the existing site already provided some level of flood relief, the proposed project enhances the ability of the site to provide flood relief to Sutter County. This is illustrated in Tables 3-14 and 3-15 of the Initial Study referred to above. Values in the tables reported for the 2- through 100-year frequency storms are with the gates in the normally open position. With the gates closed, the proposed project would hold a volume of water until flood levels in Sutter County recede. The existing site conditions would not provide this benefit.

3. The project is intended to mitigate for runoff emanating from those portions of the City that cause runoff that ultimately flows into Sutter County. In Table 2-2, the line entitled, "Existing and Entitled Development" includes areas of the City that are within the boundaries of the Cross Canal Watershed but not necessarily within the boundaries of the Pleasant Grove Creek Watershed. All portions of the City of Roseville lying within the Cross-Canal Watershed are shown in Appendix I of the Master Drainage Study for Fiddyment/Westpark Properties (Wood-Rodgers, 2001), which is available at the City of Roseville Public Works Department. The project would also provide an increment of excess storage (180 acre-feet) that could be made available to the City of Rocklin should Rocklin choose to participate in this project. The project is not intended to and would not mitigate for peak flow rates emanating from specific development projects. Rather, the City of Roseville requires development projects to incorporate mitigation to reduce the post-development peak rate of runoff to no more than the pre-development runoff rate.

4. Table 3-13 in the Initial Study identifies the soil types at the project site. Based on this information, it appears that the soils will be suitable for the intended purpose. The Initial Study identifies that the project would be under the jurisdiction of the Department of Safety of Dams (DSOS). The DSOD routinely requires site specific geotechnical investigations. Nevertheless, the Initial Study also identifies Mitigation Measure G- 1 which requires that a site specific Geotechnical Investigation be conducted as part of final project design.

   The conceptual design report includes a cost line item for maintenance of the project. An operation and maintenance plan will also be required by the DSOD.

5. A low level weir was contemplated during development of the conceptual design. However, it was determined during the Screening Level Evaluation that this type of inlet control was not economical. A low level weir fixes the maximum storage pool elevation. Water would only be retained below the top of the low level weir. As such, the entire storage volume at the site

would need to be developed by excavation. This fact made the low level weir concept financially infeasible.

Unlike a more traditional detention or retention basin, the proposed project is intended to provide intermittent, long-term storage of water. More traditional basins provide storage with every storm and are fairly efficient sediment traps.

Geomorphic trends and sediment transport to and through each basin were considered during development of the project. This analysis is presented in the conceptual design report and indicates, using conservative assumptions, that sedimentation within the basins would not be expected to be an operational concern. The South Basin bypass channel and the North Basin low flow channel, would, to the maximum extent practicable, be designed to convey sediment through the basins. The proposed operational regime of normally open gates would help facilitate this by keeping the sediment trapping efficiency of the basins as low as possible. Frequent closure of the gates would tend to make the basins into more efficient sediment traps, thereby increasing the potential need and frequency for sediment removal. The intent is for the facilities to be automatic and not require constant attendance during storm events.

6. See Response to No. 1, above. The City will consult with Sutter County during development of the operational criteria included in the Operation and Maintenance Plan.

7. The minimum top width of the embankments was set in accordance with DSOD requirements.

8. The trash racks are intended to capture and prevent large debris from blocking the gates. Flow velocities through the gated structure will be higher than anywhere else in the system, therefore, sufficient energy will be present to allow sediments to be efficiently carried through the trash rack and structure.

9. As noted in the Initial Study, pedestrian trails would not be constructed as part of the proposed project, but is noted as a potential future amenity that could be constructed in the future by the City or others as part of a separate project. The use of bark on pedestrian trails will be evaluated at such time as such a project is identified. Your comment will be considered at that time.

10. The proposed retention facility was not designed to provide mitigation for storm water runoff that might be created by the referenced transportation facility, Placer Parkway. The retention basin was sized based upon a list of existing and potential future development requirements, as well as design considerations consistent with the fee mitigation program and minimization of environmental impacts. Depending on approval of future projects and direction by the City of Roseville, the retention basin could provide mitigation for other projects potentially including some or all of a future Placer Parkway.

Please note that an alignment for Placer Parkway has not yet been determined, and the facility has not yet been designed, even at a conceptual level. As noted in the Initial Study text on page 22, several conceptual alignments for Placer Parkway have been identified in a report entitled, "Analysis of Alternative concepts for Placer Parkway" (DKS Associates, June 1999), and in a subsequent Project Study Report (DKS Associates, June 2001). The determination of a preferred alignment will be subject to a separate corridor-level stage of design and environmental assessment just now being initiated by Placer County Transportation Planning Agency (PCTPA). The outline and scope of work identified in Appendix C of the DKS Project Study Report states the following:

> "Drainage and flood control issues will be addressed in each of the alternate alignment analyses as well as any project screening considerations. Any major irrigation facilities that are potentially impacted by a parkway alignment will be discussed with the appropriate irrigation district to better assess project impacts. FEMA flood plain maps will be reviewed to determine where the proposed parkway alignments cross through the 100-year flood plains. At these locations the parkway will be configured so as to not impact the existing floodwaters. If a portion of the parkway needs to be elevated substantially above the adjacent ground, provisions in the construction cost estimates will be made to address the additional embankment to elevate the parkway profile as well as the necessary culverts/bridges to pass the flood flows unimpeded through the Parkway corridor."

The environmental assessment for the Placer Parkway will evaluate the effects of its proposed drainage/runoff, and, if feasible, identify mitigation measures to reduce impacts to less than significant levels.

11. Levee and stability design is one among many of the design features requiring DSOD approval as part of the application for construction.

Thank you very much for taking the time to come to the City Council briefing and the agency scoping meeting, and for your thorough review of the NOP and Initial Study. The City of Roseville looks forward to continued cooperation with Sutter County as this project moves forward.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

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Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

Stephen W. Verigin, Chief
Division of Safety of Dams
901 P. Street
Sacramento, CA 95814

Re: Notice of Preparation of a Draft Focused Environmental Impact Report and Scoping Meeting
Proposed City of Roseville Retention Basin Project
SCH #2002072084

Dear Mr. Verigin:

Thank you for your comments regarding the City of Roseville's Notice of Preparation of an Environmental Impact Report for the above-referenced project.

The City of Roseville's Initial Study has noted the requirement to comply with DSOD requirements, including your approval of an application for construction of the dam and compliance with inspection requirements (page 23 of the Initial Study).

We will coordinate design with your Design Engineering Branch Chief commencing at the 60 percent design level in accordance with your application for construction requirements. Please note that this may be some years in the future, since the project would be funded through an existing fee collection program.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

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Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

Fred Barnett
Reclamation District No. 1001
1959 Cornelius Avenue
Rio Oso, CA 95674

Re: Notice of Preparation and Initial Study
City of Roseville Retention Basin

Thank you for your comments regarding the City of Roseville's Conceptual Design Report and Initial Study for the above-referenced project. As described in the Notice of Preparation included with the Initial Study, the City intends to prepare a focused Environmental Impact Report for the proposed project.

We have reviewed your comments and provide the following information:

Site Expansion: Finding a suitable retention basin site has been challenging, and the proposed project is the culmination of several years of evaluation of potential suitable sites. However, the proposed project is intended to provide retention storage for the City of Roseville to mitigate increased runoff volume generated as a result of development within the City of Roseville. The project is not intended to be a solution to regional flooding, but rather to address the City's share of the regional problem. The retention basin could, in the future, be expanded to provide retention storage for other areas of Placer County, potentially including the Sunset Industrial Area and/or the City of Rocklin. If the basin were to be expanded in the future, the expansion would require environmental analysis and documentation as part of a separate environmental process.

Hydrologic Basis: Retention volume estimates were derived using methodologies previously accepted by Sutter County as the basis for sizing a regional retention basin for the City of Lincoln. The analysis was based on previous hydrologic modeling of the Cross Canal watershed. The underlying studies include the *Auburn Ravine, Coon and Pleasant Grove Creeks Flood Mitigation Plan, June 1993 (CH2Mhill, 1993),* the Master Drainage Study for Fiddyment/Westpark Properties, November 2001 (Wood-Rodgers, Inc., 2001), the Summary Report for Proposed Retention Basin at Reason Farms by Wood-Rodgers, Inc. and Wade Associates dated March, 2001, and the Pleasant Grove Watershed Mitigation Fee report for the City of Roseville by Civil Solutions dated May 5, 2000 and its amendment dated May 18, 2000. These studies provide the best available information from which to develop the hydrologic analysis for the proposed project.

The first study (CH2MHill, 1993) was prepared for the Placer County Flood Control and Water Conservation District. The study's purpose was to examine regional flooding issues. The study quantified the increase in runoff volume associated with urban development and determined that,

with full build-out of expected urban areas in Placer County, flood levels in Sutter County could increase on the order on 0.1 feet.

The second and third studies (Wood-Rodgers, 2001) updated the CH2MHill study to include the most current information available on urban development within the Pleasant Grove Creek Watershed. This update was required to account for urbanization of certain areas not considered in the CH2MHill Study, including areas west of the current Roseville city limits.

The fourth study, including its amendment (Civil Solutions, 2000) uses analysis similar to the work prepared for the proposed project. It used the 1986 eight-day storm for the purpose of identifying regional retention basin mitigation fees for the City of Roseville and to identify potential retention basin facility options and costs.

Finally, PWA, as part of the engineering analysis supporting the proposed project, modified the Wood-Rodgers model of Pleasant Grove Creek so that it could be used to evaluate the eight-day, 100-year storm event, the event specified by Sutter County for use in sizing the City of Lincoln's retention basin. The eight-day event simulated by the model is consistent with the precipitation distribution used by Civil Solutions, 2000 and, as cited in that report, is based on actual precipitation measurements during the eight highest precipitation days in mid-February, 1986 as measured at the City of Roseville Water Filtration Plant. The precipitation values were then adjusted so that the sum of the values would equal the 100-year precipitation amounts specified in the Placer County Stormwater Management Manual (SWMM).

Operation of the Facility: Operation of the basin inlet and outlet gates is described in Section 2.5.2 through 2.5.4 of the Initial Study and in Sections 2.2 through 2.4 of the Conceptual Design Report. As described therein, the inlet and outlet gates of the South Basin would be in the normally open position. This means that flow from Pleasant Grove Creek will flow through the basin when water levels in Pleasant Grove Creek reach a depth that would be expected to happen once every one to two years. Less frequent storms, the 5-year, 10-year and greater events, would similarly flow through the basin. The North Basin would function similarly to the South Basin except that all runoff-producing events would cause water to flow through the North Basin. Flow would pass through both basins relatively unimpeded when the outlet gates are in the open position. However, the bypass channel on the South Basin and the restored channel on the North Basin would tend to provide an increased volume of water to be on the site, and much like a natural floodplain, would tend to slow flows. This is illustrated in Tables 3-14 and 3-15 of the Initial Study, where, with the outlet gates in the open position, flow rates and flood elevations downstream of the project site tend to be somewhat lower with the proposed project than without the project.

Specific operational parameters will be developed as part of the final design process and documented in an Operation and Maintenance Plan. At this time, it is thought that a stream gage would be installed at the Union Pacific Railroad Crossing of Pleasant Grove Creek about 1.75 miles west of the Sutter/Placer County line. The purpose of the gage would be to signal the gates to close when water began spilling out of the main channel. In any case, the City expects to work

cooperatively with Sutter County to develop specific operational criteria that meet the project's objective to mitigate for the increase in runoff volume caused by development within the City of Roseville.

Because of the complex nature of flooding in Sutter County and the fact that the proposed project is only one component of a regional solution, the most apparent measurement of success is water being stored in the retention basin when Sutter County needs flood relief.

Control of Local Flooding: The project is not intended to and would not mitigate for peak flow rates emanating from specific development projects. Rather, the City of Roseville requires development projects to incorporate mitigation to reduce the post-development peak rate of runoff to no more than the pre-development runoff rate. More frequent operation designed to mitigate local flooding in Sutter County would tend to accumulate sediments and require more frequent maintenance. Further, operating the basin more like a detention facility could mean that basin storage volume would not be available when needed during large storm events, thereby negating the purpose of the proposed project.

HEC 1 Modeling: The development of conceptual design for the project sought to use, to the maximum extent practicable, work products of other consultants prepared for public and private entities. The primary studies relied on are described above. These reports describe the specific parameters used in the models and their appropriateness for use in Placer County as presented in the Placer County Stormwater Management Manual. Other hydrologic models such as TR20 and TR-55 were not considered as the previous work for the Cross Canal Watershed used the HEC-1 model.

The Danish Hydraulic Institute MIKE 11 model was used to route the HEC-1 hydrographs through the project site. The MIKE 11 model is approved by the Federal Emergency Management Agency for use in Flood Insurance Studies to evaluate flood channel and flood plain hydraulics, flood profiles and floodplain mapping. The MIKE 11 model was chosen as an alternative to the U.S Army Corps of Engineers HECRAS model because of an apparent technical glitch in the (then) recently released unsteady version of HECRAS. The flow network and outlet gate configuration caused the HECRAS model computations to cease before reaching completion. The MIKE 11 model was capable of handling the proposed conditions and enabled the successful completion of the hydraulic computations.

The parameters questioned in your letter were used in the studies cited above, and accepted by the Placer County Flood Control and Water Conservation District (PCFCWCD), or the City of Roseville, as applicable. The basic methodologies that established the appropriate parameters are consistent with the Cross Canal Watershed Study prepared for Placer County by CH2MHill to evaluate flood volume impacts to Sutter County and potential retention basin options. You may therefore wish to direct these questions to the PCFCWCD.

Retention Storage and the 100-year, 24-hour Event: Table 2-2 of the Initial Study identifies that the basin would provide a total of 2,530 acre feet of storage. The storage volume is allocated

to various potential users including existing entitled development within the City, potential future development west of the City of Roseville, flood storage for the Pleasant Grove Regional Waster Water Treatment Plant (WWTP) and potential other users that may include the City of Rocklin.

The project is intended to mitigate for runoff emanating from those portions of the City that cause runoff that ultimately flows into Sutter County. In Table 2-2, the line entitled, "Existing and Entitled Development" includes areas of the City that are within the boundaries of the Cross Canal Watershed but not necessarily within the boundaries of the Pleasant Grove Creek Watershed. Further, the storage volume target (2,530 acre feet) is, with the exception of that portion allocated to the Pleasant Grove WWTP and that portion that may be made available to Rocklin, attributable to runoff generated during the hypothetical ***eight-day*** event, not the 24-hour event. Comparing the target storage volume of the project to the volume of runoff produced by the Pleasant Grove Creek watershed during the 100-year 24-hour event, would not, in our opinion, provide any useful information.

Outflow Hydrographs: Pleasant Grove Creek flow hydrographs downstream of the study site for both the existing and proposed project conditions are included in Appendix C of the Conceptual Design Report.

Subbasin Drawings: A subbasin map is included in the Master Drainage Study for Fiddyment/Westpark Properties dated November 2001, prepared by Wood Rogers and available at the City of Roseville's Department of Public Works.

Thank you very much for your careful review of the Conceptual Design Report and the Initial Study. Roseville looks forward to continuing to work cooperatively with RD1001 as the retention basin project moves forward.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

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Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

Sherri Abbas
Planning Services Manager
City of Rocklin
3970 Rocklin Road
Rocklin, CA 95677-2720

Re: Initial Study
Proposed City of Roseville Retention Basin Project

Dear Ms Abbas:

Thank you for your comment regarding the City of Roseville's Notice of Preparation of an Environmental Impact Report for the above-referenced project. We have reviewed your comment regarding the total retention volume requirements for the Northwest Rocklin Annexation Area. The project description will be revised to note that the proposed retention basin design could accommodate a *portion* of the Northwest Rocklin Annexation project's total stormwater retention requirement. The City of Roseville would be pleased to work with the City of Rocklin to develop additional engineering and environmental review documentation if Rocklin decides to use the Reason Farms Retention Basin for flood retention storage in excess of 180 acre-feet.

Roseville looks forward to continued cooperation with the City of Rocklin as this project moves forward.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

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Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

Mr. and Mrs. James Gleason
6495 Sunset Blvd. West
Roseville, CA 95757

Re: City of Roseville Retention Basin

Dear Mr. and Mrs. Gleason:

Thank you for your letter of August 21, 2002, in response to the Notice of Preparation of an Environmental Impact Report, the Initial Study prepared as part of the environmental process, and the scoping meeting which you attended on August 8, 2002.

Our responses to the comments raised in your letter follow. We have numbered them to be consistent with the numbers in your letter.

1. Until such time as the proposed project is constructed, it is likely that on site rice farming would continue and wells would remain in operation consistent with historic trends. After project construction, some amount of on site farming may continue in which case ground water use for agricultural purposes would also continue. During project construction and operation minor amounts (in comparison to historic use) of ground water produced from on site wells may be used for dust suppression, fire prevention and possibly for habitat restoration or other general on site uses. However, it is expected that these project related ground water demands would not exceed historic agricultural uses on the site.

   The long term use of ground water underlying the site is more speculative at this time. Water availability and supply is a crucial issue throughout California. With the acquisition of the Reason Farms site and its existing well field, the City believes it prudent to preserve this potential source of water as may be allowed under California water rights law. Should the City decide to pursue a substantial alternative beneficial use for on site wells and groundwater, that use would be subject to water rights law and additional environmental review as may be necessary.

2. The proposed project is a regional retention facility intended to mitigate the City of Roseville's contribution to flooding in Sutter County caused by development in Roseville. It is not intended to address localized flooding along the Northern Branch of Pleasant Grove Creek. The City is under no legal obligation to rectify existing flooding problems in the vicinity of the Reason Farms site. However, based on your comments regarding flooding on your property, the City has identified an option to restore positive drainage from your property that was interrupted as a result of rice check construction at the Reason Farms site. This option will be analyzed as an additional alternative in the Draft EIR. Inclusion of an alternative in an environmental document does not mean that the alternative would be

constructed. It would, however, analyze the environmental impacts of that alternative, potentially leading to favorable consideration of it.

3. Development projects within the jurisdiction of the City of Roseville are required to provide mitigation that prevents an increase in the peak rate of runoff from the site. Mitigation for runoff volume is provided in the form of fees paid by developers and restricted to the purpose of providing retention storage. This project is designed to provide that retention storage.

   The project could provide up to 180 acre-feet for use by the City of Rocklin if Rocklin should choose to participate in this project. The City of Roseville has been in communication with Placer County, who has indicated an interest in participation but has not yet completed a process that would better define such participation. There has been no communication regarding participation in the retention basin with the City of Lincoln, probably because Lincoln has developed its own retention storage plans. Runoff from Sun City Lincoln does not flow through the North Branch of Pleasant Grove Creek as the area lies outside the boundaries of the Pleasant Grove Creek watershed as shown in Appendix I of the Master Drainage Study for Fiddyment/Westpark Properties (Wood-Rodgers, 2001). This study is available at the City of Roseville Public Works Department.

4. During final design of the North Basin, the north access easement would be surveyed to confirm its position.

5. Please be assured that Roseville is very interested in preserving high-quality open space adjacent to the western boundary of the City, as an amenity which would benefit the citizens of Roseville. The retention basin site would provide such an amenity. At the present time, it is our intent to seek out an entity which would retain and manage the site for its habitat values, either through conservation or as mitigation for impacts of development. However, it is not known whether a suitable entity would be interested in the site and whether such a transaction could be consummated.

   We would like to be able to provide you with a more definitive reply regarding potential future ownership of the retention basin site. However, at the present time, such information would be speculative, as we have not begun discussions with any third parties regarding potential sale of the site. Roseville doesn't yet even own the site, so such discussions would be premature at this point.

6. Public use of the property is addressed in the Recreation section of the Initial Study, and Mitigation Measure R-1 is identified to limit disturbance to the riparian zone of Pleasant Grove Creek or other sensitive habitat. It also requires a public educational program including informative signage. Such signage could also include information about the boundaries between public and private property, trespassing, etc., to reduce conflicts with adjacent agricultural uses.

7. Your concerns are acknowledged in the Public Services section of the Initial Study. The City has not yet determined whether or not hunting would be allowed on the site, once it becomes the property of the City. When owned by the City, the site would be under the jurisdiction of the Roseville Police Department which has the resources to adequately provide service to the site. It is unlikely that the City would consider fencing the site.

8. Based on your input regarding the north access road, reconstruction of this road has been added to the project description, and the environmental impacts of reconstruction will be evaluated in the Draft EIR. It is the intent of the City that the easement be used for construction access for the North Basin and for periodic maintenance and inspection of basin improvements as needed. Any future public use of and access to the site beyond that described for the project may require separate environmental review. Any potential limitations to the use of existing easements for "other uses," including but not limited to public uses, would be reviewed at that time.

The City very much appreciates the time you have taken to review the Initial Study, come to the scoping meeting, and write your August 21, 2002 letter. You were also helpful to the City consultants who visited the site to review the access road condition and your drainage problem. We encourage your continued involvement in this project.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

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Community Development
311 Vernon Street
Roseville, California 95678-2649

September 10, 2002

E. Brian Keating, P.E.
District Engineer
Placer County Flood Control and Water Conservation District
11444 B Avenue
Auburn, CA 95603

Re: Initial Study
Proposed City of Roseville Retention Basin Project

Dear Mr. Keating:

Thank you for your comments regarding the City of Roseville's Notice of Preparation of an Environmental Impact Report for the above-referenced project. We have reviewed your comments and provide the following information:

1. The Final Conceptual Design Report has been sent to you under separate cover. Hopefully this will answer some of the questions you have raised regarding the design and the hydrologic basis for the proposed project.

2., 3. The hydrologic basis of the proposed project is founded on the CH2MHill Study prepared for the PCFCWCD in 1993. It is our understanding that this study is in compliance with the County's Stormwater Management Manual. Compliance with the Manual is understood by the City to be a design requirement rather than an objective of the proposed project. It is true that the proposed project would benefit the overall watershed by working towards the specific retention volume cited in the 1993 study. The project description in the Draft EIR will include a reference to that study and the related benefit to the overall watershed.

4. A wide range of storm events were evaluated in the study. In addition two separate operational scenarios were investigated. First, with the gates in the open position, the 2-, 10-, 25-, 50- and 100-year 24-hour storm hydrographs were routed through the basins. Second, with the gates in the closed position, the 24-hour and the 8-day, 100-year storms were investigated. This study did not attempt to quantify the total volume of storage needed to mitigate for increased runoff from the City of Roseville because this work had previously been performed by other consultants. Rather, the storage provided by the retention basins was evaluated using the fully hydrodynamic computer model MIKE 11.A terrain model of the ground surface was used to generate model cross-section data and computed stage storage relationships. The latter were used to compare with the storage volume computed by the model. The storage provided by the basin is graphically represented in the 8-day, 100-year event hydrograph plot included in Appendix C of the Conceptual Design Report. Sections 2.2 and 2.3 of the Conceptual Design Report identify that the North Basin would have a storage capacity of about 680 acre-feet with the water surface at elevation 75.0 feet and the South Basin would have a storage capacity of 1,850 acre-feet with the water surface at elevation

76.5 feet. The basin configurations are shown on Sheet 1 of 7 in the Figures section of the report. Perusal of model results presented in Table 4 of the Conceptual Design Report shows that the South Basin would reach a maximum water surface elevation of about 77.4 feet; therefore, it is reasonable to conclude that the South Basin would be full after the flood wave has passed the site. Similarly, Table 4 shows that the North Basin would reach a maximum water level of about 74.9 feet, which would be considered full.

The planned operation of the basin does not resemble an offline detention basin because water, once captured, can be held in the basin indefinitely. However, there is no reason to hold water in the basin indefinitely, but rather only until flood waters have receded from Sutter County.

The study did not examine evaporation from the basin or infiltration of water through the basin bottom. However, neither case would be considered particularly relevant to the operation of this basin. First, water lost due to evaporation would not present an additional flood hazard to downstream properties. Second, infiltration would be expected to be minimal given the types of soils at the site, as described in the Initial Study. Low infiltration rates for these soil types are consistent with their suitability for rice farming. With little infiltration, base flows in Pleasant Grove Creek would be expected to remain similar to existing conditions.

The Conceptual Design Report examines points upstream, through and downstream of the site. The hydraulic model results present in Tables 3, 4, 5 and 6 of the report include data at the western boundary of the site. The tables also indicate that the basins would be full after the flood wave has passed through the site. It should be apparent from the analysis that the volume of water remaining in the basins (after the flood wave passes) would not flow through or accumulate at downstream locations. Therefore the reduction in total volume of flow provided at the downstream Sutter/Placer County line and other downstream locations would be identical to the volume reduction provided at the west boundary of the site. In accordance with operational controls described in the report and in the Initial Study, retained water would be held until the flood waters in Sutter County recede, at which time the North and South basin gates would be opened and the basins allowed to drain. Specific operational criteria will be described in a operation plan developed during the final design in consultation with Sutter County. This is discussed further in item 6 below.

5. The City will conform to FEMA map revision requirements at the time of final design and construction.

6. The operation of the basin is described in Sections 2.5.2 through 2.5.4 of the Initial Study. All gates on the basins would normally be in the open position. The gates would automatically be closed when conditions in Sutter County are such that storage of water by the retention basin could be beneficial to Sutter County. The City's entire flood warning system is fully automated and does not require human intervention during non-business hours. Closure of the gates would not necessarily mean that Sutter County would receive any tangible flood relief benefit if there were not sufficient flow generated by the Pleasant Grove Watershed.

Capture of water by the North Basin would require some level of flow in Northern Tributary Two. Capture of water by the South Basin would require that flows within Pleasant Grove Creek be higher than the flow level that would be expected during about a one to two-year event.

Specific operational parameters will be developed as part of the final design process and documented in an Operation and Maintenance Plan. At this time, it is thought that a stream gage would be installed at the Union Pacific Railroad Crossing of Pleasant Grove Creek about 1.75 miles west of the Sutter/Placer County line. The purpose of the gage would be to signal the gates to close when water began spilling out of the main channel. In any case, the City expects to work cooperatively with Sutter County to develop specific operational criteria that meets the project's objective to mitigate for the increase in runoff volume caused by development within the City of Roseville.

7. The project description will be revised to note that the retention basin could accommodate a portion of the Sunset Ranchos development's total stormwater retention requirement.

8. According to Government Code Section 53091, cities and counties are considered mutually exempt from each other's planning and zoning ordinances with respect to city owned property situated within a county and county owned property situated within a city. This is why a County grading permit is not listed in initial study section 2.9.

9. The existing plant communities will be discussed in greater detail in the focused Draft EIR. Please note that as almost all of the area proposed for the retention basin facility is currently being rice farmed, there is very little existing natural vegetation on the areas being impacted except at the inlets and outlets to Pleasant Grove Creek. Mitigation Measures B-3 and B-4 in the Initial Study address revegetation with native plants. It is the intent of the City to otherwise allow the restored riparian corridor to repropagate naturally, although it would be open to a separate project to restore native habitat to this area. The City's fee mitigation program cannot be used for this purpose unless required as mitigation for project impacts, which it is not.

Thank you very much for your thorough review of the NOP and Initial Study. The City of Roseville looks forward to continued cooperation with the PCFCWCD as this project moves forward.

Sincerely,

MARK MORSE
Environmental Coordinator
Department of Community Development

RAUL CERVANTES
Associate Engineer
Department of Public Works

APPENDIX C

APPENDIX C

EMISSION CALCULATIONS

Vehicle Exhaust

Vehicle Exhaust From Construction Worker Trips

Equation

E= EF*VMT
where
E= Emissions (g)
EF = Emission Factor (g/mi)
VMT=vehicle miles traveled

Assumptions

Number of Worker Cars=	65	
Average Miles Traveled/one way trip=	10 mi	Assume traveling from Roseville
Season=	winter	
Vehicle Mix=	75% LDA	
	25% LDT	
Year=	2004	
Model=	emfac2000 v2.2	
Region=	Placer County	

Calculations

	Units	ROG	NO_X	PM_{10}	CO
Emission Factors-LDA	g/mi	0.89	0.67	0.04	7.39
Emission Factors-LDT1	g/mi	1.72	1.22	0.03	15.7
Weighted Average Emission Factors	g/mi	1.10	0.81	0.04	9.47
Total Miles	mi/day	1,300	1,300	1,300	1,300
Emissions	g/day	1,427	1,050	49	12,308
Total Emissions	lb/day	3.15	2.31	0.11	27.14

LDA = Light-Duty Automobiles
LDT = Light-Duty Trucks

Equipment Exhaust

Construction Equipment Exhaust

Equation

ROG, NO_X, PM_{10}, and CO Emissions

E= EF*N

where

E= Emissions (lb)

EF = Emission Factor (lb/day)

N = Number of Pieces of Equipment

SO_X Emissions

E=EF*M

where

E=Emissions

EF=Emission Factor (lb/yd^3)

M=Amount of material moved (yd^3)

Calculations

ROG, NO_X, PM_{10}, and CO Emissions

Equipment	Number of Pieces	Emission Factors (lb/day)			
		ROG	NO_X	PM_{10}	CO
Scraper	15	3.64	26.86	1.04	26.94
Grader	2	1.76	11.46	0.4	14.21
Bulldozer	6	3.66	31.01	1.32	24.07
Water Truck	4	3.6	23.42	0.82	29.03
Excavator	2	1.84	10.96	0.36	15.64
Compactor	4	1.84	15.6	0.67	12.11
Concrete Mixer	1	3.6	23.42	0.82	29.03
Trucks	2	3.6	23.42	0.82	29.03
Forklift	2	0.79	4.68	0.15	6.7

Source: SMAQMD Draft CEQA Guidelines, September 2001. Assuming work commences in 2004

SO_X Emissions

Emission Factor	4.6	grams per cubic yard
Earth Moved	18,000	cubic yard per day
Emissions	82,800	grams per day
	183	pounds per day

Source: BAAQMD CEQA Guidelines, December 1999

Summary

Equipment	Emissions (lb/day)				
	ROG	NO_x	PM_{10}	CO	SO_X*
Scraper	54.60	402.90	15.60	404.10	
Grader	3.52	22.92	0.80	28.42	
Bulldozer	21.96	186.06	7.92	144.42	
Water Truck	14.40	93.68	3.28	116.12	
Excavator	3.68	21.92	0.72	31.28	
Compactor	7.36	62.40	2.68	48.44	
Concrete Mixer	3.60	23.42	0.82	29.03	
Trucks	7.20	46.84	1.64	58.06	
Forklift	1.58	9.36	0.30	13.40	
Total	117.90	869.50	33.76	873.27	182.57

* Detailed SO_X emissions are listed above summary tables.

Basin Excavation

Description: Fugitive Dust Emission From Basin Excavation

Type of Activities

1. Excavation of 18,000 cubic yards per day (740,000 cubic yards total)
   - A. Mass Grading of low-flow channel and bypass channel using scrapers (15).
   - B. Fine Grading of low-flow channel and bypass channel using graders and bulldozers.
2. Most material will be taken directly to new embankment. Stockpiles of topsoil will also be created to cover a maximum of 500,000 square feet in a day.

Note: Assuming total emissions during excavation equivalent to using all scrapers for excavation. Stockpiles will be relatively flat.

Fugitive Dust From Grading/Excavation (Using Scrapers, bulldozers, and graders)

Dust Emission Factor

EF= 0.037 lb per ton

Source: AP-42 5th Edition, Table 11.9-3 (EPA 1998)
64% of Total Suspended Particulates is PM_{10}
(Per BAAQMD CEQA Guidelines, 1999)

Assumptions

Assuming emissions equivalent to case of using all scrapers since majority of work done by scrapers.

Soil Density	1.59	tons per cubic yard
Material Excavated	18000	cubic yard per day
	28620	tons per day

Calculations

Dust Emissions: 1062.4 lbs/day No Control

Wind Erosion of Stockpiles

Dust Emissions

$E = EF * A$

$EF = k*P*N$

$P = 58*(u^*-u^*_t)^2 + 25*(u^*-u^*_t)$

$P=0$ if $u^* <= u^*_t$

$u^* = 0.053u^+_{10}$ for large flat piles with a height to base ratio <= 0.2

where

A = area disturbed (m^2)
E = Emissions (g/day)
EF = emission factor (g/(m^2-day))
k = particle size multiplier
N=number of disturbances over area per day
P = erosion potential (g/(m^2-day)) for each disturbance
u^* = friction velocity (m/s)
u^*_t = threshold friction velocity (m/s)
u^+_{10} = fastest mile at reference anemometer height of 10m

Source: AP-42 5th Edition, Section 13.2.5 (EPA 1995)

Assumptions

Relatively flat piles

k=	0.5		Source: AP-42 5th Edition, Section 13.2.5 (EPA 1995)
u^+_{10} =	40	mph	Assuming construction activity to be stopped if gust winds reach 40 mph
	17.9	m/s	
u^*_t=	1.02	m/s	Source: AP-42 5th Edition, Section 13.2.5 (EPA 1995)
A=	46450	m^2/day	500,000 square feet
N=	2		Each area is disturbed once when filled and once when removed per day.

Calculations

u^* (m/s)	P (g/(m^2-day)	Emissions (g/day)	Emissions (lb/day)
0.9487	0	0	0

IF $u^* <= u^*_t$, P=0

Total Emissions= 0 With No Control
(Assuming no activity if winds > 40 mph)

Basin Excavation

Summary of Basin Excavation Emissions

PM_{10}	Uncontrolled (lb/day)	With control(lb/day)	
Grading	1062.37	531.19	50% Control
Stockpiles	0.00	0.00	50% Control
Total	1062.37	531.19	

Embankments

Description: Fugitive Dust Emissions from Formation of Embankments

Type of Activities

1. Clear area of vegetation and stockpile topsoil.
2. Excavate and compact key trench when needed.
3. Fill and compact embankment using scrapers and compactor.

Notes: Assume clearing of vegetation does not occur at the same time as activities 2 and 3.
Assume excavation of key trench is already taken into acount in basin excavation calculation.
(Excavated trench material will be less than 5% of total basin excavation.)

Fugitive Dust From Unloading of Scrapers (Using Scrapers)

Dust Emission Factor

EF= 0.0256 lb per ton — Source: AP-42 5th Edition, Table 11.9-4 (EPA 1998)

Assume equivalent to all equipment being scrapers

Assumptions

64% of TSP is PM_{10} (Per BAAQMD CEQA Guidelines, 1999)

Soil Density	1.59	tons per cubic yard
Material Unloaded	18000	cubic yard per day
	28620	tons per day

Calculations

Dust Emissions	733	lbs/day	No Control

Fugitive Dust from Compacting

Dust Emission Factor

$E = EF * H$

$EF = k * s^{1.5} / M^{1.4}$

where

E= emissions (lbs/day)
EF= emission factor (lbs/hr)
H= Hours of operation (hrs/day)
k= factor to determine PM_{10}
M= moisture content of material (%)
s= silt content of material (%)

Source: AP-42 5th Edition, Table 11.9-1 (EPA 1998)

Assumptions

k=	0.75	Source: AP-42 5th Edition, Table 11.9-1 (EPA 1998)
s=	6.9 %	Source: AP-42 5th Edition, Table 11.9-3 (EPA 1998)
M=	7.9 %	Source: AP-42 5th Edition, Table 11.9-3 (EPA 1998)

Equipment	Number of Pieces	Daily Use (hr/day)
Compactor	3	8
	Total	24

Calculations

EF=	0.75	lbs/hr	
E=	18	lbs/day	No Control

Summary of Embankment Emissions

PM_{10}	Uncontrolled (lb/day)	With control(lb/day)	
Unloading of Scrapers	732.67	366.34	50% Control
Compacting	18.00	3.60	80% Control
Total	750.67	369.94	

Unpaved Roads

Description: Fugitive Dust Emissions From Travel on Unpaved Roads
During construction of the inlet and outlet structures, 15 concrete trucks drive onto site. The access road to the north basin is unpaved. Conservatively assume all concrete trucks coming from this north access road.

• Vehicle Re-Entrained Dust

Dust Emissions for Unpaved Roads

$E=EF*VMT$

$EF=2.6*(s/12)^{0.8}*(W/3)^{0.4}/(M/0.2)^{0.3}*(365-p)/365$

where
E=Emissions (lb/day)
EF=Emission factor (lb/vmt)
M=surface material moisture content (%)
p=number of days with at least 0.254mm of precipitation per year
s=surface material silt content (%)
VMT=vehicle miles traveled/day
W=mean vehicle weight (tons)

Source: AP-42 5th Edition, Section 13.2.2 (EPA 1998)

Assumptions

s=	4.3	%	Source: AP-42 5th Edition,Table 11.9-3 average (EPA 1998)
W=	25	tons	Average Weight(loaded weight is 33 tons)
M=	2.4	%	Source: AP-42 5th Edition,Table 11.9-3 average (EPA 1998)
p=	60	days	Source: AP-42 5th Edition,Figure 13.2.2-1 (EPA 1998)
VMT=	15	miles	15 truck round trips/day, 1 mile on unpaved roads/round trip

Calculations

EF=	1.06	lb/VMT	
E=	15.9	lbs/day	No Control

• Summary of Backfill Emissions

PM_{10}	Uncontrolled (lb/day)	With control(lb/day)	
Unpaved Roads	15.90	7.95	50% control

APPENDIX D

APPENDIX D

SPECIAL STATUS SPECIES
THAT MAY OCCUR IN THE PROJECT VICINITY

TABLE OF CONTENTS

D-1 Letter from the U.S. Fish and Wildlife Service dated December 17, 2001, with a list of Endangered and Threatened Species that May Occur in the Pleasant Grove and Roseville Quads

D-2 Listed, Proposed, Species of Concern, and Candidate Species that May Occur in the Vicinity of the Reason Farms Retention Basin Project Area

D-3 Plant Species Observed on the Project Site and Immediate Vicinity

D-4 Wildlife Species Observed on the Project Site and Immediate Vicinity

D-1

LETTER FROM THE U.S. FISH AND WILDLIFE SERVICE DATED DECEMBER 17, 2001

ENCLOSURE A

Endangered and Threatened Species that May Occur in
or be Affected by Projects in the Selected Quads Listed Below
Reference File No. 1-1-02-SP-0454

02-SP-454 Reason Farms Retention Basin, URS, J. Pretare

December 13, 2001

QUAD : 528C PLEASANT GROVE

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

Proposed Species

Birds

mountain plover, *Charadrius montanus* (PT)

Candidate Species

Birds

Western yellow-billed cuckoo, *Coccyzus americanus occidentalis* (C)

Fish

Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)

greater western mastiff-bat, *Eumops perotis californicus* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

grasshopper sparrow, *Ammodramus savannarum* (SC)

short-eared owl, *Asio flammeus* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

Aleutian Canada goose, *Branta canadensis leucopareia* (D)

Swainson's hawk, *Buteo Swainsoni* (CA)

ferruginous hawk, *Buteo regalis* (SC)

Lawrence's goldfinch, *Carduelis lawrencei* (SC)

Vaux's swift, *Chaetura vauxi* (SC)

black tern, *Chlidonias niger* (SC)

white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

greater sandhill crane, *Grus canadensis tabida* (CA)

loggerhead shrike, *Lanius ludovicianus* (SC)

Lewis' woodpecker, *Melanerpes lewis* (SC)

long-billed curlew, *Numenius americanus* (SC)

white-faced ibis, *Plegadis chihi* (SC)

bank swallow, *Riparia riparia* (CA)

rufous hummingbird, *Selasphorus rufus* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

QUAD : 528D ROSEVILLE

Listed Species

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

vernal pool tadpole shrimp, *Lepidurus packardi* (E)

Proposed Species

Birds

mountain plover, *Charadrius montanus* (PT)

Candidate Species

Fish

Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)

greater western mastiff-bat, *Eumops perotis californicus* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

grasshopper sparrow, *Ammodramus savannarum* (SC)

short-eared owl, *Asio flammeus* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

Aleutian Canada goose, *Branta canadensis leucopareia* (D)

Swainson's hawk, *Buteo Swainsoni* (CA)

ferruginous hawk, *Buteo regalis* (SC)

Lawrence's goldfinch, *Carduelis lawrencei* (SC)

Vaux's swift, *Chaetura vauxi* (SC)

black tern, *Chlidonias niger* (SC)

black swift, *Cypseloides niger* (SC)

white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

greater sandhill crane, *Grus canadensis tabida* (CA)

loggerhead shrike, *Lanius ludovicianus* (SC)

Lewis' woodpecker, *Melanerpes lewis* (SC)

long-billed curlew, *Numenius americanus* (SC)

white-faced ibis, *Plegadis chihi* (SC)

bank swallow, *Riparia riparia* (CA)

rufous hummingbird, *Selasphorus rufus* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

hispid bird's-beak, *Cordylanthus mollis ssp. hispidus* (SC)

Boggs Lake hedge-hyssop, *Gratiola heterosepala* (CA)

legenere, *Legenere limosa* (SC)

KEY:

(E)	*Endangered*	Listed (in the Federal Register) as being in danger of extinction.
(T)	*Threatened*	Listed as likely to become endangered within the foreseeable future.
(P)	*Proposed*	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(PX)	*Proposed Critical Habitat*	Proposed as an area essential to the conservation of the species.
(C)	*Candidate*	Candidate to become a *proposed* species.
(SC)	*Species of Concern*	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(MB)	*Migratory Bird*	Migratory bird
(D)	*Delisted*	Delisted. Status to be monitored for 5 years.
(CA)	*State-Listed*	Listed as threatened or endangered by the State of California.
(*)	*Extirpated*	Possibly extirpated from this quad.
(**)	*Extinct*	Possibly extinct.
	Critical Habitat	Area essential to the conservation of a species.

D-2

LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
LISTED SPECIES				
Riparia riparia (nesting) bank swallow	None/ T	–	Colonial nester; nests primarily in riparian and other lowland habitats; requires vertical banks/cliffs with fine textured/sandy soils near streams, rivers, lakes, or ocean to dig nesting hole	Not likely; no nesting habitat
Falco peregrinus anatum (nesting) American peregrine falcon	D/ E, FP	–	Uncommonly found in the Central Valley as a winter resident, requires protected cliffs and ledges for cover, frequents bodies of water in open areas with cliffs and cover for nesting	Not likely; no habitat
Elanus leucurus (nesting) white-tailed kite	SC/ FP	–	Low rolling foothills, valley margins with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland; dense-topped trees for nesting and perching	Observed in the project area; has nested in the vicinity
Branta canadensis leucopareia Aleutian Canada goose	D/ None	–	Open water, fields, in the Central Valley almost exclusively within the Merced National Wildlife Refuge	Not likely; this species occurs at only two distinct locations in the Central Valley
Buteo swainsoni (nesting) Swainson's hawk	None/ T	–	Breeds in stands with few trees in juniper-sage flats, riparian areas, oak savannahs, with adjacent suitable forage areas such as grasslands, or alfalfa or grain fields supporting rodent populations	May occur in the project area; mature trees suitable for nesting on the project site

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Haliaeetus leucocephalus (nesting and wintering) bald eagle	T/ E, FP	–	Large lakes and rivers, coastal lagoons, sea cliffs and islands	Not likely; no habitat
Charadrius montanus mountain plover	PT/ SC	–	Central Valley (winter resident) prefers grassland for foraging	Unlikely to occur; habitat flooded during winter season
Grus canadensis tabida (nesting and wintering) greater sandhill crane	None/ T, FP	–	Winters in the Central Valley; prefers wide open habitats, including mesic grasslands, mesic croplands, and large freshwater marshes	May occur in the project area
Empidonax traillii brewsteri little willow flycatcher	None/ E	–	Wet meadows and riparian habitats, requires dense willow thickets for nesting and roosting	Not likely; riparian habitat comprised almost entirely of oaks
Coccyzus americanus occidentalis Western yellow-billed cuckoo	C/ E	–	Willow and cottonwood tree riparian forests and orchards. Found along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter County, and in Kern County	Not likely; riparian habitat comprised almost entirely of oaks
Thamnophis gigas giant garter snake	T/ T, P	–	Prefers freshwater marsh and low gradient streams, has adapted to drainage canals and irrigation ditches	Not likely; outside the species' current known range, too high an elevation
Rana aurora draytonii California red-legged frog	T/ SC, P	–	Pools in marshes, streams, ponds, with emergent vegetation, and typically without predatory fish, require adequate hibernacula such as small mammal burrows and moist leaf litter	Not likely; no habitat

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Oncorhynchus tshawytscha Central Valley fall-run chinook salmon	C/ SC	–	Pacific Ocean, spawn in large, permanent coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Oncorhynchus tshawytscha winter-run chinook salmon	E/ E	–	Pacific Ocean, spawn in large, permanent coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Oncorhynchus tshawytscha spring-run chinook salmon	T/ T	–	Pacific Ocean, spawn in large, permanent coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Hypomesus transpacificus Delta smelt	T/ T	–	Low-mid reaches of San Joaquin-Sacramento Delta	Not likely; too far upstream from the Delta
Oncorhynchus mykiss Central Valley steelhead	T/ T	–	Pacific Ocean, spawn in coastal streams and rivers, over gravel beds	Not likely; Pleasant Grove Creek too seasonal
Pogonichthys macrolepidotus Sacramento splittail	T/ None	–	Lower Sacramento Delta, spawn over shoreline vegetation or over gravel in creek tributaries of large rivers during spring high water levels	Not likely; too far upstream from the Delta
Branchinecta lynchi vernal pool fairy shrimp	T/ None	–	Vernal pools, inhabit small, clear-water sandstone depression pools and grassed swale, earth slump, or basalt-flow depression pools	May occur in the project area

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Lepidurus packardi vernal pool tadpole shrimp	E/ None	–	Seasonal pools in unplowed grassland with old alluvial soils underlain by hardpan or in sandstone depressions, water in the pools has very low alkalinity and conductivity	May occur in the project area
Desmocerus californicus dimorphus valley elderberry longhorn beetle	T/ None	–	Occurs only in the Central Valley, in association with blue elderberry shrubs, prefers to lays eggs in elderberries 2 to 8 inches in diameter, some preference for "stressed" elderberries	Not likely; no elderberry shrubs are present in the project area
Gratiola heterosepala Boggs Lake hedge-hyssop	None/ E	1B/ 1-2-2	Marshes and swamps (freshwater), vernal pools; clay soils; usually in vernal pools, sometimes on lake margins; 10-2,375 meters	May occur in the project area
SPECIES OF CONCERN				
Perognathus inornatus inornatus San Joaquin pocket mouse	SC/ None	–	Grasslands, blue oak savannas, needs friable soils	Not likely; no habitat
Myotis thysanodes fringed myotis bat	SC/ None	–	Widespread in California, occurring in all but the Central Valley and Colorado and Mojave deserts; generally at 1,300-2,200 meters	Not likely; wrong elevation
Myotis volans long-legged myotis bat	SC/ None	–	Coast ranges, Cascade/Sierra ranges, Mojave Desert mountains, common above 1,200 meters	Not likely; wrong elevation

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Myotis yumanensis Yuma myotis bat	SC/ None	–	Forests and woodlands with sources of water over which to feed, roosts in buildings, mines, caves, crevices, occasionally under bridges	May occur in the project area
Myotis evotis long-eared myotis bat	SC/ None	–	Widespread in California, avoids the arid Central Valley and hot deserts	Not likely; no habitat
Myotis ciliolabrum small-footed myotis bat	SC/ None	–	Arid woody or brushy uplands, near water, west and east sides of Sierra Nevada; 0-2,700 meters	May occur in the project area
Corynorhinus townsendii townsendii Pacific western big-eared bat	SC/ SC	–	Prefers mesic areas; roosts in caves or similar structures	Not likely; no roosting habitat
Eumops perotis californicus greater western mastiff bat	SC/ None	–	Open, arid grassland and sparse woodland, often utilizing cliffs for breeding and roosting	May occur in the project area
Agelaius tricolor (nesting colony) tricolored blackbird	SC/ SC	–	Open water, protected nesting substrate such as blackberry brambles or emergent vegetation sufficient to accommodate at least fifty nesting pairs	Not likely; no habitat
Athene cunicularia hypugea Western burrowing owl	SC/ SC	–	Grassland, sparse shrubland use abandoned burrows of ground squirrel, and other burrowing mammals, for shelter and nesting	Not likely; no small mammal burrows observed in the project area

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Buteo regalis (wintering) ferruginous hawk	SC/ SC	–	Grasslands or desert with elevated structure for nest; uncommon winter resident and migrant in Central Valley	Not likely; no habitat
Plegadis chihi white-faced ibis	SC/ SC	–	Roosts among dense stands of freshwater emergent vegetation, near shallow water or muddy fields for foraging, currently known to the Central Valley as a rare summer visitor	Not likely; no habitat
Ammodramus savannarum grasshopper sparrow	SC/ None	–	Nests in dense grasslands with a thick cover of grasses and forbs in the Central Valley	Not likely; no habitat
Asio flammeus short-eared owl	SC/ SC	–	Nests in marsh habitats; during winter uses grasslands, marshes, and agricultural habitats	May occur in the project area; nesting habitat would not be impacted
Carduelis lawrencei Lawrence's goldfinch	SC/ None	–	Oak and pine riparian woodland, chaparral, piñon/juniper woodland, arid weedy areas near water	May occur in the project area
Chaetura vauxi Vaux's swift	SC/ SC	–	Typically associated with old growth redwood forests on the coast and in the Sierra Nevada, and man-made structures such as chimneys	Not likely; no habitat
Cypseloides niger black swift	SC/ SC	–	Mountainous cliffs, sea cliffs, and caves	Not likely; no habitat
Chlidonias niger black tern	SC/ SC	–	Freshwater marshes and wetlands in the Central Valley and northeastern California	Not likely; no habitat

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Lanius ludovicianus loggerhead shrike	SC/ SC	–	Throughout California in grasslands, woodlands, and agricultural areas	May occur in the project area
Melanerpes lewis Lewis' woodpecker	SC/ None	–	Year-round resident of the Central Valley, found in open woodland or forest, including oaks and riparian areas	May occur in the project area
Numenius americanus long-billed curlew	SC/ SC	–	Large coastal estuaries; upland herbaceous areas and cultivated fields in the Central Valley	May occur in the project area
Selasphorus rufus rufous hummingbird	SC/ None	–	Coniferous forests and adjacent open fields in northern California	Not likely; no habitat
Circus cyaneus northern harrier	None/ SC	–	In the Central Valley, occurs in meadows, grasslands, rangelands, fresh and saltwater emergent wetlands	Observed in the project area
Phrynosoma coronatum frontale California horned lizard	SC/ SC, P	–	Valley-foothill hardwood, conifer, and riparian habitats, as well as pine-cypress, juniper, and annual grass habitats, basks on low boulders or rocks, burrow into soil or under objects for cover and hibernation	May occur in the project area
Clemmys marmorata northwestern pond turtle	SC/ SC, P	–	Ponds, marshes, rivers, streams, irrigation ditches, need basking sites such as partially submerged logs or rocks, and suitable upland habit (sandy banks or grassy open fields) for egg laying	Observed in the project area
Scaphiopus hammondii Western spadefoot	SC/ SC	–	Grassland and valley-foothill hardwood woodlands, vernal pools are essential for breeding and egg laying	May occur in the project area

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Acipenser medirostris green sturgeon	SC/ SC	–	Pacific Ocean, seldom migrates inland beyond estuaries of large rivers	Not likely; Pleasant Grove Creek too far upstream from ocean
Spirinchus thaleichthys longfin smelt	SC/ None	–	Moderately saline water, bays and estuaries	Not likely; Pleasant Grove Creek too
Linderiella occidentalis California linderiella	SC/ None	–	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan, or in sandstone depressions; water has very low alkalinity, conductivity and total dissolved solids	May occur in the project area
Legenere limosa legenere	SC/ None	1B/ 2-3-3	Vernal pools; in beds of vernal pools; many historic occurrences are extirpated	May occur in the project area
Cordylanthus mollis hispidus hispid bird's beak	SC/ None	1B/ 2-3-3	Meadows, playas, valley and foothill grasslands; in damp alkaline soils, especially in alkaline meadows and alkali sinks with *Distichlis* spp.; 10-155 meters	Not likely; no habitat
Downingia pusilla dwarf downingia	None/ None	2/ 1-2-1	Valley and foothill grassland (mesic), vernal pools; 1-445 meters	Observed in the project area
Sagittaria sanfordii Sanford's arrowhead	None/ None	1B/ 2-2-3	Swamps and marshes (assorted shallow freshwater); 0-610 meters	Not likely; no habitat
Balsamorhiza macrolepis var. *macrolepis* big-scale balsamroot	None/ None	1B/ 2-2-3	Chaparral, cismontane woodland, valley and foothill grassland / sometimes serpentinite; 90-1,400 meters	Not likely; no habitat

TABLE 1
LISTED, PROPOSED, SPECIES OF CONCERN, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE VICINITY OF THE REASON FARMS RETENTION BASIN PROJECT AREA

Scientific Name COMMON NAME	Federal/ State Listing[1]	CNPS/ R-E-D[2]	Preferred Habitat	Likelihood That Species May Occur in Project Area
Juncus leiospermus var. *ahartii* Ahart's dwarf rush	None/ None	1B/ 3-2-3	Valley and foothill grassland (mesic); 30-100 meters	Not likely; no habitat

[1] Federal and State Listing Codes:
- E = Endangered
- T = Threatened
- C = Candidate
- D = Delisted
- PT = Proposed Threatened
- P = Protected
- FP = Fully Protected
- SC = Species of Concern

[2] Source: CNPS, 2001. California Native Plant Society's Inventory of Rare and Endangered Plants of California, 6th Edition. David P. Tibor, Editor. Sacramento, CA.

CNPS List:
- 1B. Rare or Endangered in California and elsewhere
- 2. Rare or Endangered in California, more common elsewhere

CNPS Rarity – Endangerment – Distribution key:

R – Rarity
- 1 Rare in California but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
- 2 Distributed in a limited number of occurrences in California, occasionally more if each occurrence is small.
- 3 Distributed in California in one to several highly restricted occurrences, or present in such small numbers that it is seldom report.

E – Endangerment
- 1 Not very endangered in California
- 2 Fairly endangered in California
- 3 Seriously endangered in California

D – Distribution
- 1 More or less widespread outside California
- 2 Rare outside California
- 3 Endemic to California

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PLANT SPECIES OBSERVED ON THE PROJECT SITE AND IMMEDIATE VICINITY

Table 2
Plant Species Observed on the Project Site and Immediate Vicinity

Scientific Name	Common Name	Habitat Type			
		Grassland/ Ruderal	Seasonal Wetland/ Vernal Pool	Riparian	Cultivated
Amsinckia menziesii	rancher's fireweed	X		X	
Anagallis arvensis	scarlet pimpernel	X			
Anthriscus caucaulis	bur-chervil			X	
Artemisia douglasii	mugwort			X	
Arundo donax	giant reed			X	
Avena fatua	wild oat			X	
Briza minor	little quaking grass	X			
Bromus diandrus	ripgut brome	X		X	
Bromus hordeaceus	soft chess	X			
Calandrinia ciliata	red maids	X			
Callitriche marginata	water-starwort		X		
Carduus pycnocephalus	Italian thistle	X		X	
Carex sp.	sedge		X		
Centaurea solstitialis	yellow star thistle	X		X	
Cephalanthus occidentalis	button bush			X	
Cerastium arvense	field chickweed	X		X	
Chlorogalum pomeridianum	soap plant	X		X	
Claytonia parviflora		X		X	
Convolvulus arvensis	bindweed	X			
Downingia pusilla	dwarf downingia		X		
Eleocharis macrostachya	spikerush		X		
Erodium botrys	red-stem filaree	X	X		
Erodium cicutarium	white-stem filaree	X			
Eryngium vaseyi	coyote thistle		X		
Eschscholzia californica	California poppy			X	

Table 2
Plant Species Observed on the Project Site and Immediate Vicinity

Scientific Name	Common Name	Habitat Type			
		Grassland/ Ruderal	Seasonal Wetland/ Vernal Pool	Riparian	Cultivated
Ficus carica	fig			X	
Filago gallica	herba impia	X			
Galium aparine	goose grass			X	
Geranium disectum	cut-leaf geranium	X	X	X	
Glyceria occidentalis	mannagrass		X		
Gratiola ebracteata	hedge-hyssop		X		
Hordeum marinum	Mediterranean barley		X		
Hordeum murinum ssp. *leporinum*	hare barley	X		X	
Hypochaeris glabra	smooth cat's-ear	X			
Juncus effusus	Pacific rush			X	
Juglans californica	California black walnut			X	
Lactuca seriola	prickly lettuce	X			
Lathyrus sp.	wild pea				
Lepidium nitidum	peppergrass		X		
Leymus triticoides	creeping wildrye			X	
Lilaea scilloides	flowering quillwort		X		
Lolium multiflorum	Italian ryegrass		X		
Lolium perenne	perennial ryegrass		X		
Lupinus bicolor	miniature lupine	X		X	
Lythrum hyssopifolium			X		
Marah fabaceous	California man-root			X	
Marrubium vulgare	horehound			X	
Medicago polymorpha	bur clover	X			
Mentha pulegium	pennyroyal			X	
Picris echioides	bristly ox-tongue		X	X	

Table 2
Plant Species Observed on the Project Site and Immediate Vicinity

Scientific Name	Common Name	Habitat Type			
		Grassland/ Ruderal	Seasonal Wetland/ Vernal Pool	Riparian	Cultivated
Plagiobothrys stipitatus var. *micranthus*	popcornflower		X		
Plantago coronopus	cut-leaf plantain	X	X		
Plantago lanceolatum	English plantain	X			
Populus fremontii	Fremont's cottonwood			X	
Prunus dulcis	almond			X	
Quercus douglasii	blue oak			X	
Quercus lobata	Valley oak			X	
Quercus wislizenii	Coast live oak			X	
Ranunculus bonariensis	buttercup		X		
Ranunculus muricatus	buttercup		X		
Raphanus sativus	wild radish			X	
Rubus discolor	Himalayan blackberry			X	
Rumex crispus	curly dock		X	X	
Salix lasiolepis	arroyo willow			X	
Salix exigua	narrow-leaved willow			X	
Salix gooddingii	Goodding's willow			X	
Sanicula sp.	sanicle			X	
Scirpus acutus	bulrush			X	
Senecio vulgaris	groundsel			X	
Silene galica	catchfly	X			
Silybum marianum	milk thistle	X		X	
Sonchus oleraceous	common sow thistle			X	
Spergula arvensis	spurrey	X			
Toxicodendron diversiloba	poison oak			X	

Table 2
Plant Species Observed on the Project Site and Immediate Vicinity

Scientific Name	Common Name	Habitat Type			
		Grassland/ Ruderal	Seasonal Wetland/ Vernal Pool	Riparian	Cultivated
Trifolium dubium	little hop clover	X			
Trifolium hirtum	rose clover	X			
Triphysaria eriantha	butter-and-eggs	X			
Triteleia laxa	Ithuriel's spear	X			
Triteleia hyacinthina	white brodiaea	X			
Typha latifolia	broad-leaf cattail				X
Veronica peregrina ssp. *xalapensis*	purslane speedwell			X	
Vicia americana	American vetch			X	
Vicia sativa	vetch			X	
Vulpia microstachys	rattail fescue	X			

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WILDLIFE SPECIES OBSERVED ON THE PROJECT SITE AND IMMEDIATE VICINITY

Table 3
Wildlife Species Observed on the Project Site and Immediate Vicinity

Scientific Name	Common Name
Birds	
Agelaius phoeniceus	red-winged blackbird
Aix sponsa	wood duck
Anas americana	American wigeon
Anas cyanoptera	cinnamon teal
Anas platyrhynchos	mallard
Aphelocoma coerulescens	scrub jay
Ardea herodias	great blue heron
Baeolophus inornatus	oak titmouse
Botaurus lentiginosus	American bittern
Branta canadensis	Canada goose
Bubo virginianus	great horned owl
Buteo jamaicensis	red-tailed hawk
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Casmerodius albus	great egret
Cathartes aura	turkey vulture
Charadrius vociferus	killdeer
Ceryle alcyon	belted kingfisher
Circus cyaneus	northern harrier
Colaptes auratus	northern flicker
Corvus brachyrhynchos	American crow
Dendroica coronata	yellow-rumped warbler
Elanus caeruleus	white-tailed kite
Euphagus cyanocephalus	Brewer's blackbird
Falco sparverius	American kestrel
Fulica americana	American coot
Hirundo rustica	barn swallow
Icterus bullockii	Bullock's oriole
Junco hyemalis	dark-eyed junco
Melospiza lincolnii	Lincoln's sparrow
Melospiza melodia	song sparrow
Mimus polyglottos	northern mockingbird
Molothrus ater	brown-headed cowbird
Nycticorax nycticorax	black-crowned night-heron

Table 3
Wildlife Species Observed on the Project Site and Immediate Vicinity

Scientific Name	Common Name
Passer domesticus	house sparrow
Phasianus colchicus	ring-necked pheasant
Phalacrocorax auritus	double-crested cormorant
Pica nuttalli	yellow-billed magpie
Picoides pubescens	downy woodpecker
Pipilo crissalis	California towhee
Psaltriparus minimus	bushtit
Regulus calendula	ruby-crowned kinglet
Sayornis nigricans	black phoebe
Sturnella neglecta	western meadowlark
Sturnus vulgaris	European starling
Tachycineta bicolor	tree swallow
Turdus migratorius	American robin
Tringa spp.	yellowlegs spp.
Tyrannus verticalis	western kingbird
Wilsonia pusilla	Wilson's warbler
Zenaida macroura	mourning dove
Zonotrichia atricapilla	golden-crowned sparrow
Zonotrichia leucophrys	white-crowned sparrow
Mammals	
Ondatra zibethica	muskrat
Sylvilagus auduboni	desert cottontail
Reptiles	
Clemmys marmorata	western pond turtle
Pituophis melanoleucus	gopher snake
Thamnophis sirtalis	common garter snake
Amphibians	
Hyla regilla	Pacific treefrog
Rana catesbeiana	bullfrog

Source: URS field surveys conducted on March 15 and April 23, 2002.